IBPS Question Bank

Chapter 2 — Reasoning Ability

1071 questions | 51 subtopics

Easy / Moderate / Difficult | with worked solutions

How this was produced, and how far it has been checked. These questions were machine-generated against the IBPS syllabus breakdown. Every question was then re-solved by a second, independent pass that did not see the proposed answer, and anything it flagged was re-worked by a third pass. In this chapter 51 of 51 subtopics (100%) completed that check; any marked [unchecked] below did not, and should be treated as a draft.

Across the whole bank the checker flagged **285 of 3,948 questions (7.2%)**, and 149 subtopics were revised as a result. The largest categories were near-duplicate questions within a subtopic (34%) and a faulty explanation attached to an otherwise correct answer (22%); genuinely wrong answer keys were 9%. The counts in each subtopic heading show what was flagged there *before* repair.

This is a strong check, not a proof. Both passes are the same kind of system and can share a blind spot, so a surviving error is likelier in the places machines agree wrongly — fine detail in Computer Knowledge, and judgement calls in English usage. Re-solve any answer you dispute rather than trusting the key, and please report anything that still looks wrong.

Section 2.1

2.1.1 Linear arrangement: single row, uni-directional [checked]

1. Seven employees — P, Q, R, S, T, U and V — sit in a straight row facing north. Q sits third from the left end. R sits immediately to the right of Q. S sits at the extreme right end. P sits second to the left of Q. T sits immediately to the left of S. U sits immediately to the right of R.
Who sits second to the right of V? [Easy]

(A) P
(B) Q
(C) R
(D) T
(E) None of these

2. Six friends — Amit, Bhavna, Chirag, Deepa, Esha and Farhan — sit in a row facing north. Deepa sits at the extreme left end. Amit sits third to the right of Deepa. Esha sits immediately to the left of Amit. Farhan sits at the extreme right end. Bhavna sits immediately to the right of Amit.
How many persons sit between Chirag and Bhavna? [Easy]

(A) One
(B) Two
(C) Three
(D) Four
(E) None of these

3. In a row of 8 bank trainees all facing north, Rakesh is third from the left end and Suresh is fourth from the right end. How many trainees sit between Rakesh and Suresh? [Easy]

(A) One
(B) Two
(C) Three
(D) No one
(E) Cannot be determined

4. In a row of children all facing north, Nisha is 11th from the left end and 9th from the right end. What is the total number of children in the row? [Easy]

(A) 18
(B) 19
(C) 20
(D) 21
(E) None of these

5. Five bank employees — Ajay, Bhanu, Chetan, Divya and Eshan — sit in a row facing north. Chetan sits at one of the extreme ends. Only two persons sit between Chetan and Divya. Ajay sits immediately to the right of Divya. Bhanu is not an immediate neighbour of Chetan. Eshan sits somewhere to the left of Bhanu.
Who sits exactly in the middle of the row? [Easy]

(A) Ajay
(B) Bhanu
(C) Chetan
(D) Divya
(E) Eshan

6. Seven students sit in a row facing north. Rohit sits fourth from the left end. Mohit sits second to the right of Rohit. Sohit sits at the extreme right end.
How many students sit between Mohit and Sohit? [Easy]

(A) No one
(B) One
(C) Two
(D) Three
(E) None of these

7. In a queue of 25 customers standing in a single row facing north, Kavita is 12th from the left end. Manish stands 5 places to the right of Kavita. What is Manish's position from the right end? [Easy]

(A) 8th
(B) 9th
(C) 10th
(D) 11th
(E) None of these

8. Eight persons — Anil, Bina, Charu, Dev, Ekta, Farid, Gita and Harsh — sit in a row facing north. Dev sits fourth to the left of Harsh. Neither Dev nor Harsh sits at an extreme end. Anil sits at the extreme left end. Bina sits second to the right of Dev, and Anil sits third to the left of Bina. Gita sits immediately to the right of Harsh. Farid sits between Dev and Bina. Ekta sits somewhere to the left of Charu.
How many persons sit between Farid and Gita? [Moderate]

(A) Two
(B) Three
(C) Four
(D) Five
(E) None of these

9. Nine friends sit in a row facing north. Vikas sits fourth from the left end. Only two persons sit between Vikas and Nitin, and Nitin sits to the right of Vikas. Only three persons sit between Nitin and Om.
What is Om's position from the right end? [Moderate]

(A) 5th
(B) 6th
(C) 7th
(D) 8th
(E) None of these

10. Seven persons — Jatin, Kiran, Lalit, Meena, Naveen, Ojas and Payal — sit in a row facing north. Lalit sits at the extreme left end and Jatin sits immediately to the right of Lalit. Meena sits third

from one of the ends. Exactly two persons sit between Meena and Kiran. Naveen sits immediately to the left of Kiran. Payal is not an immediate neighbour of Meena.
Who sits second to the right of Ojas? [Moderate]

(A) Jatin
(B) Kiran
(C) Meena
(D) Naveen
(E) None of these

11. In a row of students all facing north, Suresh is 4th from the left end and Ganesh is 5th from the right end. When Suresh and Ganesh interchange their positions, Suresh becomes 12th from the left end. What is the total number of students in the row? [Moderate]

(A) 15
(B) 16
(C) 17
(D) 18
(E) None of these

12. Five customers — Aarti, Bhaskar, Chandni, Dinesh and Eshwar — stand in a single queue facing north at a bank counter. Each deposits a different amount among Rs. 5,000, Rs. 8,000, Rs. 12,000, Rs. 15,000 and Rs. 20,000. Chandni stands at the extreme left end and deposits Rs. 12,000. Bhaskar stands immediately to the right of Chandni and deposits Rs. 8,000. The one who deposits Rs. 20,000 stands exactly in the middle of the queue. Aarti stands at the extreme right end. Dinesh deposits more than Eshwar, and Eshwar deposits Rs. 15,000.
Who stands second to the left of the one who deposits Rs. 5,000? [Moderate]

(A) Aarti
(B) Bhaskar
(C) Chandni
(D) Dinesh
(E) Eshwar

13. Six persons — Ravi, Sonal, Tarun, Uma, Vinay and Waseem — sit in a row facing north. Vinay sits second to the right of Ravi. Ravi does not sit at an extreme end. Uma sits at one of the extreme ends but is not an immediate neighbour of Vinay. Tarun sits immediately to the left of Sonal, and Sonal sits at the extreme right end.
Which of the following statements is TRUE? [Moderate]

(A) Tarun sits at one of the extreme ends.
(B) Only two persons sit between Uma and Vinay.
(C) Waseem sits immediately to the right of Vinay.
(D) Ravi and Sonal are immediate neighbours.
(E) None of these

14. Twenty-six people stand in a single row facing north. Deepak stands 5th from the left end and Ekta stands 14th from the right end. Exactly three people stand between Ekta and Farhan, and Farhan stands to the left of Ekta.
How many people stand between Deepak and Farhan? [Moderate]

(A) Two
(B) Three
(C) Four
(D) Five
(E) None of these

15. Eight employees — Ankit, Bhumi, Chirag, Divya, Esha, Gagan, Harpreet and Ishan — sit in a row facing north. Chirag sits fifth to the right of Ankit, and neither Ankit nor Chirag sits at an extreme

end. Bhumi sits third to the left of Chirag. Divya sits second to the right of Bhumi. Gagan sits at the extreme left end. Esha sits at one of the extreme ends and is not an immediate neighbour of Ankit. Only one person sits between Gagan and Ishan. Harpreet sits somewhere to the right of Gagan.
If all eight are now reseated in alphabetical order from the left end to the right end, how many of them remain in the same seat as before? [Difficult]

(A) No one
(B) One
(C) Two
(D) Three
(E) More than three

16. Nine persons — Manish, Nikhil, Pooja, Ritu, Sameer, Tanya, Umesh, Varun and Yash — sit in a row facing north. Only two persons sit to the right of Manish. Nikhil sits third to the left of Manish. Only two persons sit between Nikhil and Pooja. Ritu sits second to the right of Pooja. Sameer sits immediately to the left of Ritu. Yash sits at the extreme right end. Only one person sits between Tanya and Umesh, and Umesh sits to the right of Manish.
Four of the following five pairs are alike in a certain way based on the final arrangement and so form a group. Which pair does NOT belong to that group? [Difficult]

(A) Pooja, Ritu
(B) Sameer, Nikhil
(C) Ritu, Varun
(D) Nikhil, Tanya
(E) Varun, Umesh

17. Seven officers of a bank — Ajay, Bhavna, Chandan, Deepika, Ehsaan, Farah and Girish — sit in a row facing north, and each draws a different monthly salary. Chandan sits fourth from the left end. Exactly two persons sit between Chandan and Bhavna, and Bhavna sits to the right of Chandan. The officer who earns Rs. 55,000 sits at the extreme left end and that officer is Girish. Ajay sits second to the left of Chandan and earns Rs. 40,000. Deepika sits immediately to the right of Chandan and earns Rs. 35,000. Farah is an immediate neighbour of Ajay but does not sit at an extreme end. Bhavna earns Rs. 10,000 more than Deepika.
Who sits third to the right of the officer who earns Rs. 40,000? [Difficult]

(A) Bhavna
(B) Chandan
(C) Deepika
(D) Ehsaan
(E) None of these

18. Some persons sit in a straight row facing north. Ramesh sits eighth from the left end. Sarita sits fifth to the right of Ramesh, and only four persons sit to the right of Sarita. Tanvi sits exactly in the middle of the row.
How many persons sit between Tanvi and Ramesh? [Difficult]

(A) No one
(B) One
(C) Two
(D) Three
(E) Cannot be determined

19. Seven friends — Ishita, Jai, Kunal, Lata, Mohit, Neha and Om — sit in a row facing north. Lata sits at the extreme right end and Mohit sits at the extreme left end. Only two persons sit between Lata and Jai. Kunal sits third to the right of Ishita, and Mohit sits immediately to the left of Ishita. Neha sits somewhere to the left of Om.
If Mohit now interchanges his seat with Kunal and, at the same time, Ishita interchanges her seat with Om, who will sit second to the right of Jai? [Difficult]

(A) Kunal
(B) Lata
(C) Mohit
(D) Ishita
(E) None of these

20. Six persons — Praveen, Qadir, Rajan, Sneha, Tejas and Uday — sit in a row facing north. Praveen sits second to the left of Qadir. Tejas sits immediately to the right of Praveen. Rajan sits at one of the extreme ends. Only one person sits between Rajan and Sneha.
Which of the following statements is definitely TRUE? [Difficult]

(A) Uday sits at one of the extreme ends.
(B) Only two persons sit between Sneha and Qadir.
(C) Rajan and Uday are immediate neighbours.
(D) Praveen sits at one of the extreme ends.
(E) None of these

21. A certain number of persons sit in a row facing north. Alok sits seventh from the left end and Bharti sits fifth from the right end. Exactly three persons sit between Alok and Bharti. Chetan sits between Alok and Bharti in such a way that exactly two persons sit between Chetan and Bharti. Given that more than 12 persons sit in the row, what is Chetan's position from the left end? [Difficult]

(A) 7th
(B) 8th
(C) 9th
(D) 10th
(E) None of these

2.1.2 Linear arrangement: double row, facing each other [checked, 2 flagged]

22. Six friends sit in two parallel rows of three. Rahul, Sanjay and Tarun sit in Row 1 facing south, while Uma, Vidya and Waheeda sit in Row 2 facing north, so that each member of Row 1 faces exactly one member of Row 2. Tarun sits at the extreme right end of Row 1. Sanjay sits immediately to the right of Rahul. Vidya sits at the extreme east end of Row 2. Uma sits to the left of Waheeda. Who faces Sanjay? [Easy]

(A) Uma
(B) Vidya
(C) Waheeda
(D) Tarun
(E) None of these

23. P, Q, R and S sit in Row 1 facing north; W, X, Y and Z sit in Row 2 facing south, each person of one row facing exactly one person of the other row. Q sits at the extreme west end of Row 1. R faces Y. Y sits second to the right of W. P sits immediately to the left of S. Z is not an immediate neighbour of W. Which of the following pairs face each other? [Easy]

(A) Q and Y
(B) R and Z
(C) P and X
(D) S and Y
(E) None of these

24. Kavya, Latha and Meena sit in Row 1 facing south, while Nitin, Om and Pranav sit in Row 2 facing north, so that each person of Row 1 faces one person of Row 2. Latha sits second to the right of Kavya. Om faces Meena. Nitin sits to the left of Om. Who faces Kavya? [Easy]

(A) Pranav
(B) Nitin
(C) Om
(D) Meena
(E) None of these

25. Eight persons wait at a bank counter in two parallel rows of four. A, B, C and D sit in Row 1 facing north; P, Q, R and S sit in Row 2 facing south, each facing exactly one member of the other row. C faces Q. Q sits at the extreme right end of Row 2. B sits second to the right of C. S sits immediately to the left of R. P sits at one of the extreme ends. Who faces B? [Easy]

(A) S
(B) P
(C) Q
(D) R
(E) None of these

26. A, B, C, D and E sit in Row 1 facing north; P, Q, R, S and T sit in Row 2 facing south. C sits exactly in the middle of Row 1. A sits at the extreme west end of Row 1. E sits immediately to the left of C. B sits at the extreme east end of Row 1. T faces D. Q sits third to the right of T. R sits immediately to the right of S. How many persons sit between R and Q in Row 2? [Easy]

(A) One
(B) Two
(C) Three
(D) None
(E) Four

27. J, K, L and M sit in Row 1 facing north; V, W, X and Y sit in Row 2 facing south. K faces X. X sits second to the right of V. M sits at the extreme west end of Row 1. K does not sit at any extreme end. J sits immediately to the right of K. Y sits at one of the extreme ends. Who faces the person who sits second to the left of J in Row 1? [Easy]

(A) W
(B) Y
(C) V
(D) X
(E) None of these

28. Ashok, Bimal and Chirag sit in Row 1 facing south, while Divya, Eshan and Falguni sit in Row 2 facing north, each member of one row facing exactly one member of the other. Bimal sits at the extreme left end of Row 1. Ashok faces Divya. Divya sits immediately to the right of Eshan. Who sits at the extreme right end of Row 1? [Easy]

(A) Ashok
(B) Bimal
(C) Divya
(D) Eshan
(E) None of these

29. Twelve employees of Kanara Bank sit in two parallel rows of six. A, B, C, D, E and F sit in Row 1 facing north; P, Q, R, S, T and U sit in Row 2 facing south. A sits third to the left of B, and neither A nor B sits at any extreme end. F sits immediately to the right of A. C sits immediately to the left of B. D and E sit at the two extreme ends, D being to the west of E. R faces C. P sits second to the right of R. T faces D. U sits between P and R. S faces B. Who sits second to the left of the person who faces U? [Moderate]

(A) A
(B) C
(C) D
(D) E
(E) None of these

30. L, M, N and O sit in Row 1 facing south; W, X, Y and Z sit in Row 2 facing north, each person of one row facing exactly one person of the other. N sits second to the right of L. O sits at the extreme left end of Row 1. Y faces M. Only one person sits between W and Z, and W sits to the left of Z. Who faces the person sitting immediately to the left of L in Row 1? [Moderate]

(A) W
(B) X
(C) Y
(D) Z
(E) None of these

31. A, B, C, D and E sit in Row 1 facing north; V, W, X, Y and Z sit in Row 2 facing south. B sits at the extreme east end of Row 1. Two persons sit between B and D. A faces X. X sits third to the left of Z. A is not an immediate neighbour of D. C sits to the west of E. W faces D. V does not sit at any extreme end. Which of the following statements is TRUE? [Moderate]

(A) E faces V
(B) Y faces D
(C) C sits second to the right of D
(D) Z sits at the extreme left end of Row 2
(E) None of these

32. Anil, Bhavna, Chandra and Dinesh sit in Row 1 facing north, while Gopal, Hema, Indu and Jatin sit in Row 2 facing south, each facing exactly one person of the other row. Chandra sits second to the right of Anil. Hema faces Anil and sits at one of the extreme ends of Row 2. Bhavna sits immediately to the left of Chandra. Jatin sits second to the right of Indu. Who faces the person sitting immediately to the right of Jatin? [Moderate]

(A) Bhavna
(B) Chandra
(C) Dinesh
(D) Anil
(E) None of these

33. Rakesh, Suresh, Tarun, Umesh and Vikas sit in Row 1 facing north; Neha, Ojas, Pallavi, Qadir and Ritu sit in Row 2 facing south. Tarun sits exactly in the middle of Row 1. Neha faces Tarun. Ojas sits second to the left of Neha. Pallavi sits immediately to the right of Ojas. Qadir does not sit at any extreme end. Rakesh faces Ritu. Vikas sits second to the left of Umesh. Four of the following five pairs are alike in a certain way based on the seating arrangement and hence form a group. Which one does NOT belong to that group? [Moderate]

(A) Rakesh - Ritu
(B) Tarun - Neha
(C) Suresh - Pallavi
(D) Umesh - Pallavi
(E) Vikas - Qadir

34. Eight bank interns sit in two parallel rows of four. Kiran, Lalit, Manoj and Nisha sit in Row 1 facing south, while Pooja, Rohit, Sonal and Tanvi sit in Row 2 facing north. Manoj sits at the extreme right end of Row 1. Lalit sits second to the left of Manoj. Kiran faces Pooja. Pooja sits immediately to the left of Rohit. Tanvi is not an immediate neighbour of Rohit. Who sits second to the left of Nisha? [Moderate]

(A) Manoj
(B) Kiran
(C) Lalit
(D) Tanvi
(E) None of these

35. A, B, C, D and E sit in Row 1 facing north; P, Q, R, S and T sit in Row 2 facing south. D sits at the extreme west end of Row 1. The person who faces D sits third to the right of Q. R faces D. B

sits second to the right of D. T sits immediately to the right of Q. E sits at one of the extreme ends. P faces A. How many persons sit between B and the person who faces S? [Moderate]

(A) None
(B) One
(C) Two
(D) Three
(E) More than three

36. Twelve persons sit in two parallel rows of six. A, B, C, D, E and F sit in Row 1 facing north; P, Q, R, S, T and U sit in Row 2 facing south. Only two persons sit between C and F, and C sits to the west of F. A sits at the extreme east end of Row 1 and B sits immediately to the left of A. D is not an immediate neighbour of C. Q faces F. Only one person sits between Q and S, and S sits to the west of Q. T sits third to the left of S. P faces the person who sits immediately to the left of F in Row 1. U sits at an extreme end, and R is not an immediate neighbour of S. Who sits exactly between S and Q in Row 2, and whom does that person face? [Difficult]

(A) P, who faces E
(B) P, who faces D
(C) T, who faces A
(D) R, who faces B
(E) None of these

37. Twelve students sit in two parallel rows of six. Ankit, Bhola, Chirag, Deepa, Ekta and Farhan sit in Row 1 facing north, while Girish, Hina, Ishan, Jyoti, Kamal and Lata sit in Row 2 facing south. Two persons sit between Deepa and Farhan. Hina faces Deepa. Two persons sit between Hina and Girish, and Girish sits at an extreme end of Row 2. Ankit sits second to the right of Farhan. Chirag sits at the extreme east end of Row 1. Bhola is not an immediate neighbour of Deepa. Jyoti sits second to the right of Hina. Lata and Kamal are immediate neighbours, with Kamal to the east of Lata. Which of the following statements is NOT true? [Difficult]

(A) Ishan faces Ankit
(B) Only two persons sit between Girish and Hina
(C) Ekta faces Lata
(D) Bhola sits second to the left of Deepa
(E) Chirag sits at the extreme left end of Row 1

38. A, B, C, D and E sit in Row 1 facing south; P, Q, R, S and T sit in Row 2 facing north. C sits third to the left of E. R faces E. R sits second to the left of P. Q sits at the extreme west end of Row 2. A sits at the extreme right end of Row 1. B is not an immediate neighbour of C. T faces B. If all the persons of Row 1 are now made to sit in alphabetical order from the west end of the row, keeping Row 2 unchanged, who will then face P? [Difficult]

(A) B
(B) C
(C) D
(D) E
(E) None of these

39. Ajay, Bipin, Chetan, Dhruv, Eknath and Ganesh sit in Row 1 facing south, while Hema, Indira, Juhi, Kavita, Latika and Meera sit in Row 2 facing north, each person of one row facing exactly one person of the other. Dhruv sits at the extreme left end of Row 1. Only two persons sit between Dhruv and Ajay. Chetan sits immediately to the right of Ajay. Bipin sits second to the left of Chetan. Ganesh is not an immediate neighbour of Bipin. Kavita faces Bipin. Two persons sit between Kavita and Hema. Juhi sits second to the right of Hema. Meera and Latika sit next to each other, with Meera to the east of Latika. If Chetan and Eknath interchange their positions, who will then face Chetan? [Difficult]

(A) Hema
(B) Indira
(C) Juhi
(D) Kavita
(E) None of these

40. Eight customers of Uttam Bank sit in two parallel rows of four. Arjun, Bhavesh, Chitra and Divya sit in Row 1 facing north, while Ekta, Farid, Gaurav and Hansa sit in Row 2 facing south. The four persons of Row 1 deposited Rs. 20,000, Rs. 40,000, Rs. 60,000 and Rs. 80,000 in some order, and the four persons of Row 2 deposited Rs. 30,000, Rs. 50,000, Rs. 70,000 and Rs. 90,000 in some order. Arjun faces Hansa. Hansa sits second to the left of Farid. Chitra sits at the extreme west end of Row 1. Divya sits immediately to the west of Bhavesh. Gaurav sits at an extreme end. The person facing Ekta deposited Rs. 20,000. Arjun deposited more than Divya, and Divya deposited more than Chitra. Ekta deposited the highest amount in her row, Hansa the lowest, and Farid deposited Rs. 20,000 less than Gaurav. What is the total amount deposited by the person who faces Bhavesh and the person sitting immediately to the right of Chitra? [Difficult]

(A) Rs. 1,10,000
(B) Rs. 1,30,000
(C) Rs. 1,50,000
(D) Rs. 1,60,000
(E) None of these

41. Twelve persons sit in two parallel rows of six. Pallav, Qamar, Rishi, Sahil, Tejas and Uday sit in Row 1 facing south, while Anita, Bindu, Vidya, Waheeda, Yamini and Zoya sit in Row 2 facing north. Rishi sits third to the right of Pallav, and neither Rishi nor Pallav sits at any extreme end. Yamini faces Pallav. Only one person sits between Yamini and Zoya. Waheeda sits at the extreme right end of Row 2. Vidya sits fourth to the left of Waheeda. Anita is not an immediate neighbour of Zoya. Sahil faces Bindu. Tejas sits immediately to the right of Sahil. Uday sits to the west of Qamar. How many persons sit between Qamar and the person who faces Vidya? [Difficult]

(A) One
(B) Two
(C) Three
(D) Four
(E) None of these

42. Aman, Bina, Chirag, Devi and Esha sit in Row 1 facing north, while Farhan, Gita, Hari, Ira and Jai sit in Row 2 facing south. Chirag sits at the extreme east end of Row 1. Bina sits third to the left of Chirag. Ira faces Bina. Hari sits second to the left of Ira. Farhan sits at an extreme end and is not an immediate neighbour of Hari. Gita sits to the west of Jai. Devi faces Gita. Esha is not an immediate neighbour of Devi. If every person of Row 1 now shifts one seat towards the east, the person at the extreme east end moving to the extreme west end, who will then face Hari? [Difficult]

(A) Devi
(B) Aman
(C) Bina
(D) Esha
(E) None of these

2.1.3 Circular arrangement: facing centre / outward / mixed [checked]

43. Eight friends – Anil, Bhavna, Chetan, Divya, Esha, Farhan, Gaurav and Hema – sit around a circular table facing the centre. Chetan sits second to the left of Anil. Bhavna sits exactly between Anil and Chetan. Divya sits third to the right of Gaurav. Esha is an immediate neighbour of both Divya and Farhan. Hema sits to the immediate right of Anil. Who sits third to the right of Esha? [Easy]

(A) Anil
(B) Bhavna
(C) Chetan
(D) Hema
(E) None of these

44. Six account holders – Rahul, Seema, Tarun, Usha, Vikram and Yash – sit around a circular table and all of them face outward, i.e. away from the centre. Tarun sits second to the right of Rahul. Usha sits to the immediate left of Vikram. Yash sits to the immediate left of Rahul. Seema is an immediate neighbour of both Rahul and Tarun. Who sits to the immediate left of Tarun? [Easy]

(A) Rahul
(B) Usha
(C) Seema
(D) Yash
(E) None of these

45. Eight employees of Grameen Bank – Ishan, Jyoti, Kamal, Lata, Manish, Neha, Omkar and Pooja – are seated around a circular table facing the centre. Jyoti sits third to the left of Ishan. Kamal sits exactly opposite Jyoti. Lata sits to the immediate right of Kamal. Manish sits to the immediate left of Ishan. Neha sits exactly opposite Manish. Omkar sits to the immediate right of Neha. Who sits exactly opposite Ishan? [Easy]

(A) Neha
(B) Pooja
(C) Jyoti
(D) Omkar
(E) Lata

46. Seven customers – Ajay, Bindu, Chirag, Deepa, Ekta, Firoz and Girish – sit around a circular table facing the centre. Bindu sits second to the left of Ajay. Chirag sits third to the right of Bindu. Deepa sits to the immediate left of Ajay. Ekta sits to the immediate right of Chirag. Firoz sits second to the left of Bindu. How many persons sit between Firoz and Deepa when counted from the left of Firoz? [Easy]

(A) One
(B) Two
(C) Three
(D) Four
(E) None of these

47. Six members of a chit-fund group – Naveen, Priya, Qadir, Rekha, Sunil and Tanvi – sit around a circular table. Naveen, Qadir and Sunil face the centre, while Priya, Rekha and Tanvi face outward. Priya sits second to the left of Naveen. Qadir sits to the immediate right of Priya. Rekha sits to the immediate left of Naveen. Sunil sits exactly opposite Priya. Who sits second to the right of Tanvi? [Easy]

(A) Qadir
(B) Sunil
(C) Rekha
(D) Naveen
(E) Priya

48. Eight persons – Amit, Babita, Chandan, Dolly, Eshwar, Farida, Gopal and Harsha – sit around a circular table and all of them face outward. Babita sits third to the left of Amit. Chandan sits exactly opposite Amit. Dolly sits second to the right of Chandan. Eshwar sits second to the right of Babita. Farida sits to the immediate right of Amit. Gopal is an immediate neighbour of Chandan. Which of the following pairs represents the two immediate neighbours of Dolly? [Easy]

(A) Babita and Eshwar
(B) Chandan and Babita
(C) Eshwar and Amit
(D) Gopal and Chandan
(E) None of these

49. Five friends – Kiran, Lalit, Meena, Nitin and Ojas – sit around a small circular table facing the centre. Lalit sits second to the left of Kiran. Meena sits to the immediate right of Kiran. Nitin sits to the immediate left of Lalit. Who sits second to the left of Ojas? [Easy]

(A) Kiran
(B) Lalit
(C) Meena
(D) Nitin
(E) None of these

50. Eight officers of Sunrise Bank – Aarti, Bikram, Chhaya, Dhruv, Ekansh, Falguni, Girdhar and Hitesh – sit around a circular table. Chhaya, Ekansh, Falguni and Hitesh face outward, while the remaining four face the centre. Ekansh sits exactly opposite Aarti. Bikram sits to the immediate left of Aarti. Chhaya sits to the immediate left of Bikram. Dhruv sits second to the left of Falguni. Girdhar sits second to the right of Ekansh. Hitesh sits to the immediate right of Aarti. Who sits third to the left of Falguni? [Moderate]

(A) Bikram
(B) Chhaya
(C) Dhruv
(D) Girdhar
(E) None of these

51. Ten depositors – Anup, Bharti, Chandra, Deep, Eshan, Fatima, Gita, Hari, Ira and Jatin – sit around a circular table facing the centre. Bharti sits second to the left of Anup, and Gita sits exactly between Anup and Bharti. Hari sits to the immediate left of Bharti and Chandra sits second to the left of Bharti. Anup sits exactly opposite Ira, Bharti sits exactly opposite Jatin and Chandra sits exactly opposite Fatima. Deep sits third to the right of Fatima and Eshan sits to the immediate right of Fatima. How many persons sit between Hari and Jatin when counted from the left of Hari? [Moderate]

(A) Two
(B) Three
(C) Four
(D) Five
(E) None of these

52. Eight friends – Latika, Mohit, Nandini, Om, Pankaj, Qamar, Ritu and Sameer – sit around a circular table. Exactly three of them face outward and the rest face the centre. Latika, Nandini and Qamar face the centre. Mohit faces the direction opposite to that of Latika, Om faces the same direction as Nandini, Pankaj faces the direction opposite to that of Latika, and Ritu faces the direction opposite to that of Qamar. Pankaj sits exactly opposite Latika. Mohit sits to the immediate left of Latika, Nandini sits second to the left of Latika and Om sits to the immediate left of Nandini. Qamar sits to the immediate right of Pankaj and Ritu sits second to the right of Pankaj. Who sits third to the right of Sameer? [Moderate]

(A) Om
(B) Pankaj
(C) Qamar
(D) Latika
(E) None of these

53. Seven bank employees – Anjali, Bhaskar, Charulata, Devraj, Gauri, Imran and Jaya – sit around a circular table facing the centre, and each of them works in a different bank: SBI, PNB, BOB, Canara, Axis, HDFC and ICICI. Anjali works in SBI and Devraj works in ICICI. Bhaskar sits to the immediate left of Anjali and Charulata sits second to the left of Anjali. Devraj sits to the immediate left of

Charulata. Gauri sits third to the right of Anjali and Jaya sits second to the left of Gauri. The one who works in Axis sits to the immediate left of the one who works in SBI. The one who works in HDFC sits to the immediate left of Gauri, and the one who works in BOB sits to the immediate right of the one who works in HDFC. Jaya does not work in PNB. The person sitting third to the left of Imran works in which bank? [Moderate]

(A) SBI
(B) PNB
(C) Axis
(D) Canara
(E) ICICI

54. Seven villagers – Kavita, Lokesh, Mahesh, Nutan, Pravin, Rashmi and Suresh – sit around a circular table and all of them face outward. Mahesh sits third to the left of Rashmi. Nutan sits to the immediate right of Mahesh. Kavita sits to the immediate right of Suresh and Lokesh sits to the immediate right of Kavita. Pravin is an immediate neighbour of both Nutan and Rashmi. How many persons sit between Kavita and Pravin when counted from the left of Kavita? [Moderate]

(A) One
(B) Two
(C) Three
(D) Four
(E) None of these

55. Eight persons – Bhavesh, Chitra, Devika, Gagan, Harpreet, Ishita, Jagdish and Kamlesh – sit around a circular table. Chitra, Gagan and Jagdish face outward; the remaining five face the centre. Bhavesh sits exactly opposite Harpreet. Chitra sits to the immediate left of Bhavesh and Devika sits to the immediate right of Chitra. Gagan sits to the immediate right of Harpreet, Ishita sits to the immediate left of Harpreet, and Jagdish sits to the immediate left of Ishita. Four of the following five pairs are alike in a certain way based on the seating arrangement and hence form a group. Which one does NOT belong to that group? [Moderate]

(A) Chitra - Bhavesh
(B) Gagan - Devika
(C) Jagdish - Ishita
(D) Harpreet - Gagan
(E) Bhavesh - Kamlesh

56. Nine persons – Neeraj, Omprakash, Pallavi, Qasim, Renu, Sanjay, Tulsi, Umesh and Varsha – sit around a circular table. Pallavi, Renu and Tulsi face outward and the remaining six face the centre. Omprakash sits to the immediate left of Neeraj and Pallavi sits second to the left of Neeraj. Qasim sits to the immediate right of Pallavi. Renu sits fourth to the left of Neeraj. Sanjay sits to the immediate right of Renu and Tulsi sits second to the right of Renu. Varsha sits to the immediate right of Neeraj and Umesh sits to the immediate right of Varsha. Who sits third to the right of Tulsi? [Moderate]

(A) Varsha
(B) Umesh
(C) Neeraj
(D) Omprakash
(E) None of these

57. Eight persons – Ravindra, Sushma, Tejas, Uday, Vaishali, Wasim, Yamini and Zoya – sit around a circular table; some face the centre and some face outward. Ravindra and Tejas face the centre. Vaishali sits exactly opposite Ravindra and faces the same direction as Ravindra. Sushma sits to the immediate left of Ravindra and faces the direction opposite to that of Ravindra. Tejas sits to the immediate right of Sushma, and both immediate neighbours of Tejas face outward. Uday sits to the immediate right of Vaishali. Wasim sits to the immediate left of Vaishali and faces the same direction as Vaishali. Yamini sits second to the left of Vaishali and faces the direction opposite to that of Wasim. Zoya faces the same direction as Ravindra. Who sits third to the left of Yamini? [Difficult]

(A) Wasim
(B) Uday
(C) Zoya
(D) Tejas
(E) None of these

58. Ten members of a co-operative society – Ashwin, Bhagya, Chetna, Dilip, Eshwari, Ganpat, Harish, Indira, Jeevan and Kalpana – sit around a circular table. Bhagya, Eshwari, Harish and Kalpana face outward, while the remaining six face the centre. Ashwin sits exactly opposite Ganpat. Bhagya sits to the immediate left of Ashwin and Kalpana sits to the immediate right of Ashwin. Chetna sits to the immediate right of Bhagya. Dilip sits second to the right of Ganpat and Eshwari sits to the immediate right of Ganpat. Harish sits to the immediate left of Ganpat and Indira sits to the immediate right of Harish. Jeevan sits exactly opposite Dilip. Who sits third to the left of Chetna? [Difficult]

(A) Dilip
(B) Harish
(C) Indira
(D) Eshwari
(E) None of these

59. Seven officers – Bhanu, Chandni, Dinkar, Ela, Faiz, Gopika and Hemal – sit around a circular table, each belonging to a different city: Pune, Jaipur, Kochi, Nagpur, Surat, Indore and Bhopal. Chandni, Faiz and Hemal face outward; the rest face the centre. Bhanu is from Pune and Gopika is from Indore. Chandni sits to the immediate left of Bhanu and Hemal sits to the immediate right of Bhanu. The one from Kochi sits to the immediate right of Chandni. Ela sits to the immediate left of the one from Kochi. The one from Surat sits to the immediate left of Ela. Gopika sits to the immediate right of Faiz. The one from Jaipur sits fourth to the right of Gopika. Hemal is not from Nagpur. The person sitting third to the left of Ela belongs to which city? [Difficult]

(A) Pune
(B) Jaipur
(C) Surat
(D) Bhopal
(E) Indore

60. Eight persons – Anurag, Bhavya, Chaitanya, Damodar, Eesha, Firdaus, Gulab and Hasan – sit around a circular table; some face the centre and some face outward. Anurag faces the centre. Eesha sits exactly opposite Anurag and faces the same direction as Anurag. Bhavya sits to the immediate left of Anurag and does not face the centre. Chaitanya sits to the immediate right of Bhavya and faces the same direction as Bhavya. Damodar sits to the immediate right of Eesha and faces the centre. Firdaus sits to the immediate left of Eesha and faces the direction opposite to that of Eesha. Gulab sits second to the left of Eesha and faces the direction opposite to that of Firdaus. Hasan sits to the immediate right of Anurag and faces the direction opposite to that of Gulab. Which of the following statements is TRUE? [Difficult]

(A) Chaitanya sits second to the left of Damodar.
(B) Gulab sits exactly between Firdaus and Hasan.
(C) Only two persons sit between Bhavya and Damodar.
(D) Anurag faces outward.
(E) Eesha is an immediate neighbour of Gulab.

61. Nine friends – Alka, Bipin, Chetak, Devi, Ehsaan, Fauzia, Gagandeep, Hiren and Ismail – sit around a circular table. Fauzia, Gagandeep, Hiren and Ismail face outward, while the rest face the centre. Fauzia sits to the immediate left of Alka and Chetak sits to the immediate right of Fauzia. Hiren sits to the immediate left of Chetak. Devi sits fourth to the left of Alka and Ismail sits to the immediate left of Devi. Bipin sits third to the right of Alka, Gagandeep sits to the immediate left of Bipin and Ehsaan sits to the immediate right of Gagandeep. If all nine are now made to sit in alphabetical order in the clockwise direction starting from Alka, who retains her original seat, how many of them, excluding Alka, remain in the same position as before? [Difficult]

(A) None
(B) One
(C) Two
(D) Three
(E) Four

62. Eight employees – Ankit, Bijoy, Chhavi, Dipali, Eresh, Farhat, Gitanjali and Harnam – sit around a circular table. Any two persons sitting adjacent to each other face opposite directions, and Ankit faces the centre. Four of them work in the Andheri branch and the other four in the Borivali branch. Ankit sits exactly opposite Eresh. Bijoy sits to the immediate left of Ankit and Chhavi sits to the immediate right of Bijoy. Dipali sits to the immediate left of Chhavi. Farhat sits to the immediate left of Eresh and Gitanjali sits second to the left of Eresh. Ankit and Chhavi work in the Andheri branch, both immediate neighbours of Chhavi work in the Borivali branch, Gitanjali works in the same branch as Eresh, and Farhat does not work in the Borivali branch. The person sitting to the immediate left of Bijoy works in which branch, and who sits second to the right of that person? [Difficult]

(A) Andheri; Gitanjali
(B) Borivali; Gitanjali
(C) Andheri; Harnam
(D) Borivali; Farhat
(E) Andheri; Eresh

63. Eight persons – Prem, Qudsia, Rohit, Sonal, Tanmay, Urvashi, Vishal and Wahida – sit around a circular table. Exactly four of them face outward and no two persons facing outward sit next to each other. Prem faces the centre and sits exactly opposite Tanmay. Qudsia sits second to the left of Sonal. Rohit sits exactly between Qudsia and Sonal. Urvashi sits to the immediate left of Tanmay and Vishal sits second to the left of Tanmay. Wahida sits to the immediate right of Prem. Who sits third to the right of Qudsia? [Difficult]

(A) Rohit
(B) Sonal
(C) Vishal
(D) Wahida
(E) None of these

2.1.4 Square, rectangular, and triangular arrangement [checked]

64. Four employees of a bank branch — Anil, Bhavna, Chetan and Divya — sit at the four corners of a square table, all of them facing the centre. Anil sits second to the left of Bhavna. Chetan sits to the immediate left of Anil. Who sits to the immediate right of Divya? [Easy]

(A) Anil
(B) Bhavna
(C) Chetan
(D) Cannot be determined
(E) None of these

65. Four bank officers — Prakash, Qadir, Rekha and Sunita — sit at the four corners of a square table, all of them facing away from the centre. Rekha sits to the immediate left of Prakash. Sunita sits diagonally opposite Prakash. Who sits to the immediate right of Qadir? [Easy]

(A) Prakash
(B) Rekha
(C) Sunita
(D) Cannot be determined
(E) None of these

66. Six students — Amit, Bina, Chandan, Deepa, Esha and Farhan — sit around a triangular table. Three of them sit at the three corners and the other three sit at the middle of the three sides. All six face the centre. Amit sits at a corner. Bina sits second to the right of Amit. Chandan sits third to the left of Bina. Deepa sits to the immediate right of Amit. Esha is not an immediate neighbour of Chandan. Who sits third to the left of Deepa? [Easy]

(A) Amit
(B) Bina
(C) Chandan
(D) Farhan
(E) Esha

67. Eight employees — Ravi, Sonal, Tarun, Usha, Vikas, Wasim, Yamini and Zoya — sit around a square table. Ravi, Tarun, Vikas and Yamini sit at the four corners and face the centre, while Sonal, Usha, Wasim and Zoya sit at the middle of the four sides and face away from the centre. Ravi sits second to the left of Tarun. Sonal sits between Ravi and Tarun. Usha sits second to the right of Sonal. Vikas sits to the immediate right of Usha. Zoya sits to the immediate right of Yamini. Who sits third to the left of Wasim? [Easy]

(A) Ravi
(B) Vikas
(C) Zoya
(D) Yamini
(E) Usha

68. Six friends — Ajay, Bimal, Charu, Dev, Ekta and Farida — sit around a triangular table. Three of them sit at the three corners and face away from the centre, while the other three sit at the middle of the three sides and face the centre. Ajay sits at a corner. Bimal sits at the middle of a side, to the immediate left of Ajay. Charu sits third to the left of Bimal. Dev sits second to the right of Charu. Ekta is an immediate neighbour of Ajay. Who sits second to the right of Farida? [Easy]

(A) Ajay
(B) Bimal
(C) Charu
(D) Dev
(E) None of these

69. Six managers — Harish, Ishan, Jaya, Kabir, Lata and Manav — sit around a rectangular table with two persons on each of the two longer sides and one person on each of the two shorter sides. All of them face the centre. Harish sits on one of the shorter sides. Ishan sits third to the right of Harish. Jaya sits to the immediate left of Ishan. Kabir sits second to the right of Jaya. Lata is not an immediate neighbour of Kabir. Who among the following sit on the two shorter sides of the table? [Easy]

(A) Harish and Jaya
(B) Harish and Ishan
(C) Kabir and Lata
(D) Manav and Lata
(E) None of these

70. Eight persons — Arun, Bela, Chirag, Disha, Eshan, Falak, Gita and Hemant — sit around a rectangular table with three persons on each of the two longer sides and one person on each of the two shorter sides. All of them face the centre. Arun sits on one of the shorter sides. Bela sits fourth to the left of Arun. Chirag sits second to the right of Bela. Disha sits to the immediate left of Chirag. Eshan sits third to the left of Disha. Gita sits to the immediate right of Arun. Falak is not an immediate neighbour of Eshan. How many persons sit between Chirag and Eshan when counted from the right of Chirag? [Easy]

(A) One
(B) Two
(C) Three
(D) Four
(E) None of these

71. Eight friends — Ankit, Bhoomi, Chirag, Deepak, Esha, Firoz, Garima and Harsh — sit around a square table. Four of them sit at the four corners and face away from the centre, while the other four sit at the middle of the four sides and face the centre. Ankit sits at the middle of a side. Bhoomi sits third

to the left of Ankit. Chirag sits second to the right of Bhoomi. Deepak, who faces the centre, sits to the immediate left of Chirag. Esha sits third to the right of Deepak. Firoz is an immediate neighbour of neither Ankit nor Esha. Garima sits to the immediate left of Firoz. Which of the following pairs of persons sit at diagonally opposite corners of the table? [Moderate]

(A) Ankit and Deepak
(B) Garima and Esha
(C) Esha and Chirag
(D) Garima and Chirag
(E) Bhoomi and Esha

72. Six bank employees — Neha, Om, Pankaj, Qamar, Riya and Suresh — sit around a triangular table. Three of them sit at the three corners and face the centre, while the other three sit at the middle of the three sides and face away from the centre. Each holds a different post: Clerk, PO, Manager, Cashier, Auditor and Officer. Neha sits at a corner and the Manager sits second to her right. Pankaj sits to the immediate left of the Manager. Om, who is the Cashier, sits third to the left of Pankaj. Riya sits at the middle of a side and is an immediate neighbour of neither Neha nor Pankaj. Qamar is the Auditor and sits at the middle of a side. The PO sits second to the right of Riya. Neha is not the Clerk. Who among them is the Clerk? [Moderate]

(A) Neha
(B) Riya
(C) Suresh
(D) Qamar
(E) None of these

73. Eight persons — Amar, Bharti, Chetan, Divya, Eklavya, Fiza, Gopal and Hina — sit around a rectangular table with two persons on each of the four sides. All of them face the centre. Amar sits second to the left of Bharti. Chetan sits to the immediate left of Amar, and Chetan and Amar sit on the same side of the table. Divya sits third to the left of Chetan. Eklavya sits second to the right of Divya. Fiza sits on the same side of the table as Bharti. Hina sits to the immediate left of Eklavya. Who sits on the same side of the table as Gopal? [Moderate]

(A) Divya
(B) Hina
(C) Chetan
(D) Eklavya
(E) Bharti

74. Eight persons — Jyoti, Kunal, Latika, Mohit, Nidhi, Omkar, Payal and Rajat — sit around a square table. Four of them sit at the four corners and face the centre, while the other four sit at the middle of the four sides and face away from the centre. Kunal sits at a corner. Jyoti sits third to the right of Kunal. Latika sits second to the left of Jyoti. Mohit sits second to the left of Latika. Nidhi is an immediate neighbour of Kunal and faces away from the centre. Omkar sits third to the left of Nidhi. Payal is not an immediate neighbour of Mohit. How many persons sit between Rajat and Payal when counted from the left of Rajat? [Moderate]

(A) One
(B) Two
(C) Three
(D) Four
(E) None of these

75. Six persons — Anju, Bikram, Charan, Diya, Eshwar and Fatima — sit around a triangular table, three at the three corners and three at the middle of the three sides, and all of them face the centre. Each belongs to a different city: Delhi, Mumbai, Pune, Jaipur, Kochi and Patna. Anju sits at a corner and the one from Pune sits second to the right of Anju. Bikram sits to the immediate left of the one from Pune. Charan, who is from Jaipur, sits third to the left of Bikram. Diya sits at the middle of a side, is an immediate neighbour of Charan and is not an immediate neighbour of Anju. The one from Delhi sits second to the left of Diya. Eshwar sits at the middle of a side and is not from Mumbai. The one from Patna sits at a corner. Who sits second to the right of the person from Kochi? [Moderate]

(A) Anju
(B) Diya
(C) Bikram
(D) Fatima
(E) Charan

76. Eight persons — Sanjay, Tulsi, Uday, Veena, Wahid, Yash, Zara and Priya — sit around a square table. Four of them sit at the four corners and face away from the centre, while the other four sit at the middle of the four sides and face the centre. Sanjay sits at the middle of a side. Tulsi sits fourth to the right of Sanjay. Uday sits second to the left of Tulsi. Veena sits to the immediate right of Uday. Wahid sits third to the left of Veena. Yash is an immediate neighbour of Sanjay. Zara sits second to the left of Yash. Which of the following statements is TRUE? [Moderate]

(A) Priya sits exactly between Wahid and Tulsi
(B) Zara faces the centre
(C) Uday and Yash are immediate neighbours
(D) Only two persons sit between Sanjay and Wahid
(E) Veena sits third to the left of Sanjay

77. Eight persons — Deepa, Ehsan, Gaurav, Hina, Imran, Jaya, Kiran and Lokesh — sit around a rectangular table with three persons on each of the two longer sides and one person on each of the two shorter sides. Gaurav sits on one of the shorter sides and faces away from the centre; all the others face the centre. Hina sits third to the left of Gaurav. Imran sits second to the right of Hina. Deepa sits to the immediate left of Imran. Jaya sits third to the left of Deepa. Ehsan is an immediate neighbour of Gaurav. Kiran sits to the immediate left of Ehsan. Who sits exactly in the middle of the longer side on which Jaya sits? [Moderate]

(A) Hina
(B) Lokesh
(C) Kiran
(D) Ehsan
(E) None of these

78. Eight persons — Aarti, Bhavesh, Chandni, Dinesh, Ekta, Faizal, Girish and Hema — sit around a square table. Four of them sit at the four corners and face the centre, while the other four sit at the middle of the four sides and face away from the centre. Each works in a different bank: SBI, PNB, BOB, Canara, HDFC, ICICI, Axis and UCO. Aarti sits at a corner and exactly two persons sit between Aarti and Bhavesh when counted from the left of Aarti. The one from SBI sits to the immediate right of Bhavesh. Chandni sits third to the left of the one from SBI. Dinesh, who is from PNB, is an immediate neighbour of Chandni. Ekta sits second to the right of Dinesh. Girish, who is from Canara, is an immediate neighbour of Bhavesh. Faizal is not an immediate neighbour of Aarti. The one from BOB sits second to the right of Girish. Bhavesh is from ICICI, and the one from Axis sits second to the left of Bhavesh. Chandni is not from UCO. Who sits third to the left of the person working in UCO Bank? [Difficult]

(A) Aarti
(B) Bhavesh
(C) Girish
(D) Dinesh
(E) Hema

79. Nine persons — Ashok, Bindu, Chetna, Devang, Esha, Farooq, Gagan, Hitesh and Ira — sit around a triangular table. Three of them sit at the three corners and face the centre, while two persons sit on each of the three sides (six in all) and face away from the centre. Ashok sits at a corner. Bindu sits fourth to the left of Ashok. Chetna sits third to the right of Bindu. Devang sits at a corner and is an immediate neighbour of Chetna. Esha sits second to the left of Devang. Farooq sits third to the left of Esha. Gagan occupies the corner not taken by Ashok or Devang. Hitesh is not an immediate neighbour of Ashok. In four of the following five pairs, the second person sits to the immediate left of the first person. Which pair does NOT follow this pattern? [Difficult]

(A) Ashok, Ira
(B) Gagan, Bindu
(C) Devang, Chetna
(D) Farooq, Gagan
(E) Hitesh, Ira

80. Ten persons — Alok, Bhumi, Chirag, Deepti, Eshan, Farida, Gopal, Hitesh, Indu and Jatin — sit around a rectangular table with four persons on each of the two longer sides and one person on each of the two shorter sides. All of them face the centre. Alok sits on one of the shorter sides. Bhumi sits fifth to the left of Alok. Chirag sits third to the right of Bhumi. Deepti sits to the immediate left of Chirag. Eshan sits fourth to the left of Deepti. Farida sits second to the left of Eshan. Gopal is an immediate neighbour of Alok. Hitesh sits third to the right of Gopal. Indu is not an immediate neighbour of Eshan. If all ten persons are now made to sit in alphabetical order in the clockwise direction, starting from the seat occupied by Alok (Alok keeping his own seat), how many persons other than Alok remain in their original seats? [Difficult]

(A) One
(B) Two
(C) Three
(D) Four
(E) None

81. Eight persons — Manish, Nalini, Om, Pallavi, Qasim, Rina, Sohan and Tanya — sit around a square table. Four of them sit at the four corners and face away from the centre, while the other four sit at the middle of the four sides and face the centre. Each deposited a different amount in a fixed deposit: Rs. 5,000; Rs. 8,000; Rs. 10,000; Rs. 12,000; Rs. 15,000; Rs. 20,000; Rs. 30,000 and Rs. 40,000. Manish sits at the middle of a side and deposited Rs. 30,000. The one who deposited Rs. 12,000 sits third to the left of Manish. Nalini sits second to the right of the one who deposited Rs. 12,000. Om sits to the immediate left of Nalini. Pallavi sits third to the right of Om. Qasim is an immediate neighbour of Manish. Rina sits to the immediate left of Qasim. Sohan deposited Rs. 12,000. The one who deposited Rs. 40,000 sits exactly opposite Manish. Qasim deposited Rs. 15,000. Nalini deposited twice as much as Pallavi and together they deposited Rs. 15,000. Rina deposited more than Tanya. What is the total amount deposited by the four persons sitting at the corners of the table? [Difficult]

(A) Rs. 42,000
(B) Rs. 48,000
(C) Rs. 98,000
(D) Rs. 52,000
(E) None of these

82. Six persons — Rachit, Sunanda, Tejas, Urmila, Vikrant and Yamini — sit around a triangular table. Three of them sit at the three corners and face away from the centre, while the other three sit at the middle of the three sides and face the centre. Rachit sits at a corner. Sunanda sits second to the left of Rachit. Tejas sits to the immediate right of Sunanda. Urmila sits third to the right of Tejas. Vikrant is not an immediate neighbour of Rachit. If Rachit now interchanges his seat with Vikrant and, at the same time, Yamini interchanges her seat with Sunanda, who sits second to the left of Tejas after these interchanges? [Difficult]

(A) Rachit
(B) Vikrant
(C) Sunanda
(D) Urmila
(E) Yamini

83. Eight persons — Bharat, Chhaya, Dinkar, Esha, Firoza, Ganesh, Hemant and Ila — sit around a square table, four at the four corners and four at the middle of the four sides, all facing the centre. Each is of a different age: 24, 27, 30, 33, 36, 39, 42 and 45 years. Bharat sits at a corner. Chhaya sits fourth to the right of Bharat. Dinkar sits second to the left of Chhaya. Esha sits third to the right of Dinkar. Firoza sits to the immediate right of Esha. Ganesh is an immediate neighbour of Bharat.

Hemant sits second to the left of Ganesh. The person sitting exactly opposite Bharat is 45 years old. Dinkar is the youngest of all. Hemant is 42 years old and Firoza is 27 years old. Ila is younger than Esha but older than Ganesh, and Bharat is 36 years old. What is the sum of the ages of the four persons sitting at the middle of the sides? [Difficult]

(A) 132 years
(B) 138 years
(C) 144 years
(D) 150 years
(E) None of these

84. Six persons — Girish, Harini, Ismail, Jhanvi, Kamal and Leela — sit around a triangular table. Three of them sit at the three corners and face the centre, while the other three sit at the middle of the three sides and face away from the centre. Each has taken a car loan of a different amount: Rs. 2 lakh, Rs. 3 lakh, Rs. 4 lakh, Rs. 5 lakh, Rs. 6 lakh and Rs. 7 lakh. Girish sits at the middle of a side, and exactly two persons sit between Girish and Harini when counted from the left of Girish. Ismail sits second to the left of Harini. Jhanvi sits to the immediate right of Ismail. Kamal sits second to the left of Jhanvi. The person who took Rs. 7 lakh sits at a corner, to the immediate left of Girish. Harini took a loan of Rs. 3 lakh. Kamal's loan is Rs. 2 lakh more than Leela's, and Girish's loan is Rs. 1 lakh less than Jhanvi's. Who sits third to the left of the person who took a loan of Rs. 4 lakh? [Difficult]

(A) The one who took Rs. 2 lakh
(B) The one who took Rs. 3 lakh
(C) The one who took Rs. 5 lakh
(D) The one who took Rs. 6 lakh
(E) None of these

2.1.5 Floor and flat puzzles

[checked, 1 flagged]

85. Five bank employees — Amit, Bhavna, Chetan, Divya and Esha — live on five different floors of a building numbered 1 to 5, where floor 1 is the lowermost and floor 5 is the topmost. Amit lives on floor 4. Bhavna lives immediately below Amit. Chetan lives on the topmost floor. Divya lives immediately above Esha. Who lives on floor 2? [Easy]

(A) Amit
(B) Bhavna
(C) Divya
(D) Esha
(E) None of these

86. Six officers live on six different floors of a building numbered 1 to 6, floor 1 being the lowermost. Ravi lives on floor 3. Exactly two persons live between Ravi and Sunita, and Sunita lives above Ravi. On which floor does Sunita live? [Easy]

(A) Floor 4
(B) Floor 5
(C) Floor 6
(D) Floor 2
(E) None of these

87. Seven friends — P, Q, R, S, T, U and V — live on seven different floors numbered 1 to 7 (floor 1 lowermost). P lives on floor 2. Only one person lives between P and Q. R lives immediately above Q. On which floor does R live? [Easy]

(A) Floor 3
(B) Floor 4
(C) Floor 5
(D) Floor 6
(E) None of these

88. In a building of four floors (floor 1 lowermost, floor 4 topmost), each floor has exactly two flats — Flat X on the northern side and Flat Y on the southern side. Naveen lives in Flat Y of floor 3. Meera

lives in the flat immediately above Naveen's flat (same side of the building). In which flat does Meera live? [Easy]

(A) Flat X of floor 4
(B) Flat Y of floor 4
(C) Flat Y of floor 2
(D) Flat X of floor 3
(E) None of these

89. Five colleagues — Gaurav, Harsh, Ila, Jyoti and Kunal — live on five different floors numbered 1 to 5 (floor 1 lowermost). Harsh lives on floor 5. Jyoti lives on floor 4 and immediately above Kunal. Ila lives on an even-numbered floor. Who lives on floor 3? [Easy]

(A) Gaurav
(B) Ila
(C) Kunal
(D) Harsh
(E) None of these

90. Six persons — Anjali, Bhaskar, Chandan, Deepak, Esha and Farhan — live on six different floors numbered 1 to 6 (floor 1 lowermost). Anjali lives on floor 2 and Deepak on floor 5. Farhan lives immediately above Deepak. Chandan lives on the lowermost floor. Bhaskar lives above Esha. Who lives immediately below Bhaskar? [Easy]

(A) Anjali
(B) Chandan
(C) Deepak
(D) Esha
(E) None of these

91. Five persons — Priya, Rekha, Om, Neha and Qadir — live on five different floors numbered 1 to 5 (floor 1 lowermost). Priya lives on the lowermost floor. Rekha lives immediately above Priya. Om lives immediately above Rekha. Neha lives immediately above Om. On which floor does Neha live? [Easy]

(A) Floor 1
(B) Floor 2
(C) Floor 3
(D) Floor 5
(E) None of these

92. Six persons — Sameer, Vikas, Neelam, Rajat, Kiran and Ojas — live on six different floors numbered 1 to 6 (floor 1 lowermost). Exactly two persons live between Sameer and Vikas, and Vikas lives above Sameer. Neelam lives immediately above Vikas. Exactly one person lives between Neelam and Rajat. Sameer does not live on floor 1. Kiran lives below Sameer. Who lives immediately below Rajat? [Moderate]

(A) Kiran
(B) Sameer
(C) Ojas
(D) Vikas
(E) None of these

93. A building has four floors numbered 1 to 4 (floor 1 lowermost) and each floor has two flats — Flat 1 towards the east and Flat 2 towards the west. Eight persons — Aarti, Bipin, Chitra, Dinesh, Ekta, Farid, Gita and Hemant — live in these eight flats, one in each. Aarti lives in Flat 1 of floor 2. Bipin lives in the same flat-column as Aarti, immediately above her. Chitra lives on the same floor as Bipin. Dinesh lives in Flat 2 of the topmost floor. Ekta lives in the same flat-column as Aarti, immediately below her. Farid lives on floor 4. Gita lives in Flat 2 but neither on floor 1 nor on floor 3. Who lives in Flat 2 of floor 1? [Moderate]

(A) Ekta
(B) Gita
(C) Chitra
(D) Hemant
(E) None of these

94. Five tenants — Anil, Bharat, Chirag, Deepa and Esha — live on five different floors numbered 1 to 5 (floor 1 lowermost) and pay different monthly rents of Rs. 5,000; Rs. 7,000; Rs. 9,000; Rs. 11,000 and Rs. 13,000. The tenant on floor 3 pays Rs. 9,000. Anil pays Rs. 13,000 and lives immediately above Bharat, who pays Rs. 9,000. Chirag lives on floor 1 and pays less rent than Deepa. Esha pays the lowest rent. The tenant on the topmost floor pays the lowest rent. What is the total rent paid by the tenants living on floors 1 and 2? [Moderate]

(A) Rs. 16,000
(B) Rs. 18,000
(C) Rs. 20,000
(D) Rs. 22,000
(E) None of these

95. Six bank officers live on six different floors numbered 1 to 6 (floor 1 lowermost) and each works in a different bank — SBI, PNB, BOB, Canara, Union and HDFC. The officer from SBI lives on floor 4. Exactly two persons live between the SBI officer and the PNB officer. The BOB officer lives immediately above the PNB officer. Exactly one person lives between the Union officer and the SBI officer. The Canara officer lives above the HDFC officer. The officer of which bank lives immediately below the SBI officer? [Moderate]

(A) PNB
(B) BOB
(C) Canara
(D) Union
(E) None of these

96. Five persons — Ramesh, Suresh, Tara, Umesh and Vandana — live on five different floors numbered 1 to 5 (floor 1 lowermost). Their ages are 24, 28, 32, 36 and 40 years, not necessarily in that order. The person living on the topmost floor is 32 years old. Tara lives on floor 2 and is 40 years old. Suresh lives immediately above Ramesh. Umesh is 24 years old and lives on an odd-numbered floor. Ramesh is older than Vandana, who lives on the topmost floor. How old is the person living immediately below Vandana? [Moderate]

(A) 24 years
(B) 28 years
(C) 36 years
(D) 40 years
(E) None of these

97. Seven persons — Alok, Bina, Chetna, Devraj, Farah, Girish and Harish — live on seven different floors numbered 1 to 7 (floor 1 lowermost). Alok lives on floor 6. Exactly two persons live between Alok and Bina. Chetna lives immediately above Bina. Devraj lives below Bina but not on floor 1. Farah lives above Girish, and Girish lives on the lowermost floor. Harish does not live on the topmost floor. Who lives immediately above Chetna? [Moderate]

(A) Devraj
(B) Farah
(C) Harish
(D) Bina
(E) None of these

98. Six persons — Ajay, Bimal, Charu, Dolly, Eshan and Faizal — live on six different floors numbered 1 to 6 (floor 1 lowermost). Charu lives on an odd-numbered floor but not on floor 1. Exactly two persons live between Charu and Dolly. Ajay lives immediately above Dolly. Bimal lives on floor 1. Eshan lives above Faizal. Who lives immediately below Charu? [Moderate]

(A) Ajay
(B) Dolly
(C) Faizal
(D) Eshan
(E) None of these

99. Eight persons — Rohit, Sneha, Tarun, Umang, Vidya, Wasim, Yash and Zoya — live on eight different floors numbered 1 to 8 (floor 1 lowermost). Exactly three persons live between Rohit and Sneha. Sneha lives on an even-numbered floor above Rohit. Exactly two persons live between Sneha and Tarun. Umang lives immediately above Tarun. Vidya lives on floor 1. Exactly one person lives between Vidya and Wasim. Yash lives above Zoya. If all the persons are rearranged in alphabetical order from bottom to top (the alphabetically first name on floor 1), how many of them will remain on their original floor? [Difficult]

(A) None
(B) One
(C) Two
(D) Three
(E) Four

100. A building has four floors numbered 1 to 4 (floor 1 lowermost), each floor having two flats — Flat A on the western side and Flat B on the eastern side. Eight persons — Ankur, Bhavesh, Chhaya, Dhruv, Esha, Firoz, Garima and Harsh — occupy one flat each. Ankur lives in Flat B of floor 1. Bhavesh lives in the same vertical column as Ankur, two floors above him. Chhaya lives in Flat A of the floor immediately above Bhavesh's floor. Dhruv and Esha live on the same floor, with Dhruv in Flat A. Firoz lives in Flat B. Garima lives in the flat immediately below Dhruv's flat. Four of the following five pairs live on the same floor and hence form a group. Which one does NOT belong to that group? [Difficult]

(A) Chhaya — Firoz
(B) Harsh — Bhavesh
(C) Dhruv — Esha
(D) Garima — Ankur
(E) Chhaya — Harsh

101. Six persons — Ishaan, Jaya, Kamal, Lata, Mohan and Nisha — live in an eight-floor building numbered 1 to 8 (floor 1 lowermost); the remaining two floors are vacant. Exactly one floor lies between the two vacant floors. The lowermost floor is vacant. Ishaan lives on floor 2. Exactly two persons live between Ishaan and Jaya. Kamal lives immediately above Jaya. Lata lives on the topmost floor. Mohan lives below Nisha. How many persons live between Ishaan and Nisha? [Difficult]

(A) One
(B) Two
(C) Three
(D) None
(E) More than three

102. Seven employees — Gopal, Hitesh, Ishita, Jatin, Komal, Lalit and Meena — live on seven different floors numbered 1 to 7 (floor 1 lowermost) and draw different monthly salaries of Rs. 20,000; Rs. 25,000; Rs. 30,000; Rs. 35,000; Rs. 40,000; Rs. 45,000 and Rs. 50,000. The person on floor 4 earns Rs. 35,000. Gopal earns Rs. 50,000 and lives on an odd-numbered floor above floor 4. Exactly two persons live between Gopal and Hitesh, who earns Rs. 20,000. Ishita lives immediately above Hitesh and earns Rs. 30,000. Jatin lives on floor 1 and earns more than the person on floor 6. The salaries of the persons on floors 1 and 7 add up to Rs. 70,000. Komal lives immediately above Gopal, and Lalit earns less than Meena. What is the difference between the salaries of the persons living on the topmost and the lowermost floors? [Difficult]

(A) Rs. 15,000
(B) Rs. 20,000
(C) Rs. 25,000
(D) Rs. 30,000
(E) None of these

103. Eight persons — Ahmed, Beena, Chirag, Damini, Eknath, Fatima, Ganesh and Hina — live on eight different floors numbered 1 to 8 (floor 1 lowermost). Ahmed lives on floor 3. Exactly three persons live between Ahmed and Beena. Chirag lives immediately below Beena. Damini lives on an even-numbered floor below Ahmed. Exactly one person lives between Damini and Eknath. Fatima lives above Ganesh and on the topmost floor. Hina does not live on the lowermost floor. Four of the following five pairs are alike in a certain way based on the arrangement and hence form a group. Which one does NOT belong to that group? [Difficult]

(A) Damini — Ahmed
(B) Ahmed — Eknath
(C) Hina — Chirag
(D) Chirag — Beena
(E) Ganesh — Ahmed

104. Six persons — Rakesh, Sunil, Tina, Uma, Vikas and Wasim — live on six different floors numbered 1 to 6 (floor 1 lowermost) and each has bought a laptop costing Rs. 30,000; Rs. 35,000; Rs. 40,000; Rs. 45,000; Rs. 50,000 or Rs. 55,000, all different. The person on the lowermost floor bought the costliest laptop. Rakesh lives immediately above the person whose laptop costs Rs. 40,000. Exactly two persons live between Rakesh and Sunil, and Sunil, who bought the laptop costing Rs. 35,000, lives above Rakesh. Tina lives on floor 4 and did not buy the cheapest laptop. The person on floor 3 bought a laptop costing Rs. 45,000. Uma lives immediately below Vikas. What is the total cost of the laptops bought by the persons living on floors 2 and 5? [Difficult]

(A) Rs. 65,000
(B) Rs. 70,000
(C) Rs. 75,000
(D) Rs. 85,000
(E) None of these

105. Nine persons — Bharti, Chetan, Dinesh, Ehsaan, Falguni, Gaurav, Harleen, Imran and Jaideep — live on nine different floors numbered 1 to 9 (floor 1 lowermost). Bharti lives on floor 4. Exactly three persons live between Bharti and Chetan. Dinesh lives immediately below Chetan. Exactly one person lives between Dinesh and Ehsaan. Falguni lives on the lowermost floor. Exactly one person lives between Falguni and Gaurav. Harleen lives immediately below Gaurav. Imran lives above Ehsaan, and Jaideep lives on the topmost floor. If everyone now shifts such that the person on floor 1 moves to floor 9, the person on floor 2 moves to floor 8, and so on (the order is completely reversed), who will then live on floor 6? [Difficult]

(A) Gaurav
(B) Bharti
(C) Ehsaan
(D) Harleen
(E) None of these

2.1.6 Box / stack puzzles [checked, 3 flagged]

106. Five boxes A, B, C, D and E containing loan files are placed one above the other (the lowest box is numbered 1 and the highest box is numbered 5). Box C is placed at the top. Two boxes are placed between C and A. Box B is placed immediately above box D. Which box is placed at the bottom? [Easy]

(A) Box A
(B) Box B
(C) Box D
(D) Box E
(E) None of these

107. Six boxes P, Q, R, S, T and V are kept one above the other in a strong room (bottom = 1, top = 6). Only two boxes are placed above P. R is placed immediately below P. S is placed at the bottom. Q is placed immediately above P. V is not placed at the top. Which box is placed at the top? [Easy]

(A) Box P
(B) Box Q
(C) Box R
(D) Box T
(E) None of these

108. Five sealed cash boxes J, K, L, M and N are placed one above the other (bottom = 1, top = 5). Box M is placed at the top. Only one box is placed between M and K. Box K is immediately above box N. Box J is not placed at the bottom. Which box is placed at the bottom? [Easy]

(A) Box J
(B) Box K
(C) Box L
(D) Box N
(E) None of these

109. Seven boxes A, B, C, D, E, F and G are stacked one above the other (bottom = 1, top = 7). Box D is placed at position 3 from the bottom. Three boxes are placed between D and F, and F is above D. Box G is at the bottom. Box A is immediately above D. Box E is immediately below F. Box B is placed above box C. How many boxes are placed between B and F? [Easy]

(A) One
(B) Two
(C) Three
(D) Four
(E) None of these

110. Six parcel boxes P, S, T, U, V and W are placed one above the other (bottom = 1, top = 6). Box T is immediately above box P. Box P is immediately above box S. Box S is placed at position 2 from the bottom. Box W is at the top and box U is at the bottom. Which box is placed immediately below W? [Easy]

(A) Box T
(B) Box V
(C) Box P
(D) Box U
(E) None of these

111. Five boxes of different colours – red, blue, green, black and white – are stacked one above the other (bottom = 1, top = 5). The green box is immediately above the red box. The red box is at the bottom. Two boxes are placed between the green box and the white box. The blue box is immediately below the white box. Which box is placed exactly in the middle of the stack? [Easy]

(A) Blue box
(B) Black box
(C) Green box
(D) White box
(E) None of these

112. Seven boxes A, B, C, D, E, F and G are placed one above the other (bottom = 1, top = 7). Four boxes are placed between A and B, and A is placed below B. Box C is at the top. Box D is immediately above A. Box E is immediately below B. Box F is immediately above D. How many boxes are placed below box G? [Easy]

(A) Two
(B) Three
(C) Four
(D) Five
(E) None of these

113. Seven boxes P, Q, R, S, T, U and V are placed one above the other (bottom = 1, top = 7). Only three boxes are placed between P and Q, and Q is above P. Box S is immediately above Q. Two boxes are placed between S and T. Box R is at the bottom. Box U is placed above box V. Which box is placed immediately below box U? [Moderate]

(A) Box T
(B) Box V
(C) Box Q
(D) Box P
(E) None of these

114. Seven boxes A, B, C, D, E, F and G are placed one above the other (bottom = 1, top = 7). Only two boxes are placed between G and C, and C is placed above G. Box A is immediately below box G. Box D is at the top. Three boxes are placed between D and B. Box E is immediately above box C. Which box is placed immediately above box F? [Moderate]

(A) Box A
(B) Box B
(C) Box C
(D) Box E
(E) None of these

115. Eight boxes A, B, C, D, E, F, G and H are placed one above the other (bottom = 1, top = 8). Three boxes are placed between A and B, and A is below B. Box C is immediately above B. Only two boxes are placed above C. Box D is immediately above C. Box F is at the top. Box H is immediately above box A. Box E is immediately above box G. How many boxes are placed between H and D? [Moderate]

(A) Two
(B) Three
(C) Four
(D) Five
(E) None of these

116. Five boxes are placed one above the other in a bank vault (bottom = 1, top = 5). They contain Rs. 1,000, Rs. 2,000, Rs. 5,000, Rs. 10,000 and Rs. 20,000, not necessarily in that order. The box containing Rs. 20,000 is at the top. The box containing Rs. 5,000 is immediately below the box containing Rs. 1,000. The box containing Rs. 2,000 is at the bottom. Two boxes are placed between the box containing Rs. 10,000 and the box containing Rs. 2,000. What is the total amount in the boxes placed immediately above and immediately below the box containing Rs. 5,000? [Moderate]

(A) Rs. 3,000
(B) Rs. 6,000
(C) Rs. 11,000
(D) Rs. 7,000
(E) None of these

117. Seven boxes A, B, C, D, E, F and G are placed one above the other (bottom = 1, top = 7). Box C is at the bottom. Three boxes are placed between C and D. Box F is immediately above D. Box A is at the top. Box B is immediately above box E. Box G is immediately above box C. If all the boxes are now rearranged from bottom to top in alphabetical order, how many boxes remain at the position they originally occupied? [Moderate]

(A) None
(B) One
(C) Two
(D) Three
(E) More than three

118. Eight boxes A, B, C, D, E, F, G and H are placed one above the other (bottom = 1, top = 8). Only one box is placed between H and D, and H is above D. Box D is placed at position 4 from the bottom. Box E is immediately above H. Three boxes are placed between E and A. Box B is at the bottom and box F is at the top. Box C is placed above box G. Which of the following statements is TRUE? [Moderate]

(A) Box D is placed at the top of the stack.
(B) Only one box is placed between box A and box C.
(C) Box H is placed immediately above box E.
(D) Box B is placed immediately above box G.
(E) None of these

119. Seven boxes A, B, C, D, E, F and G are placed one above the other (bottom = 1, top = 7). Box F is placed immediately above box A. Two boxes are placed between box F and box C, and C is placed above F. Box B is placed at the bottom. Box G is placed immediately above box C. Box D is placed immediately above box E. How many boxes are placed between box A and box D? [Moderate]

(A) One
(B) Two
(C) Three
(D) Four
(E) None of these

120. Seven boxes P, Q, R, S, T, U and W are placed one above the other (bottom = 1, top = 7) and contain Rs. 500, Rs. 1,000, Rs. 1,500, Rs. 2,000, Rs. 2,500, Rs. 3,000 and Rs. 3,500, all different. Box S is at the bottom. Only two boxes are placed between S and the box containing Rs. 2,000. Box T is immediately above the box containing Rs. 2,000. Only two boxes are placed between T and W. The box containing Rs. 3,500 is immediately above W. The box containing Rs. 500 is immediately above T. Box R contains Rs. 2,000, box Q contains Rs. 3,500 and box T contains Rs. 3,000. Box P is at the top. The amount in W is Rs. 1,000 more than the amount in S. What is the total amount contained in the bottom-most and the top-most boxes taken together? [Difficult]

(A) Rs. 2,500
(B) Rs. 3,500
(C) Rs. 4,000
(D) Rs. 2,000
(E) None of these

121. Seven courier boxes L, M, N, O, P, Q and R are placed one above the other (bottom = 1, top = 7) and each is dispatched on a different day of the same week, from Monday to Sunday. Box N is at the top and is dispatched on Wednesday. Three boxes are placed between N and the box dispatched on Monday. Box M is immediately above the box dispatched on Monday. Only two boxes are placed between M and L. Box L is dispatched on Friday. Box O is immediately above the box dispatched on Friday. The box dispatched on Sunday is immediately below N. Box P is dispatched on Sunday and box Q is immediately below P. Box M is dispatched on Thursday. The box dispatched on Saturday is immediately above M. How many boxes are placed between the box dispatched on Tuesday and the box dispatched on Sunday? [Difficult]

(A) Two
(B) Three
(C) Four
(D) Five
(E) None of these

122. Six boxes A, B, C, D, E and F of different weights are placed one above the other (bottom = 1, top = 6). Box A is at the bottom. Only two boxes are placed between A and B. Box C is immediately above B. Box D is at the top. Box E is immediately above box A. As regards weights: box B is heavier than box D but lighter than box E; box F is the lightest; box A is heavier than box C; and box C is heavier than box E. Which box is placed immediately above the heaviest box? [Difficult]

(A) Box B
(B) Box C
(C) Box E
(D) Box F
(E) None of these

123. Nine boxes A, B, C, D, E, F, G, H and I are placed one above the other (bottom = 1, top = 9). Four boxes are placed between A and B, and B is above A. Only two boxes are placed between B and C, and C is above B. Box D is immediately below C. Three boxes are placed between D and E. Box F is immediately above E. Box G is immediately above A. Box H is placed above box F. If box E is now taken out and placed at the top of the stack, all the boxes lying above its original position sliding one place down, then how many boxes will be placed between box E and box B? [Difficult]

(A) One
(B) Two
(C) Three
(D) Four
(E) None of these

124. Eight cartons P, Q, R, S, T, U, V and W are placed one above the other (bottom = 1, top = 8). Only three cartons are placed between P and Q, and Q is placed above P. Carton R is immediately above Q. Only one carton is placed between R and S. Carton T is at the bottom. Two cartons are placed between T and U. Carton W is immediately above carton T. If carton V is now taken out and placed at the top of the stack, all the cartons lying above its original position sliding one place down, then which carton will be placed immediately below carton S? [Difficult]

(A) Carton U
(B) Carton P
(C) Carton Q
(D) Carton W
(E) None of these

125. Eight boxes A, B, C, D, E, F, G and H are placed one above the other (bottom = 1, top = 8) and each is dispatched to a different city – Delhi, Mumbai, Patna, Kochi, Surat, Indore, Jaipur and Nagpur. Box C is placed at position 3 from the top. Two boxes are placed between C and the box sent to Patna. Box A is immediately above the Patna box. The box sent to Delhi is at the bottom. Three boxes are placed between the Delhi box and box E. Box G is at the top and the box sent to Kochi is immediately below G. Box B is immediately above box D. Box H is sent to Kochi and box F is not placed at the bottom. Box G is sent to Jaipur, the box sent to Surat is immediately above box A, the box sent to Indore is immediately below the box sent to Kochi, and box B is not sent to Mumbai. Which of the following combinations is correct? [Difficult]

(A) Box A – Surat
(B) Box B – Indore
(C) Box E – Mumbai
(D) Box C – Indore
(E) Box F – Nagpur

126. Eight boxes A, B, C, D, E, F, G and H are placed one above the other (bottom = 1, top = 8). Only two boxes are placed above box D. Box H is immediately below box D. Three boxes are placed between H and A. Box B is at the top. Box C is immediately above box F. Box E is immediately below box B. Box G is not placed immediately above box A. If box A is now interchanged with box F, and box C is interchanged with box H, then which box will be placed immediately below box D? [Difficult]

(A) Box H
(B) Box C
(C) Box A
(D) Box F
(E) None of these

2.1.7 Scheduling puzzles: day, date, month, year [checked, 2 flagged]

127. Rohan deposited an outstation cheque of Rs. 45,000 at his bank branch on Monday, the 12th of a certain month. The bank informed him that the amount would be credited on the 9th day after the day of deposit. On which day and date will the amount be credited to his account? [Easy]

(A) Tuesday, 20th
(B) Thursday, 21st
(C) Wednesday, 20th
(D) Monday, 19th
(E) Wednesday, 21st

128. A bank branch runs a special deposit drive throughout a month that has 31 days and begins on a Friday. On how many Sundays will the branch remain closed during that month? [Easy]

(A) Three
(B) Four
(C) Five
(D) Six
(E) None of these

129. Five officers – Anil, Bhavna, Chetan, Divya and Esha – visit the regional office on five different days of the same week, from Monday to Friday, one officer per day. Chetan visits on Wednesday. Anil visits immediately before Bhavna. Divya visits on Friday. Who visits the regional office on Thursday? [Easy]

(A) Esha
(B) Anil
(C) Bhavna
(D) Divya
(E) Cannot be determined

130. Meera's home-loan EMI was debited on Tuesday, 28 February 2023. The bank informed her that the next EMI would be debited exactly 30 days later. What will be the date and the day of the next debit? [Easy]

(A) 30 March 2023, Thursday
(B) 29 March 2023, Wednesday
(C) 30 March 2023, Wednesday
(D) 28 March 2023, Tuesday
(E) 31 March 2023, Friday

131. At a bank branch a clerk remarks on a certain day, "The day before yesterday was Thursday." The branch's monthly staff meeting is scheduled for the day after tomorrow. On which day of the week will the staff meeting be held? [Easy]

(A) Sunday
(B) Tuesday
(C) Wednesday
(D) Saturday
(E) None of these

132. The quarterly performance review at a bank branch is always held on the second Wednesday of the month. Given that 1 September 2024 was a Sunday, on which date was the review held in September 2024? [Easy]

(A) 8th
(B) 11th
(C) 12th
(D) 14th
(E) 18th

133. In a certain month the 25th falls on a Saturday. On which day of the week does the 4th of the same month fall? [Easy]

(A) Friday
(B) Sunday
(C) Thursday
(D) Saturday
(E) Monday

134. A public sector bank has declared 15 August 2025 a holiday for all its branches. On which day of the week does this date fall? [Moderate]

(A) Thursday
(B) Saturday
(C) Sunday
(D) Wednesday
(E) Friday

135. Six officers – Ankit, Bhavesh, Chitra, Deepak, Esha and Farhan – attend a compliance training on six different days of the same week, from Monday to Saturday, one officer per day. Ankit attends on Thursday. Exactly two officers attend on the days lying between Ankit's day and Chitra's day. Bhavesh attends immediately after Chitra. Deepak attends on the last day of the schedule. Farhan attends before Esha. How many officers attend the training on the days strictly between Bhavesh's day and Esha's day? [Moderate]

(A) One
(B) Two
(C) Three
(D) Four
(E) None

136. Five friends – Ramesh, Sunita, Kavita, Meena and Anil – were born in five different months of the same year, namely January, March, June, September and December. Ramesh was born in a month having 30 days. When the five months are arranged in chronological order, Sunita was born in the month immediately after Ramesh's month. Kavita was born in January. Anil was born in the last of these five months. Who was born in March? [Moderate]

(A) Meena
(B) Ramesh
(C) Sunita
(D) Anil
(E) Cannot be determined

137. Four employees – Nitin, Pooja, Rakesh and Swati – have their annual performance reviews on the 14th and the 27th of March and June of the same year, one employee per slot. Rakesh's review is in the month having 31 days. Nitin's review is scheduled before Rakesh's. Pooja's review is on the 27th of a month. Swati's review is not on the 27th. Whose review is scheduled on 14 June? [Moderate]

(A) Nitin
(B) Pooja
(C) Rakesh
(D) Swati
(E) None of these

138. A bank printed a wall calendar for the year 2020 and wishes to reuse the identical printed calendar in a later year without any change. In which of the following years can it be reused? [Moderate]

(A) 2024
(B) 2028
(C) 2046
(D) 2048
(E) None of these

139. A bank branch remains closed on all Sundays and also on the second and the fourth Saturday of every month. Given that 1 April 2025 was a Tuesday, on how many days was the branch open for business during April 2025? [Moderate]

(A) 22
(B) 23
(C) 24
(D) 25
(E) 26

140. Three colleagues are discussing the date in July on which the branch manager's farewell function will be held. Vikas says it is after the 14th but before the 18th. Neha says it is after the 15th but before the 19th. Sameer says it is after the 16th but before the 20th. All three statements are correct. On which date is the function held? [Moderate]

(A) 16
(B) 17
(C) 18
(D) 19
(E) Cannot be determined

141. Seven customers – Aarti, Bipin, Chirag, Divya, Farid, Gaurav and Harsh – receive their loan disbursements on seven different days of the same week, from Monday to Sunday, one per day. Exactly three disbursements take place on the days lying between Aarti's day and Bipin's day, and Aarti receives hers earlier than Bipin. Chirag receives his immediately after Bipin. Divya receives hers on Monday. Exactly two disbursements take place on the days lying between Divya's day and Farid's day. Gaurav receives his before Harsh. On which day does Farid receive his disbursement? [Difficult]

(A) Wednesday
(B) Thursday
(C) Friday
(D) Saturday
(E) Sunday

142. Eight persons – Anand, Bhakti, Chetan, Dimple, Eshwar, Firoz, Geeta and Hema – attend investor seminars on the 11th and the 24th of four months of the same year: January, March, August and November. Exactly two persons attend in each month, one on each of the two dates. Hema attends on the 11th of January. Eshwar attends on the 11th of the month that has 30 days. Chetan and Dimple attend in the same month, Chetan on the earlier of the two dates. Exactly three persons attend between Bhakti's seminar and Anand's seminar, Bhakti attending earlier. Geeta attends on the 24th of the last of these four months, and Firoz attends before Geeta. Who attends the seminar on 11 August? [Difficult]

(A) Anand
(B) Chetan
(C) Dimple
(D) Firoz
(E) None of these

143. A bank credits a performance bonus to all its employees on the 200th day of the year 2024, counting 1 January as the first day. Given that 1 January 2024 was a Monday, on which date and day of the week is the bonus credited? [Difficult]

(A) 18 July 2024, Thursday
(B) 19 July 2024, Friday
(C) 18 July 2024, Wednesday
(D) 17 July 2024, Wednesday
(E) 19 July 2024, Thursday

144. A mutual fund scheme was launched on Monday, 1 January 2024. Its first portfolio review was held on the launch date itself, and every subsequent review is held exactly 45 days after the previous one. On which day and date will the fifth review be held? [Difficult]

(A) Friday, 28 June 2024
(B) Sunday, 30 June 2024
(C) Saturday, 30 June 2024
(D) Monday, 1 July 2024
(E) Saturday, 29 June 2024

145. In a certain month of 31 days, the 1st falls on a Saturday. A bank branch has scheduled internal audit meetings on the 3rd, 9th, 14th, 22nd and 28th of that month. The branch remains closed on all Sundays and on the second and the fourth Saturday of the month, and any meeting falling on a closed day is shifted to the next working day. On which date does the meeting originally scheduled for the 22nd actually take place? [Difficult]

(A) 23rd
(B) 24th
(C) 25th
(D) 22nd
(E) None of these

146. Five persons – Ajay, Bina, Chandan, Deepa and Elango – opened fixed deposits in five different years, namely 2012, 2015, 2017, 2020 and 2023, and each chose a different month among February, April, July, September and December. Ajay opened his deposit in 2017. Chandan opened his in a leap year. The person who opened in 2012 chose April. The person who chose July opened the deposit in the year that comes immediately after Chandan's year among these five years. Bina chose December and opened her deposit in a year earlier than Chandan's. Ajay's month has 30 days. Deepa opened hers before Elango. In which year did Deepa open her fixed deposit? [Difficult]

(A) 2012
(B) 2015
(C) 2017
(D) 2020
(E) 2023

147. A bank's internal audit window runs from 10 March 2024 to 25 June 2024, both days included. The branch remains closed on all Sundays and on the second and the fourth Saturday of every month, and is open on every other day. Given that 10 March 2024 was a Sunday, on how many days of this window was the branch open for business? [Difficult]

(A) 83
(B) 84
(C) 85
(D) 86
(E) 87

2.1.8 Category / comparison puzzles [checked, 2 flagged]

148. Five bank employees — Anil, Bimal, Chetan, Deepak and Eshwar — are of different heights. Anil is taller than Bimal but shorter than Chetan. Deepak is taller than Chetan but shorter than Eshwar.
Who among them is the tallest? [Easy]

(A) Anil
(B) Chetan
(C) Deepak
(D) Eshwar
(E) None of these

149. Five officers — P, Q, R, S and T — draw different monthly salaries. P earns more than Q but less than R. S earns more than T but less than Q.
Who among them earns the least? [Easy]

(A) P
(B) Q
(C) R
(D) S
(E) T

150. Six parcels — A, B, C, D, E and F — have different weights. A is heavier than C but lighter than D. B is heavier than D. E is lighter than C but heavier than F.
Which parcel is the third heaviest? [Easy]

(A) A
(B) C
(C) D
(D) E
(E) None of these

151. Five friends — Kavita, Sunita, Meena, Deepa and Neha — are of different ages. Sunita is older than Meena but younger than Kavita. Only one person is older than Kavita. Deepa is the youngest.
Who is the second youngest among them? [Easy]

(A) Sunita
(B) Meena
(C) Kavita
(D) Deepa
(E) None of these

152. Five cartons — P, Q, R, S and T — are stacked one above another. Carton P is kept above Q but below R. S is kept above R. T is kept below Q.
How many cartons are kept between R and T? [Easy]

(A) One
(B) Two
(C) Three
(D) Four
(E) None of these

153. Five customers — P, Q, R, S and T — deposited different amounts in a bank. Q deposited more than S and more than T, but less than P. P deposited less than R.
Who deposited the highest amount? [Easy]

(A) P
(B) Q
(C) R
(D) S
(E) Cannot be determined

154. Five persons draw different monthly salaries. Rahul earns more than Nita, Nita earns more than Sameer, Preeti earns more than Rahul, and Sameer earns more than Deepti. Sameer's salary is Rs. 25,000 and Rahul's salary is Rs. 40,000.
Which of the following can be Nita's monthly salary? [Easy]

(A) Rs. 22,000
(B) Rs. 24,500
(C) Rs. 32,000
(D) Rs. 41,000
(E) Rs. 45,000

155. Seven cartons — A, B, C, D, E, F and G — are placed one above another. Carton A is at the bottom. Three cartons are placed between A and B. Carton C is placed immediately above B, and carton D immediately below B. Only one carton is placed between D and E. Carton F is placed somewhere above carton G.
How many cartons are placed between G and C? [Moderate]

(A) One
(B) Two
(C) Three
(D) Four
(E) None of these

156. Six persons — A, B, C, D, E and F — are of different heights. C is taller than only two of them. F is shorter than only A. B is taller than D but shorter than C. E is not the shortest.
Who is the third tallest among them? [Moderate]

(A) B
(B) C
(C) D
(D) E
(E) F

157. Five parcels — A, B, C, D and E — have different weights. Parcel D is heavier than only two parcels. B is heavier than D but lighter than E. Parcel A is the lightest. Parcel B weighs 72 kg and parcel C weighs 61 kg.
Which of the following can be the weight of parcel D? [Moderate]

(A) 58 kg
(B) 60 kg
(C) 68 kg
(D) 74 kg
(E) 76 kg

158. Six employees — Aarti, Bhaskar, Chirag, Divya, Esha and Farhan — work in three departments, namely Loans, Audit and Marketing, with exactly two employees in each department. Chirag works in Audit along with Divya. Esha does not work in Marketing. Bhaskar works in Marketing. Aarti works in the same department as Bhaskar.
Who among the following work in the Loans department? [Moderate]

(A) Aarti and Bhaskar
(B) Chirag and Divya
(C) Esha and Farhan
(D) Bhaskar and Esha
(E) None of these

159. Six persons — A, B, C, D, E and F — are of different heights. A is taller than B, and B is taller than C. D is taller than E, and E is taller than F. A is taller than D.
Who among them is the shortest? [Moderate]

(A) C
(B) F
(C) E
(D) B
(E) Cannot be determined

160. Six students — A, B, C, D, E and F — scored different marks in an examination. D scored more than only one student. F scored more than A but less than C. C did not score the highest. E scored more than C. B scored less than A.
How many students scored more than A? [Moderate]

(A) One
(B) Two
(C) Three
(D) Four
(E) None of these

161. Five customers deposited different amounts in a bank. Rohit deposited more than Nikhil but less than Pooja. Sanjay deposited more than Pooja. Vimal deposited less than Nikhil. The customer who deposited the second lowest amount deposited Rs. 35,000.
Which of the following can be the amount deposited by Rohit? [Moderate]

(A) Rs. 28,000
(B) Rs. 33,500
(C) Rs. 34,000
(D) Rs. 42,000
(E) Rs. 35,000

162. Eight persons — A, B, C, D, E, F, G and H — are of different heights. Only one person is taller than G. E is taller than G. B is shorter than exactly two persons. F is taller than C but shorter than B. C is shorter than exactly four persons. H is taller than D. A is the shortest.
How many persons are taller than C but shorter than G? [Difficult]

(A) One
(B) Two
(C) Three
(D) Four
(E) None of these

163. Eight employees — P, Q, R, S, T, U, V and W — work in four branches, namely Andheri, Borivali, Colaba and Dadar, with exactly two employees in each branch. R works in Borivali along with T. Q and V work in the same branch, which is neither Andheri nor Borivali. P works in Andheri. S works in Colaba. U does not work in the same branch as P.
Who among the following work in the Colaba branch? [Difficult]

(A) S and W
(B) S and U
(C) P and W
(D) Q and V
(E) None of these

164. Five bank officers — Amit, Bina, Chetan, Divya and Farah — differ in both age and monthly salary. Regarding age: Amit is older than Bina but younger than Divya, Chetan is the oldest, and Farah is younger than Bina. Regarding salary: Bina earns more than Divya but less than Farah, Amit earns more than Farah, and Chetan earns the least.
The officer who is the second oldest occupies which position when all five are arranged from the highest salary to the lowest? [Difficult]

(A) Second
(B) Third
(C) Fourth
(D) Fifth
(E) None of these

165. Six boxes — A, B, C, D, E and F — have different weights. Box A is heavier than both B and C. Box D is heavier than A but lighter than E. Box F is heavier than E. The third heaviest box weighs 34 kg and the heaviest box weighs 48 kg.
Which of the following can be the weight of box A? [Difficult]

(A) 35 kg
(B) 34 kg
(C) 36 kg
(D) 31 kg
(E) 40 kg

166. Seven boxes — A, B, C, D, E, F and G — contain different numbers of pens. Box C contains more pens than exactly four boxes. Only one box contains more pens than D. Box G contains more pens than B but fewer than D. Box E contains the fewest pens. Box F contains more pens than A, and box A contains more pens than G. Box C contains 34 pens and box A contains 28 pens.
Which of the following can be the number of pens in box G? [Difficult]

(A) 30
(B) 29
(C) 26
(D) 33
(E) 35

167. Seven friends — A, B, C, D, E, F and G — bought sarees at seven different prices. C's saree is costlier than only three of them. G's saree is costlier than E's but cheaper than B's. D's saree is the cheapest. Only two sarees are cheaper than E's. A's saree is costlier than B's. F's saree is not the costliest.
Who bought the second cheapest saree? [Difficult]

(A) C
(B) E
(C) F
(D) G
(E) None of these

168. Six customers — P, Q, R, S, T and U — hold different balances in their accounts. Only two customers have more money than S. P has more money than S. R has the least money. T has more money than U, and U has more money than R. Q has more money than U but Q does not have the highest balance. T has more money than P. The customer holding the second lowest balance has Rs. 42,000.
Which of the following can be the balance held by S? [Difficult]

(A) Rs. 38,000
(B) Rs. 40,500
(C) Rs. 42,000
(D) Rs. 55,000
(E) Cannot be determined

2.1.9 Uncertain (variable-count) puzzles [checked, 2 flagged]

169. A certain number of employees of Vidya Bank stand in a single row facing north. Ravi stands 5th from the left end of the row and Suman stands 7th from the right end. Exactly 3 employees stand between Ravi and Suman. What is the minimum possible number of employees in the row? [Easy]

(A) 5
(B) 6
(C) 7
(D) 9
(E) None of these

170. A certain number of trainees sit in a row facing north at a bank induction programme. Anjali sits 12th from the left end and Bhavna sits 15th from the right end. Exactly 5 trainees sit between Anjali and Bhavna. What is the maximum possible number of trainees in the row? [Easy]

(A) 20
(B) 26
(C) 30
(D) 32
(E) None of these

171. Some customers stand in a queue facing north at a bank counter. Deepak stands 6th from the left end. Exactly 4 customers stand between Deepak and Esha, and Esha stands at one of the two extreme ends of the queue. What is the minimum possible number of customers in the queue? [Easy]

(A) 5
(B) 6
(C) 10
(D) 11
(E) None of these

172. A certain number of locker boxes are stacked one above another in a bank vault. Box P is 4th from the top of the stack and box Q is 3rd from the bottom. Exactly 6 boxes lie between box P and box Q. How many boxes are there in the stack? [Easy]

(A) 11
(B) 12
(C) 13
(D) 16
(E) None of these

173. Some officers of a bank sit in a row facing north. Only 6 officers sit to the right of Kavita, and Manish sits 3rd from the left end. Exactly 4 officers sit between Kavita and Manish. How many officers are there in the row? [Easy]

(A) 14
(B) 12
(C) 13
(D) 15
(E) None of these

174. Some persons stand in a row facing north outside a bank ATM. Rohit stands 3rd to the left of Sunil, and Sunil stands 5th from the right end of the row. At least how many persons are standing in the row? [Easy]

(A) 6
(B) 7
(C) 9
(D) 10
(E) None of these

175. A certain number of cash-cartons are placed one above another in a strong room. Carton A is placed 5th from the bottom and carton B is placed immediately above carton A. Only two cartons are placed above carton B. What is the total number of cartons? [Easy]

(A) 7
(B) 8
(C) 9
(D) 10
(E) None of these

176. Some clerks sit in a row facing north. Ravi sits 4th from the left end and Sneha sits 5th from the right end. Exactly 2 clerks sit between Ravi and Sneha. How many different values are possible for the total number of clerks in the row? [Moderate]

(A) 1
(B) 2
(C) 3
(D) 4
(E) None of these

177. A certain number of loan officers sit around a circular table facing the centre, at equal distances. Girish sits 3rd to the left of Harish, and exactly 6 officers sit between Harish and Girish when counted from Harish's right. How many officers sit around the table? [Moderate]

(A) 10
(B) 11
(C) 12
(D) 13
(E) None of these

178. Some employees of a regional office sit in a row facing north. Only 4 employees sit to the left of Jyoti and only 6 employees sit to the right of Kunal. Jyoti sits 3rd to the left of Kunal. What is the total number of employees in the row? [Moderate]

(A) 13
(B) 14
(C) 15
(D) 16
(E) None of these

179. A bank's office building has a certain number of floors, numbered 1 for the lowest floor and increasing upwards. Anil's department is on floor 3. Exactly two floors lie between Anil's floor and Bimal's floor, and Bimal's department is on the topmost floor. Chirag's department is on the floor immediately below Bimal's. How many floors does the building have? [Moderate]

(A) 8
(B) 7
(C) 6
(D) 5
(E) None of these

180. Some persons sit in a row facing north. Deepa sits 6th from the left end and exactly 5 persons sit between Deepa and Farhan. The number of persons sitting to the right of Farhan is one more than the number of persons sitting to the left of Deepa. How many persons are there in the row? [Moderate]

(A) 18
(B) 16
(C) 17
(D) 19
(E) None of these

181. A certain number of parcels are placed one above another in a courier rack. Exactly three parcels lie between parcel M and parcel N, and parcel M is 2nd from the top. Parcel N lies above parcel P with exactly one parcel between N and P, and parcel P is the bottommost parcel. How many parcels are there in the rack? [Moderate]

(A) 6
(B) 7
(C) 8
(D) 10
(E) None of these

182. Some account holders sit in a row facing north. Ritu sits 8th from the left end and Sonu sits 11th from the right end. If at most 3 persons sit between Ritu and Sonu, what is the maximum possible number of persons in the row? [Moderate]

(A) 19
(B) 20
(C) 21
(D) 22
(E) None of these

183. Some officers sit in a row facing north. A sits 4th from the left end and exactly 3 officers sit between A and B. C sits 3rd to the left of B, and only 4 officers sit to the right of C. How many officers are there in the row? [Difficult]

(A) 8
(B) 9
(C) 10
(D) 11
(E) None of these

184. A certain number of branch managers sit around a circular table facing the centre, at equal distances. Exactly 5 managers sit between Gaurav and Harsh when counted from Gaurav's left, and exactly 8 managers sit between Gaurav and Harsh when counted from Gaurav's right. How many managers sit around the table? [Difficult]

(A) 13
(B) 14
(C) 15
(D) 16
(E) None of these

185. Some candidates sit in a row facing north at an interview centre. Sudhir sits 4th to the left of Tanvi, Tanvi sits 5th from the right end, and Uday sits 2nd to the right of Sudhir. If at least 3 candidates sit to the left of Sudhir, what is the minimum possible number of candidates in the row? [Difficult]

(A) 10
(B) 11
(C) 12
(D) 13
(E) None of these

186. Some staff members sit in a row, all facing south. Anita sits 5th from the west end of the row and exactly 3 staff members sit between Anita and Bharat. Chetna sits 6th to the left of Bharat, and only 2 staff members sit to the east of Chetna. Which of the following can be the total number of staff members in the row? [Difficult]

(A) 11
(B) 13
(C) 15
(D) 17
(E) None of these

187. Some depositors sit in a row facing north. Deven sits 7th from the left end and Ekta sits 4th from the right end. At least 2 and at most 5 depositors sit between Deven and Ekta. What is the difference between the maximum and the minimum possible number of depositors in the row? [Difficult]

(A) 6
(B) 7
(C) 8
(D) 9
(E) None of these

188. A certain number of sealed cash boxes are placed one above another. Box S is the bottommost box and exactly 5 boxes lie between box S and box R. Box Q is placed immediately above box R. Exactly 3 boxes lie between box Q and box P, and only 1 box is placed above box P. How many boxes are there in all? [Difficult]

(A) 12
(B) 13
(C) 14
(D) 15
(E) None of these

189. A certain number of relationship managers sit around a circular table facing the centre. Exactly 4 managers sit between Anjali and Bharti when counted from Anjali's right (moving in the rightward direction from Anjali towards Bharti). Chitra sits 3rd to the right of Bharti. Exactly 2 managers sit between Chitra and Anjali when counted from Chitra's right. How many managers sit around the table? [Difficult]

(A) 9
(B) 10
(C) 11
(D) 12
(E) None of these

Section 2.2

2.2.1 Direct inequalities [checked, 1 flagged]

190. In the following question, the relationship between different elements is shown in the statement. Study the statement and decide which of the given conclusions follows.
Statement: $P > Q \geq R > S$
Conclusion I: $P > S$
Conclusion II: $Q > S$ [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusion I and conclusion II follow

191. Statements: $A \geq B$, $B > C$, $C \geq D$
Conclusion I: $A > D$
Conclusion II: $D \geq B$ [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusion I and conclusion II follow

192. Statement: $L < M = N \leq O$
Conclusion I: $O > M$
Conclusion II: $O = M$ [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusion I and conclusion II follow

193. The monthly salary of Rakesh is more than that of Suresh but less than that of Mahesh. The monthly salary of Naresh is more than that of Mahesh. Assuming no two of them draw the same salary, who among the four draws the highest monthly salary? [Easy]

(A) Rakesh
(B) Suresh
(C) Mahesh
(D) Naresh
(E) Cannot be determined

194. Statements: $A > B \leq C$, $C < D$
Conclusion I: $A > C$
Conclusion II: $D > B$ [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusion I and conclusion II follow

195. Statements: $T \geq U$, $U < V$, $V \leq W$
Conclusion I: $W > T$
Conclusion II: $T > V$ [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusion I and conclusion II follow

196. Which of the following symbols should replace the question mark in the expression below so that the conclusion $P > S$ is **definitely** true?

$$P \geq Q \ ? \ R = S$$

[Easy]

(A) $>$
(B) $\geq$
(C) $<$
(D) $\leq$
(E) $=$

197. Statements: $A \geq B > C$, $C \leq D < E$
Conclusion I: $A > D$
Conclusion II: $E > C$
Conclusion III: $B > E$ [Moderate]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Only conclusions I and II follow
(D) Only conclusions II and III follow
(E) All conclusions I, II and III follow

198. Statements: $P = Q \geq R$, $R > S$, $S \geq T$
Conclusion I: $P > S$
Conclusion II: $Q > T$
Conclusion III: $P = R$ [Moderate]

(A) Only conclusions I and II follow
(B) Only conclusions II and III follow

(C) Only conclusions I and III follow
(D) All conclusions I, II and III follow
(E) None of these

199. Statements: $A \geq B$, $B \leq C$, $C < D$
Conclusion I: $A > C$
Conclusion II: $A \leq C$ [Moderate]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusion I and conclusion II follow

200. In a wholesale market, the price of 1 kg of rice is more than the price of 1 kg of wheat. The price of 1 kg of wheat is not less than the price of 1 kg of maize. The price of 1 kg of maize is more than the price of 1 kg of barley.
Conclusion I: The price of 1 kg of rice is more than the price of 1 kg of barley.
Conclusion II: The price of 1 kg of wheat is more than the price of 1 kg of barley. [Moderate]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusion I and conclusion II follow

201. If the expression $F < G \leq H = I$ and $I < J$ are both definitely true, then which of the following is **definitely** true? [Moderate]

(A) $F > H$
(B) $G = J$
(C) $H > J$
(D) $J > G$
(E) $F \geq I$

202. In which of the following expressions will the relation $Q < T$ be **definitely** true? [Moderate]

(A) $Q > R \geq S = T$
(B) $Q \geq R > S \leq T$
(C) $T = S \leq R < Q$
(D) $T \geq S > R = Q$
(E) None of these

203. At a bank branch, the number of new savings accounts opened in April was not less than the number opened in May. The number opened in May was more than the number opened in June. The number opened in June was not more than the number opened in July. The number opened in July was less than the number opened in August.
Conclusion I: The number of accounts opened in August was more than the number opened in May.
Conclusion II: The number of accounts opened in April was more than the number opened in June. [Moderate]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusion I and conclusion II follow

204. In the following question, the symbols carry the meanings given below.
$X@Y$ means X is not smaller than Y.
$X\#Y$ means X is neither smaller than nor equal to Y.
$X\%Y$ means X is neither smaller than nor greater than Y.
$X \star Y$ means X is not greater than Y.
$X \odot Y$ means X is neither greater than nor equal to Y.
Statements: $P\%Q$, $Q \star R$, $R\#S$
Conclusion I: $S \odot Q$
Conclusion II: $R@P$
Conclusion III: $P \star R$ [Difficult]

(A) Only conclusions II and III follow
(B) Only conclusions I and II follow
(C) Only conclusion III follows
(D) Only conclusion II follows
(E) None of these

205. Statements: $A > B \geq C$, $D \geq C$, $D < E$
Conclusion I: $E > C$
Conclusion II: $A > D$
Conclusion III: $D \geq B$
Conclusion IV: $B > D$ [Difficult]

(A) Only conclusion I follows
(B) Only conclusion I follows, and either conclusion III or conclusion IV follows
(C) Only conclusions I and II follow
(D) Only either conclusion III or conclusion IV follows
(E) None of these

206. Which of the following is **definitely** true if the expression $R > O \geq A = S \leq T$ is definitely true? [Difficult]

(A) $T > A$
(B) $S < R$
(C) $O < T$
(D) $R < S$
(E) None of these

207. The total deposits of five branches P, Q, R, S and T of a bank are all different. The deposits of P are more than those of Q. The deposits of Q are less than those of R but more than those of S. The deposits of R are less than those of P. The deposits of T are more than those of R but less than those of P.
Which branch has the **lowest** total deposits? [Difficult]

(A) P
(B) Q
(C) R
(D) S
(E) None of these

208. Statements: $K \geq L > M$, $M \geq N$, $N > O$
Conclusion I: $K > O$
Conclusion II: $L > N$
Conclusion III: $M > O$
Conclusion IV: $K > N$ [Difficult]

(A) Only conclusions I and II follow

(B) Only conclusions II and III follow
(C) Only conclusions I, III and IV follow
(D) Only conclusions II, III and IV follow
(E) None of these

209. Statements: $A = B \leq C < D$, $E \geq D$
Which of the following is **definitely false**? [Difficult]

(A) $E > A$
(B) $C < E$
(C) $A \geq D$
(D) $D \geq B$
(E) $E > B$

210. Statements: $J \leq K$, $K < L$, $L = M$, $M \leq N$
Conclusion I: $N > J$
Conclusion II: $J = L$
Conclusion III: $K < N$ [Difficult]

(A) Only conclusion I follows
(B) Only conclusions I and II follow
(C) Only conclusions I and III follow
(D) Only conclusion III follows
(E) All conclusions I, II and III follow

2.2.2 Coded inequalities [checked, 1 flagged]

211. In the following question the symbols $\oplus$, $\otimes$, $\odot$, $\star$ and $\bullet$ are used with the meanings given below. $P \oplus Q$ means P is not smaller than Q. $P \otimes Q$ means P is neither smaller than nor equal to Q. $P \odot Q$ means P is neither greater than nor smaller than Q. $P \star Q$ means P is not greater than Q. $P \bullet Q$ means P is neither greater than nor equal to Q. Assuming the given statements to be true, decide which of the conclusions is/are definitely true. **Statements:** $M \oplus R$, $R \odot T$, $T \star K$. **Conclusions:** I. $K \otimes M$ II. $M \oplus T$ [Easy]

(A) Only conclusion I is true
(B) Only conclusion II is true
(C) Either conclusion I or conclusion II is true
(D) Neither conclusion I nor conclusion II is true
(E) Both conclusions I and II are true

212. In the following question the symbols $\oplus$, $\otimes$, $\odot$, $\star$ and $\bullet$ are used with the meanings given below. $P \oplus Q$ means P is not smaller than Q. $P \otimes Q$ means P is neither smaller than nor equal to Q. $P \odot Q$ means P is neither greater than nor smaller than Q. $P \star Q$ means P is not greater than Q. $P \bullet Q$ means P is neither greater than nor equal to Q. **Statements:** $D \bullet F$, $F \star H$, $H \otimes J$. **Conclusions:** I. $H \otimes D$ II. $J \bullet F$ [Easy]

(A) Only conclusion I is true
(B) Only conclusion II is true
(C) Either conclusion I or conclusion II is true
(D) Neither conclusion I nor conclusion II is true
(E) Both conclusions I and II are true

213. In the following question the symbols $\oplus$, $\otimes$, $\odot$, $\star$ and $\bullet$ are used with the meanings given below. $P \oplus Q$ means P is not smaller than Q. $P \otimes Q$ means P is neither smaller than nor equal to Q. $P \odot Q$ means P is neither greater than nor smaller than Q. $P \star Q$ means P is not greater than Q. $P \bullet Q$

means P is neither greater than nor equal to Q. **Statements:** $P \star Q$, $Q \star R$, $R \star S$. **Conclusions:** I. $S \oplus P$ II. $S \oplus Q$ [Easy]

(A) Only conclusion I is true
(B) Only conclusion II is true
(C) Either conclusion I or conclusion II is true
(D) Neither conclusion I nor conclusion II is true
(E) Both conclusions I and II are true

214. In the following question the symbols $\oplus$, $\otimes$, $\odot$, $\star$ and $\bullet$ are used with the meanings given below. $P \oplus Q$ means P is not smaller than Q. $P \otimes Q$ means P is neither smaller than nor equal to Q. $P \odot Q$ means P is neither greater than nor smaller than Q. $P \star Q$ means P is not greater than Q. $P \bullet Q$ means P is neither greater than nor equal to Q. **Statements:** $A \oplus B$, $B \star C$. **Conclusions:** I. $A \otimes C$ II. $C \oplus A$ [Easy]

(A) Only conclusion I is true
(B) Only conclusion II is true
(C) Either conclusion I or conclusion II is true
(D) Neither conclusion I nor conclusion II is true
(E) Both conclusions I and II are true

215. In the following question the symbols $\oplus$, $\otimes$, $\odot$, $\star$ and $\bullet$ are used with the meanings given below. $P \oplus Q$ means P is not smaller than Q. $P \otimes Q$ means P is neither smaller than nor equal to Q. $P \odot Q$ means P is neither greater than nor smaller than Q. $P \star Q$ means P is not greater than Q. $P \bullet Q$ means P is neither greater than nor equal to Q. **Statements:** $L \star N$, $N \bullet P$, $P \oplus Q$. **Conclusions:** I. $L \otimes Q$ II. $Q \otimes N$ [Easy]

(A) Only conclusion I is true
(B) Only conclusion II is true
(C) Either conclusion I or conclusion II is true
(D) Neither conclusion I nor conclusion II is true
(E) Both conclusions I and II are true

216. In the following question the symbols $\oplus$, $\otimes$, $\odot$, $\star$ and $\bullet$ are used with the meanings given below. $P \oplus Q$ means P is neither greater than nor equal to Q. $P \otimes Q$ means P is not greater than Q. $P \odot Q$ means P is neither smaller than nor equal to Q. $P \star Q$ means P is not smaller than Q. $P \bullet Q$ means P is neither greater than nor smaller than Q. **Statements:** $V \oplus W$, $W \bullet X$, $X \otimes Y$. **Conclusions:** I. $V \oplus Y$ II. $W \odot Y$ [Easy]

(A) Only conclusion I is true
(B) Only conclusion II is true
(C) Either conclusion I or conclusion II is true
(D) Neither conclusion I nor conclusion II is true
(E) Both conclusions I and II are true

217. The symbols are defined as follows. $P \oplus Q$ means P is not smaller than Q. $P \otimes Q$ means P is neither smaller than nor equal to Q. $P \odot Q$ means P is neither greater than nor smaller than Q. $P \star Q$ means P is not greater than Q. $P \bullet Q$ means P is neither greater than nor equal to Q. Which of the following symbols should replace the question mark in the expression $A \oplus B$? $C \oplus D$ so that the relation $A \otimes D$ becomes definitely true? [Easy]

(A) $\oplus$
(B) $\otimes$
(C) $\odot$
(D) $\star$
(E) $\bullet$

218. In the following question the symbols $\oplus$, $\otimes$, $\odot$, $\star$ and $\bullet$ are used with the meanings given below. $P \oplus Q$ means P is not smaller than Q. $P \otimes Q$ means P is neither smaller than nor equal to Q. $P \odot Q$ means P is neither greater than nor smaller than Q. $P \star Q$ means P is not greater than Q. $P \bullet Q$ means P is neither greater than nor equal to Q. **Statements:** $F \star G$, $G \otimes H$, $H \oplus J$. **Conclusions:** I. $F \otimes J$ II. $G \otimes J$ III. $J \star G$ [Moderate]

(A) Only conclusion I is true
(B) Only conclusions II and III are true
(C) Only conclusions I and II are true
(D) Only conclusion III is true
(E) All conclusions I, II and III are true

219. In the following question the symbols $\oplus$, $\otimes$, $\odot$, $\star$ and $\bullet$ are used with the meanings given below. $P \oplus Q$ means P is not smaller than Q. $P \otimes Q$ means P is neither smaller than nor equal to Q. $P \odot Q$ means P is neither greater than nor smaller than Q. $P \star Q$ means P is not greater than Q. $P \bullet Q$ means P is neither greater than nor equal to Q. **Statements:** $P \otimes Q$, $Q \star R$, $R \bullet S$, $S \odot T$. **Conclusions:** I. $T \otimes R$ II. $P \otimes T$ [Moderate]

(A) Only conclusion I is true
(B) Only conclusion II is true
(C) Either conclusion I or conclusion II is true
(D) Neither conclusion I nor conclusion II is true
(E) Both conclusions I and II are true

220. In the following question the symbols are used with the meanings given below. $P \oplus Q$ means P is neither greater than nor equal to Q. $P \otimes Q$ means P is not greater than Q. $P \odot Q$ means P is neither smaller than nor equal to Q. $P \star Q$ means P is not smaller than Q. $P \bullet Q$ means P is neither greater than nor smaller than Q. **Statements:** $K \star L$, $L \odot M$, $M \bullet N$, $N \star O$. **Conclusions:** I. $K \odot O$ II. $O \otimes L$ [Moderate]

(A) Only conclusion I is true
(B) Only conclusion II is true
(C) Either conclusion I or conclusion II is true
(D) Neither conclusion I nor conclusion II is true
(E) Both conclusions I and II are true

221. The symbols are defined as follows. $P \oplus Q$ means $P \geq Q$. $P \otimes Q$ means $P > Q$. $P \odot Q$ means $P = Q$. $P \star Q$ means $P \leq Q$. $P \bullet Q$ means $P < Q$. If the expression $R \otimes S \oplus T \odot U$ is definitely true, which of the following expressions is also definitely true? [Moderate]

(A) $U \otimes R$
(B) $T \star R$
(C) $S \bullet U$
(D) $U \otimes S$
(E) None of these

222. The symbols are defined as follows. $P \oplus Q$ means $P \geq Q$. $P \otimes Q$ means $P > Q$. $P \odot Q$ means $P = Q$. $P \star Q$ means $P \leq Q$. $P \bullet Q$ means $P < Q$. Which pair of symbols, placed in the two blanks of P __ Q __ R in that order, makes *both* the relations $P \otimes R$ and $R \bullet Q$ definitely true? [Moderate]

(A) $\otimes$ and $\oplus$
(B) $\otimes$ and $\star$
(C) $\odot$ and $\oplus$
(D) $\oplus$ and $\otimes$
(E) None of these

223. In the following question the symbols $\oplus$, $\otimes$, $\odot$, $\star$ and $\bullet$ are used with the meanings given below. $P \oplus Q$ means P is not smaller than Q. $P \otimes Q$ means P is neither smaller than nor equal to Q. $P \odot Q$ means P is neither greater than nor smaller than Q. $P \star Q$ means P is not greater than Q. $P \bullet Q$ means P is neither greater than nor equal to Q. **Statements:** $W \oplus X$, $X \otimes Y$, $Y \odot Z$. **Conclusions:** I. $W \otimes Z$ II. $Z \bullet X$ III. $W \odot Y$ [Moderate]

(A) Only conclusion I is true
(B) Only conclusion II is true
(C) Only conclusions I and III are true
(D) Only conclusions I and II are true
(E) All conclusions I, II and III are true

224. In the following question the symbols are used with the meanings given below. $P \oplus Q$ means P is neither greater than nor equal to Q. $P \otimes Q$ means P is not greater than Q. $P \odot Q$ means P is neither smaller than nor equal to Q. $P \star Q$ means P is not smaller than Q. $P \bullet Q$ means P is neither greater than nor smaller than Q. **Statements:** $B \odot C$, $C \star D$, $D \oplus E$, $E \bullet F$. **Conclusions:** I. $B \odot D$ II. $F \odot D$ III. $B \odot F$ [Moderate]

(A) Only conclusion I is true
(B) Only conclusion III is true
(C) Only conclusions I and II are true
(D) Only conclusions II and III are true
(E) All conclusions I, II and III are true

225. In the following question the symbols $\oplus$, $\otimes$, $\odot$, $\star$ and $\bullet$ are used with the meanings given below. $P \oplus Q$ means P is not smaller than Q. $P \otimes Q$ means P is neither smaller than nor equal to Q. $P \odot Q$ means P is neither greater than nor smaller than Q. $P \star Q$ means P is not greater than Q. $P \bullet Q$ means P is neither greater than nor equal to Q. **Statements:** $J \oplus K$, $K \bullet L$, $L \star M$, $M \otimes N$. **Conclusions:** I. $L \star J$ II. $M \otimes K$ III. $J \otimes N$ [Difficult]

(A) Only conclusion I is true
(B) Only conclusion II is true
(C) Only conclusions I and III are true
(D) Only conclusions II and III are true
(E) None of the conclusions is true

226. The symbols are defined as follows. $P \oplus Q$ means $P \geq Q$. $P \otimes Q$ means $P > Q$. $P \odot Q$ means $P = Q$. $P \star Q$ means $P \leq Q$. $P \bullet Q$ means $P < Q$. Which of the following combinations of symbols, filled into the three blanks of P __ Q __ R __ S in that order, makes *both* $S \bullet P$ and $Q \oplus S$ definitely true? [Difficult]

(A) $\oplus$, $\oplus$, $\otimes$
(B) $\otimes$, $\star$, $\oplus$
(C) $\odot$, $\star$, $\bullet$
(D) $\star$, $\otimes$, $\oplus$
(E) None of these

227. In the following question the symbols are used with the meanings given below. $P \oplus Q$ means P is neither greater than nor equal to Q. $P \otimes Q$ means P is not greater than Q. $P \odot Q$ means P is neither smaller than nor equal to Q. $P \star Q$ means P is not smaller than Q. $P \bullet Q$ means P is neither

greater than nor smaller than Q. **Statements:** $Q \otimes R$, $R \oplus S$, $S \star T$, $T \odot U$. **Conclusions:** I. $Q \oplus T$ II. $U \otimes R$ III. $U \odot Q$ [Difficult]

(A) Only conclusion I is true
(B) Only conclusion II is true
(C) Only conclusion III is true
(D) Only conclusions I and II are true
(E) None of the conclusions is true

228. The symbols are defined as follows. $P \oplus Q$ means $P \geq Q$. $P \otimes Q$ means $P > Q$. $P \odot Q$ means $P = Q$. $P \star Q$ means $P \leq Q$. $P \bullet Q$ means $P < Q$. In which of the following expressions is the relation $H \otimes M$ definitely true? [Difficult]

(A) $H \oplus J \star K \otimes M$
(B) $H \odot J \oplus K \star M$
(C) $H \otimes J \odot K \oplus M$
(D) $M \star K \bullet J \oplus H$
(E) None of these

229. The monthly salaries of five bank employees – Rohit (P), Sneha (Q), Kabir (R), Meera (S) and Tarun (T) – satisfy the coded relations below, where $A \oplus B$ means A is not smaller than B, $A \otimes B$ means A is neither smaller than nor equal to B, $A \odot B$ means A is neither greater than nor smaller than B, $A \star B$ means A is not greater than B, and $A \bullet B$ means A is neither greater than nor equal to B. **Statements:** $P \star Q$, $Q \bullet R$, $R \oplus S$, $S \otimes T$. **Conclusions:** I. Kabir's salary is more than Rohit's salary. II. Sneha's salary is less than Meera's salary. [Difficult]

(A) Only conclusion I is true
(B) Only conclusion II is true
(C) Either conclusion I or conclusion II is true
(D) Neither conclusion I nor conclusion II is true
(E) Both conclusions I and II are true

230. The symbols are defined as follows. $P \oplus Q$ means $P \geq Q$. $P \otimes Q$ means $P > Q$. $P \odot Q$ means $P = Q$. $P \star Q$ means $P \leq Q$. $P \bullet Q$ means $P < Q$. Which pair of symbols, placed in the two blanks of L __ M __ N in that order, makes *both* $L \otimes N$ and $M \odot N$ definitely true? [Difficult]

(A) $\otimes$ and $\oplus$
(B) $\oplus$ and $\odot$
(C) $\odot$ and $\otimes$
(D) $\otimes$ and $\star$
(E) None of these

231. In the following question the symbols $\oplus$, $\otimes$, $\odot$, $\star$ and $\bullet$ are used with the meanings given below. $P \oplus Q$ means P is not smaller than Q. $P \otimes Q$ means P is neither smaller than nor equal to Q. $P \odot Q$ means P is neither greater than nor smaller than Q. $P \star Q$ means P is not greater than Q. $P \bullet Q$ means P is neither greater than nor equal to Q. **Statements:** $X \oplus Y$, $Y \star Z$, $Z \bullet W$. **Conclusions:** I. $W \otimes Y$ II. $X \otimes Z$ III. $Z \oplus X$ [Difficult]

(A) Only conclusion I is true
(B) Only conclusion I is true, and either conclusion II or conclusion III is true
(C) Only either conclusion II or conclusion III is true
(D) All conclusions I, II and III are true
(E) None of these

2.2.3 Either-or cases and complementary pairs [checked, 3 flagged]

232. In the following question, the statements are assumed to be true even if they seem at variance with commonly known facts. Decide which of the given conclusions logically follows.

Statements: $M \geq N$, $N \geq O$, $O \geq P$
Conclusions: I. $M > P$ II. $M = P$ [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusions I and II follow

233. Statements: $P \leq Q$, $Q \leq R$
Conclusions: I. $R > P$ II. $R \geq P$ [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusions I and II follow

234. Statements: $X \geq Y = Z$, $Z > W$
Conclusions: I. $X > W$ II. $Y > W$ [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusions I and II follow

235. Statements: $P > Q$, $R > Q$
Conclusions: I. $P > R$ II. $P \leq R$ [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusions I and II follow

236. Statements: $A = B \geq C$, $C \geq D$
Conclusions: I. $B \geq D$ II. $A > D$ [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusions I and II follow

237. Statements: $P > Q$, $Q < R$, $R \geq S$
Conclusions: I. $P > S$ II. $P < S$ [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusions I and II follow

238. For two quantities A and B, which of the following pairs of conclusions forms a genuine complementary pair, i.e. a pair in which exactly one member must be true in every possible case (so that an "either-or" verdict is justified when neither member is individually certain)? [Easy]

(A) I. $A > B$ II. $A < B$
(B) I. $A \geq B$ II. $A \leq B$
(C) I. $A > B$ II. $A \leq B$
(D) I. $A \geq B$ II. $A > B$
(E) None of these

239. In the following question the symbols are used with the meanings given below.
$P \,@\, Q$ — P is not smaller than Q; $P \,\#\, Q$ — P is neither smaller than nor equal to Q; $P * Q$ — P is neither greater than nor equal to Q; $P \,\%\, Q$ — P is neither greater than nor smaller than Q; $P \,\&\, Q$ — P is not greater than Q.
Statements: $M \,@\, N$, $N \,\%\, O$, $O \,\&\, P$
Conclusions: I. $M \,\#\, P$ II. $M \,\&\, P$ [Moderate]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusions I and II follow

240. Statements: $A \geq B > C$, $C \leq D < E$
Conclusions: I. $B > D$ II. $B \leq D$ III. $A > C$ [Moderate]

(A) Only conclusion I and conclusion III follow
(B) Only conclusion III follows
(C) Only either conclusion I or conclusion II follows
(D) Only conclusion III follows, and either conclusion I or conclusion II follows
(E) All three conclusions follow

241. Statements: $P \geq Q$, $Q > R$, $R = S$, $S \geq T$
Conclusions: I. $P > S$ II. $P = S$ III. $T < Q$ [Moderate]

(A) Only conclusion I follows
(B) Only conclusion I and conclusion III follow
(C) Only either conclusion I or conclusion II follows
(D) Only conclusion III follows
(E) Only conclusion II and conclusion III follow

242. Statements: $J \leq K$, $K \leq L$, $L \leq M$
Conclusions: I. $M \geq J$ II. $M > J$ III. $M = J$ [Moderate]

(A) Only conclusion I follows
(B) Only conclusion I follows, and either conclusion II or conclusion III follows
(C) Only either conclusion II or conclusion III follows
(D) All three conclusions follow
(E) None of these

243. Four bank branches quoted their processing fees as follows. The fee at branch A is greater than the fee at branch B. The fee at branch C is not smaller than the fee at branch B. The fee at branch C is not greater than the fee at branch D.

Conclusions: I. The fee at branch A is not smaller than the fee at branch D. II. The fee at branch A is smaller than the fee at branch D. [Moderate]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusions I and II follow

244. Statements: $X \geq Y$, $Y = Z$, $Z \geq W$, $W > V$
Conclusions: I. $X > V$ II. $X \geq W$ [Moderate]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusions I and II follow

245. In the following question the symbols are used with the meanings given below.
$P \,@\, Q$ — P is not smaller than Q; $P \,\#\, Q$ — P is neither smaller than nor equal to Q; $P * Q$ — P is neither greater than nor equal to Q; $P \,\%\, Q$ — P is neither greater than nor smaller than Q; $P \,\&\, Q$ — P is not greater than Q.
Statements: $D \,\&\, E$, $E * F$, $F \,@\, G$
Conclusions: I. $D \,\#\, G$ II. $D * G$ [Moderate]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Neither conclusion I nor conclusion II follows
(D) Either conclusion I or conclusion II follows
(E) Both conclusions I and II follow

246. In the following question the symbols are used with the meanings given below.
$P \,@\, Q$ — P is not smaller than Q; $P \,\#\, Q$ — P is neither smaller than nor equal to Q; $P * Q$ — P is neither greater than nor equal to Q; $P \,\%\, Q$ — P is neither greater than nor smaller than Q; $P \,\&\, Q$ — P is not greater than Q.
Statements: $A \,@\, B$, $B \,\&\, C$, $C \,\#\, D$, $D \,\%\, E$
Conclusions: I. $A \,\#\, D$ II. $A \,\&\, D$ III. $C \,\#\, E$ [Difficult]

(A) Only conclusion III follows
(B) Only either conclusion I or conclusion II follows
(C) Only conclusion III follows, and either conclusion I or conclusion II follows
(D) All three conclusions follow
(E) None of these

247. In which of the following expressions is it true that neither "$P > S$" nor "$P = S$" can be established on its own, yet one of them must certainly hold (i.e. the pair $P > S$, $P = S$ is a genuine complementary pair)? [Difficult]

(A) $P \geq Q \geq R \geq S$
(B) $P > Q \geq R \geq S$
(C) $P \geq Q \leq R \geq S$
(D) $P \leq Q \geq R \geq S$
(E) None of these

248. Statements: $A \geq B$, $B \leq C$, $C = D$, $D \leq E$
Conclusions: I. $A > C$ II. $A \leq C$ III. $B < E$ IV. $B \geq E$ [Difficult]

(A) Either conclusion I or conclusion II follows
(B) Either conclusion III or conclusion IV follows
(C) Either conclusion I or conclusion II follows, and either conclusion III or conclusion IV follows
(D) Only conclusion III follows, and either conclusion I or conclusion II follows
(E) None of these

249. Statements: $P \leq Q < R = S \geq T > U$, $U \geq V$
Conclusions: I. $P < S$ II. $Q \geq T$ III. $Q < T$ [Difficult]

(A) Only conclusion I follows
(B) Only either conclusion II or conclusion III follows
(C) Only conclusion I follows, and either conclusion II or conclusion III follows
(D) All three conclusions follow
(E) None of these

250. Five branches of a bank set monthly sales targets. The target of branch A is not less than that of branch B. The target of branch B is greater than that of branch C. The target of branch C is not greater than that of branch D. The target of branch D is equal to that of branch E.
Conclusions: I. The target of branch A is greater than that of branch E. II. The target of branch A is not greater than that of branch E. [Difficult]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusions I and II follow

251. Statements: $M < N \leq O$, $O > P \geq Q$
Conclusions: I. $M \geq Q$ II. $M \leq Q$ III. $O > Q$ [Difficult]

(A) Only conclusion III follows
(B) Only conclusion III follows, and either conclusion I or conclusion II follows
(C) Only either conclusion I or conclusion II follows
(D) All three conclusions follow
(E) None of these

252. Statements: $X \geq Y$, $Y \geq Z$, $Z \geq X$
Conclusions: I. $X = Z$ II. $X > Z$ [Difficult]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusions I and II follow

Section 2.3

2.3.1 Standard two-statement syllogism **[checked, 5 flagged]**

253. In the question below, two statements are given followed by two conclusions numbered I and II. Take the given statements to be true even if they seem to be at variance with commonly known facts, and decide which of the given conclusions logically follows. Statements: All clerks are employees. Some employees are officers. Conclusions: I. Some clerks are officers. II. Some officers are employees. [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusion I and conclusion II follow

254. Statements: All loans are advances. No advance is a deposit. Conclusions: I. No loan is a deposit. II. Some deposits are loans. [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusion I and conclusion II follow

255. Statements: Some cheques are drafts. All drafts are instruments. Conclusions: I. All cheques are instruments. II. Some instruments are cheques. [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusion I and conclusion II follow

256. Statements: Some branches are ATMs. Some ATMs are kiosks. Conclusions: I. Some branches are kiosks. II. No branch is a kiosk. [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusion I and conclusion II follow

257. Statements: All bankers are graduates. Some graduates are engineers. Conclusions: I. Some bankers are engineers. II. All graduates are bankers. [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) None of these

258. Statements: All fixed deposits are investments. All investments are assets. Conclusions: I. Some assets are fixed deposits. II. All fixed deposits are assets. [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusion I and conclusion II follow

259. Statements: No auditor is a cashier. Some cashiers are managers. Conclusions: I. Some managers are not auditors. II. All managers are cashiers. [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusion I and conclusion II follow

260. Statements: No teller is a trainee. All trainees are recruits. Conclusions: I. Some tellers are not recruits. II. Some recruits are not tellers. [Moderate]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusion I and conclusion II follow

261. Statements: Some vouchers are receipts. No receipt is a bill. Conclusions: I. Some vouchers are not bills. II. Some bills are vouchers. [Moderate]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusion I and conclusion II follow

262. Statements: All mandates are instructions. All instructions are records. Conclusions: I. All records are mandates. II. No record is a mandate. [Moderate]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusion I and conclusion II follow

263. Statements: Some lockers are vaults. All vaults are secure. Conclusions: I. All lockers being secure is a possibility. II. Some secure are lockers. [Moderate]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusion I and conclusion II follow

264. Statements: Some sureties are not guarantors. All guarantors are shareholders. Conclusions: I. Some shareholders are guarantors. II. Some sureties are not shareholders. [Moderate]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusion I and conclusion II follow

265. Statements: Some laptops are printers. Some printers are scanners. Conclusions: I. All scanners being laptops is a possibility. II. Some laptops are scanners. [Moderate]

(A) Only conclusion II follows
(B) Both conclusion I and conclusion II follow
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) None of these

266. Statements: Some verifiers are officers. All officers are processors. Conclusions: I. All verifiers are processors. II. Some verifiers are not processors. [Moderate]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusion I and conclusion II follow

267. Statements: Only a few gold loans are secured loans. All secured loans are collateral-backed. Conclusions: I. Some gold loans are collateral-backed. II. All collateral-backed being gold loans is a possibility. [Difficult]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusion I and conclusion II follow

268. Statements: No NPA is a performing asset. Only performing assets are standard assets. Conclusions: I. No standard asset is an NPA. II. Some performing assets are not standard assets. [Difficult]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusion I and conclusion II follow

269. Statements: Some pensions are annuities. No annuity is a gratuity. Conclusions: I. All pensions being gratuities is a possibility. II. Some pensions are not gratuities. [Difficult]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusion I and conclusion II follow

270. Statements: All debentures are bonds. Some bonds are not equities. Conclusions: I. Some debentures are not equities. II. Some equities are bonds. [Difficult]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusion I and conclusion II follow

271. Statements: Only a few auditors are inspectors. All inspectors are officers. Conclusions: I. Some officers are not auditors. II. All officers are auditors. [Difficult]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) None of these

272. Statements: No credit card is a debit card. All debit cards are plastic cards. Conclusions: I. Some plastic cards are not credit cards. II. All credit cards being plastic cards is a possibility. [Difficult]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusion I and conclusion II follow

273. Statements: Some tellers are supervisors. All supervisors are managers. Conclusions: I. Some managers are not tellers. II. All tellers being managers is a possibility. [Difficult]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusion I and conclusion II follow

2.3.2 Three or more statements [checked, 1 flagged]

274. In each question below three statements are given followed by two conclusions. Take the statements to be true even if they seem at variance with commonly known facts and decide which of the conclusions logically follows. Statements: All debit cards are wallets. All wallets are pouches. All pouches are bags. Conclusions: I. All debit cards are bags. II. Some bags are wallets. [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Both conclusions I and II follow
(D) Neither conclusion I nor II follows
(E) Either conclusion I or II follows

275. Statements: Some loans are advances. All advances are credits. All credits are assets. Conclusions: I. All loans are assets. II. Some assets are loans. [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Both conclusions I and II follow
(D) Neither conclusion I nor II follows
(E) Either conclusion I or II follows

276. Statements: All cheques are drafts. No draft is a coin. All coins are metals. Conclusions: I. No cheque is a coin. II. All metals are drafts. [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Both conclusions I and II follow
(D) Neither conclusion I nor II follows
(E) Either conclusion I or II follows

277. Statements: Some banks are branches. All branches are offices. Some offices are ATMs. Conclusions: I. Some banks are offices. II. Some banks are ATMs. [Easy]

(A) Only conclusion II follows
(B) Only conclusion I follows
(C) Either conclusion I or II follows
(D) Neither conclusion I nor II follows
(E) Both conclusions I and II follow

278. Statements: No pen is a file. All files are folders. Some folders are racks. Conclusions: I. Some folders are not pens. II. No pen is a folder. [Easy]

(A) Both conclusions I and II follow
(B) Neither conclusion I nor II follows
(C) Only conclusion I follows
(D) Only conclusion II follows
(E) Either conclusion I or II follows

279. Statements: All rupees are notes. Some notes are coins. All coins are metals. Conclusions: I. Some rupees are coins. II. Some notes are metals. [Easy]

(A) Only conclusion I follows
(B) Both conclusions I and II follow
(C) Neither conclusion I nor II follows
(D) Only conclusion II follows
(E) Either conclusion I or II follows

280. Statements: All clerks are staff. All staff are employees. Some employees are managers. Conclusions: I. Some staff are managers. II. No staff is a manager. [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Both conclusions I and II follow
(D) Neither conclusion I nor II follows
(E) Either conclusion I or II follows

281. Statements: All FDs are deposits. Some deposits are RDs. No RD is a loan. All loans are liabilities. Conclusions: I. Some deposits are not loans. II. Some liabilities are not RDs. [Moderate]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Both conclusions I and II follow
(D) Neither conclusion I nor II follows
(E) Either conclusion I or II follows

282. Statements: All ledgers are registers. Some registers are files. No file is a voucher. All vouchers are bills. Conclusions: I. All registers being vouchers is a possibility. II. Some bills are not files. [Moderate]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Both conclusions I and II follow
(D) Neither conclusion I nor II follows
(E) Either conclusion I or II follows

283. Statements: Some managers are cashiers. All cashiers are tellers. No teller is a peon. Some peons are guards. Conclusions: I. Some managers are not peons. II. Some guards are not tellers. [Moderate]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Neither conclusion I nor II follows
(D) Both conclusions I and II follow
(E) Either conclusion I or II follows

284. Statements: All cards are chips. No chip is a token. All tokens are coupons. Some coupons are vouchers. Conclusions: I. No card is a token. II. Some coupons are not chips. III. Some vouchers are coupons. [Moderate]

(A) Only I and II follow
(B) Only II and III follow
(C) Only I and III follow
(D) All I, II and III follow
(E) None of these

285. Statements: Some accounts are savings. All savings are deposits. Some deposits are current. No current is a demat. Conclusions: I. Some accounts are deposits. II. All demat being deposits is a possibility. III. Some savings are current. [Moderate]

(A) Only I and III follow
(B) Only II follows
(C) Only I and II follow
(D) All I, II and III follow
(E) None of these

286. Statements: All ATMs are kiosks. Some kiosks are counters. All counters are booths. Conclusions: I. Some kiosks are booths. II. Some ATMs are counters. III. No ATM is a counter. [Moderate]

(A) Only either II or III follows
(B) Only I follows
(C) All I, II and III follow
(D) Only I follows and either II or III follows
(E) None of these

287. Statements: No file is a folder. All folders are cabinets. Some cabinets are drawers. All drawers are handles. Conclusions: I. Some cabinets are not files. II. Some handles are cabinets. III. No file is a cabinet. [Moderate]

(A) Only I follows
(B) Only II and III follow
(C) Only I and III follow
(D) All I, II and III follow
(E) None of these

288. Statements: Some bonds are shares. All shares are equities. No equity is a debenture. All debentures are securities. Conclusions: I. Some bonds are not debentures. II. Some securities are not equities. III. All bonds being securities is a possibility. [Difficult]

(A) Only I and II follow
(B) Only II and III follow
(C) Only I and III follow
(D) All I, II and III follow
(E) None of these

289. Statements: All hampers are baskets. No basket is a satchel. Some satchels are trunks. All trunks are crates. Conclusions: I. No hamper is a satchel. II. All trunks being baskets is a possibility. III. Some crates are not baskets. [Difficult]

(A) Only I and III follow
(B) Only I and II follow
(C) Only III follows
(D) All I, II and III follow
(E) None of these

290. Statements: All auditors are accountants. Some accountants are analysts. No analyst is a trainee. Some trainees are interns. Conclusions: I. Some accountants are not trainees. II. Some auditors are analysts. III. Some auditors are not analysts. [Difficult]

(A) Only I follows
(B) Only either II or III follows
(C) Only I follows and either II or III follows
(D) All I, II and III follow
(E) None of these

291. Statements: Some passbooks are diaries. All diaries are calendars. No calendar is a poster. Some posters are banners. All banners are flags. Conclusions: I. Some passbooks are calendars. II. No diary is a poster. III. Some flags are posters. IV. Some banners are not calendars. [Difficult]

(A) Only I, II and III follow
(B) Only I and II follow
(C) All I, II, III and IV follow
(D) Only III and IV follow
(E) None of these

292. Statements: All coins are tokens. Some tokens are stamps. No stamp is a seal. All seals are marks. Conclusions: I. Some tokens are not seals. II. All coins being stamps is a possibility. III. Some marks are not stamps. [Difficult]

(A) Only I and II follow
(B) Only I and III follow
(C) Only II and III follow
(D) Only I follows
(E) None of these

293. Statements: Some tellers are cashiers. All cashiers are clerks. No clerk is an officer. Some officers are directors. Conclusions: I. All tellers being officers is a possibility. II. All directors being clerks is a possibility. III. Some directors are not clerks. [Difficult]

(A) Only I and II follow
(B) Only II follows
(C) Only I follows
(D) Only III follows
(E) All I, II and III follow

294. Statements: All emails are messages. Some messages are alerts. All alerts are notifications. No notification is a spam. Conclusions: I. Some messages are notifications. II. Some messages are not spam. III. All emails being alerts is a possibility. IV. Some emails are spam. [Difficult]

(A) Only I and II follow
(B) Only I, II and III follow
(C) Only II and IV follow
(D) All I, II, III and IV follow
(E) None of these

2.3.3 Possibility cases [checked, 1 flagged]

295. Statements: All loans are deposits. Some deposits are accounts. Conclusions: I. All accounts being loans is a possibility. II. Some loans are accounts. [Easy]

(A) Only conclusion I follows

(B) Only conclusion II follows
(C) Both conclusions I and II follow
(D) Either conclusion I or conclusion II follows
(E) Neither conclusion I nor conclusion II follows

296. Statements: All ledgers are registers. No register is a file. Conclusions: I. Some ledgers are files. II. All files being registers is a possibility. [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Both conclusions I and II follow
(D) Either conclusion I or conclusion II follows
(E) Neither conclusion I nor conclusion II follows

297. Statements: All clerks are officers. No officer is a manager. Which of the following is a possibility? [Easy]

(A) Some clerks are managers
(B) All officers are clerks
(C) Some officers are managers
(D) All managers are officers
(E) None of these

298. Statements: No wallet is a purse. Some purses are bags. Which of the following is ruled out, that is, which of the following can never be true? [Easy]

(A) Some bags are wallets
(B) All purses are bags
(C) All wallets are bags
(D) All bags are wallets
(E) None of these

299. Statements: All bonds are securities. Some securities are not shares. Conclusions: I. All bonds being shares is a possibility. II. All securities being shares is a possibility. [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Both conclusions I and II follow
(D) Either conclusion I or conclusion II follows
(E) Neither conclusion I nor conclusion II follows

300. Statements: Some cheques are drafts. All drafts are payments. Which of the following is a possibility? [Easy]

(A) No cheque is a payment
(B) Some drafts are not payments
(C) No cheque is a draft
(D) All payments are cheques
(E) None of these

301. Statements: Some vouchers are receipts. Some receipts are bills. Conclusions: I. All vouchers being bills is a possibility. II. All bills being vouchers is a possibility. III. Some vouchers are bills.[Easy]

(A) Only conclusion I follows
(B) Only conclusions I and II follow
(C) Only conclusion III follows
(D) All conclusions I, II and III follow
(E) Only conclusions II and III follow

302. Statements: All fintechs are startups. Some startups are unicorns. No unicorn is a bank. Conclusions: I. All fintechs being unicorns is a possibility. II. Some startups are not banks. [Moderate]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Both conclusions I and II follow
(D) Either conclusion I or conclusion II follows
(E) Neither conclusion I nor conclusion II follows

303. Statements: Some laptops are tablets. All tablets are gadgets. Some gadgets are phones. Conclusions: I. All laptops being phones is a possibility. II. All phones being tablets is a possibility. III. Some laptops are gadgets. [Moderate]

(A) Only conclusions I and III follow
(B) Only conclusions II and III follow
(C) Only conclusions I and II follow
(D) Only conclusion III follows
(E) All conclusions I, II and III follow

304. Statements: All coins are metals. Some coins are not alloys. Conclusions: I. All coins being alloys is a possibility. II. All metals being coins is a possibility. III. Some metals are not alloys. [Moderate]

(A) Only conclusion I follows
(B) Only conclusions II and III follow
(C) Only conclusion III follows
(D) Only conclusions I and II follow
(E) All conclusions I, II and III follow

305. Statements: Some rupees are dollars. All dollars are currencies. No currency is a commodity. Conclusions: I. Some rupees are not commodities. II. All rupees being currencies is a possibility. III. Some commodities are dollars. [Moderate]

(A) Only conclusions I and II follow
(B) Only conclusion II follows
(C) Only conclusion I follows
(D) Only conclusions II and III follow
(E) All conclusions I, II and III follow

306. Statements: All shares are equities. No equity is a bond. Some bonds are debentures. Conclusions: I. All debentures being shares is a possibility. II. No debenture is a share. [Moderate]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Both conclusions I and II follow
(D) Either conclusion I or conclusion II follows
(E) Neither conclusion I nor conclusion II follows

307. Statements: Some managers are directors. All directors are shareholders. Some shareholders are investors. Which of the following is NOT a valid possibility? [Moderate]

(A) All managers being investors is a possibility
(B) All shareholders being managers is a possibility
(C) All investors being directors is a possibility
(D) No manager is a shareholder

(E) All directors being investors is a possibility

308. Statements: Some deposits are FDs. All FDs are investments. No investment is a loss. Conclusions: I. Some deposits are investments. II. All deposits being investments is a possibility. III. Some deposits are not losses. IV. All losses being deposits is a possibility. [Moderate]

(A) Only conclusions I, II and III follow
(B) Only conclusions II and IV follow
(C) Only conclusions I and III follow
(D) All conclusions I, II, III and IV follow
(E) None of these

309. Statements: All PSU banks are banks. Some banks are NBFCs. No NBFC is a cooperative. All cooperatives are societies. Conclusions: I. All PSU banks being cooperatives is a possibility. II. All banks being cooperatives is a possibility. III. Some societies are not NBFCs. [Difficult]

(A) Only conclusions I and II follow
(B) Only conclusions II and III follow
(C) Only conclusions I and III follow
(D) All conclusions I, II and III follow
(E) None of these

310. Statements: Some audits are reviews. All reviews are checks. No check is a fraud. Some frauds are scams. Conclusions: I. All audits being checks is a possibility. II. All scams being checks is a possibility. III. Some scams are not checks. [Difficult]

(A) Only conclusions I and II follow
(B) Only conclusions I and III follow
(C) Only conclusion III follows
(D) Only conclusion I follows
(E) All conclusions I, II and III follow

311. Statements: All KYC forms are documents. Some documents are not verified. All verified items are records. Conclusions: I. All documents being records is a possibility. II. All KYC forms being verified is a possibility. III. Some records are documents. [Difficult]

(A) Only conclusions I and II follow
(B) Only conclusions II and III follow
(C) Only conclusions I and III follow
(D) All conclusions I, II and III follow
(E) None of these

312. Statements: Only a few insurers are reinsurers. All reinsurers are regulators. No regulator is an agent. Conclusions: I. All insurers being regulators is a possibility. II. Some insurers are not agents. III. All agents being insurers is a possibility. [Difficult]

(A) Only conclusions I and II follow
(B) Only conclusion II follows
(C) Only conclusions I and III follow
(D) All conclusions I, II and III follow
(E) Only conclusions II and III follow

313. Statements: All defaulters are borrowers. Some borrowers are guarantors. No guarantor is a lender. All lenders are financiers. Conclusions: I. All borrowers being lenders is a possibility. II. All financiers being guarantors is a possibility. [Difficult]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Both conclusions I and II follow
(D) Either conclusion I or conclusion II follows
(E) Neither conclusion I nor conclusion II follows

314. Statements: Some tellers are cashiers. All cashiers are defaulters. All defaulters are fraudsters. No fraudster is honest. Conclusions: I. All tellers being honest is a possibility. II. Some tellers are not honest. III. All fraudsters being cashiers is a possibility. [Difficult]

(A) Only conclusions I and III follow
(B) Only conclusion II follows
(C) Only conclusions II and III follow
(D) Only conclusion III follows
(E) None of these

315. Statements: Only a few passbooks are statements. No statement is a slip. All slips are tokens. Conclusions: I. All passbooks being tokens is a possibility. II. Some passbooks are not slips. III. All tokens being statements is a possibility. [Difficult]

(A) Only conclusion I follows
(B) Only conclusions I and II follow
(C) Only conclusions II and III follow
(D) All conclusions I, II and III follow
(E) None of these

2.3.4 Reverse syllogism [checked, 1 flagged]

316. In a reverse syllogism question the conclusions are given first and you must pick the set of statements that logically produces them. Conclusions: (I) All cheques are ledgers. (II) Some ledgers are files. Which set of statements below logically leads to BOTH conclusions? [Easy]

(A) Statements: All cheques are drafts. Some drafts are ledgers. All ledgers are files.
(B) Statements: Some cheques are drafts. All drafts are ledgers. All ledgers are files.
(C) Statements: All cheques are drafts. All drafts are ledgers. Some drafts are files.
(D) Statements: All drafts are cheques. All drafts are ledgers. Some ledgers are files.
(E) None of these

317. Conclusions: (I) No account is a locker. (II) Some lockers are keys. Which of the following sets of statements logically leads to both of the given conclusions? [Easy]

(A) Statements: Some accounts are deposits. No deposit is a locker. All keys are lockers.
(B) Statements: All accounts are deposits. No locker is a key. Some deposits are lockers.
(C) Statements: No account is a deposit. All deposits are lockers. Some lockers are keys.
(D) Statements: All accounts are deposits. No deposit is a locker. Some keys are lockers.
(E) None of these

318. Conclusions: (I) Some tellers are managers. (II) All clerks are managers. Which of the following sets of statements logically leads to both of the given conclusions? [Easy]

(A) Statements: All clerks are officers. All officers are managers. Some tellers are officers.
(B) Statements: All clerks are officers. Some officers are managers. All tellers are officers.
(C) Statements: Some clerks are officers. All officers are managers. All tellers are officers.
(D) Statements: All officers are clerks. All officers are managers. Some tellers are officers.

(E) None of these

319. Conclusions: (I) Some loans are not gold. (II) All gold are metals. Which of the following sets of statements logically leads to both of the given conclusions? [Easy]

(A) Statements: Some loans are silver. Some silver are not gold. All gold are metals.
(B) Statements: All loans are silver. No gold is silver. All metals are gold.
(C) Statements: Some loans are silver. No silver is gold. All gold are metals.
(D) Statements: Some silver are loans. No loan is gold. Some gold are metals.
(E) None of these

320. Conclusions: (I) Some notes are coins. (II) No coin is a bond. Which of the following sets of statements logically leads to both of the given conclusions? [Easy]

(A) Statements: Some notes are cash. All cash are coins. Some coins are not bonds.
(B) Statements: All notes are cash. All coins are cash. No coin is a bond.
(C) Statements: All notes are cash. Some cash are coins. No cash is a bond.
(D) Statements: All notes are cash. All cash are coins. No coin is a bond.
(E) None of these

321. Conclusions: (I) Some branches are cities. (II) Some cities are not villages. Which of the following sets of statements logically leads to both of the given conclusions? [Easy]

(A) Statements: Some towns are branches. Some towns are cities. No town is a village.
(B) Statements: All branches are towns. All towns are cities. No town is a village.
(C) Statements: All towns are branches. All cities are towns. Some villages are not cities.
(D) Statements: All branches are towns. Some cities are towns. No village is a town.
(E) None of these

322. Conclusions: (I) All debits are credits. (II) Some credits are entries. Which of the following sets of statements logically leads to both of the given conclusions? [Easy]

(A) Statements: All debits are vouchers. Some vouchers are credits. Some credits are entries.
(B) Statements: Some debits are vouchers. All vouchers are credits. All credits are entries.
(C) Statements: All vouchers are debits. All vouchers are credits. All entries are credits.
(D) Statements: All debits are vouchers. All credits are vouchers. Some vouchers are entries.
(E) None of these

323. Conclusions: (I) Only a few files are reports. (II) All reports are documents. [Note: 'Only a few A are B' means Some A are B and Some A are not B.] Which of the following sets of statements logically leads to both of the given conclusions? [Moderate]

(A) Statements: All files are records. All records are reports. All reports are documents.
(B) Statements: Some files are records. Some records are reports. All reports are documents. Some files are not documents.
(C) Statements: Some files are records. All records are reports. All reports are documents. Some files are not documents.
(D) Statements: Some files are reports. All documents are reports. Some files are not reports.
(E) None of these

324. Conclusions: (I) Some savings are not deposits. (II) All deposits are banks. Which of the following sets of statements logically leads to both of the given conclusions? [Moderate]

(A) Statements: All deposits are banks. No bank is an insurance. Some savings are insurances.

(B) Statements: All deposits are banks. Some banks are not insurances. Some savings are insurances.
(C) Statements: All banks are deposits. No bank is an insurance. Some savings are insurances.
(D) Statements: All deposits are banks. No insurance is a saving. Some banks are insurances.
(E) None of these

325. Conclusions: (I) Some auditors are clerks. (II) All clerks being cashiers is a possibility. Which of the following sets of statements logically leads to both of the given conclusions? [Moderate]

(A) Statements: All auditors are inspectors. Some inspectors are clerks. All clerks are cashiers.
(B) Statements: All auditors are inspectors. All inspectors are clerks. Some clerks are cashiers.
(C) Statements: Some auditors are inspectors. All inspectors are clerks. No clerk is a cashier.
(D) Statements: No auditor is an inspector. All clerks are inspectors. Some cashiers are clerks.
(E) None of these

326. Conclusions: (I) All laptops are printers. (II) Some printers are not scanners. Which of the following sets of statements logically leads to both of the given conclusions? [Moderate]

(A) Statements: All laptops are monitors. All printers are monitors. No monitor is a scanner.
(B) Statements: All laptops are monitors. Some monitors are printers. No printer is a scanner.
(C) Statements: Some laptops are monitors. All monitors are printers. No scanner is a monitor.
(D) Statements: All laptops are monitors. All monitors are printers. No monitor is a scanner.
(E) None of these

327. Conclusions: (I) No borrower is a defaulter. (II) Some defaulters are guarantors. Which of the following sets of statements logically leads to both of the given conclusions? [Moderate]

(A) Statements: All borrowers are applicants. All applicants are lenders. Some lenders are not defaulters. Some guarantors are defaulters.
(B) Statements: All applicants are borrowers. All applicants are lenders. No lender is a defaulter. Some guarantors are defaulters.
(C) Statements: All borrowers are applicants. All applicants are lenders. No lender is a defaulter. Some guarantors are defaulters.
(D) Statements: All borrowers are applicants. No applicant is a lender. Some lenders are defaulters. Some defaulters are guarantors.
(E) None of these

328. Conclusions: (I) All queries are complaints. (II) No complaint is a refund. Which of the following sets of statements logically leads to both of the given conclusions? [Moderate]

(A) Statements: All complaints are emails. Some emails are not refunds. All queries are complaints.
(B) Statements: All complaints are emails. No email is a refund. All queries are complaints.
(C) Statements: All emails are complaints. No email is a refund. All queries are complaints.
(D) Statements: All complaints are emails. No email is a refund. Some queries are complaints.
(E) None of these

329. Conclusions: (I) Some managers are trainees. (II) No trainee is a director. Which of the following sets of statements logically leads to both of the given conclusions? [Recall: 'Only a few A are B' means Some A are B and Some A are not B.] [Moderate]

(A) Statements: Only a few managers are officers. All officers are trainees. No trainee is a director.
(B) Statements: Only a few managers are officers. All trainees are officers. No officer is a director.
(C) Statements: All managers are officers. Some officers are trainees. No trainee is a director.
(D) Statements: Only a few officers are managers. All officers are trainees. Some trainees are not directors.

(E) None of these

330. Conclusions: (I) Some vouchers are not receipts. (II) All receipts being vouchers is a possibility. Which of the following sets of statements logically leads to both of the given conclusions? [Difficult]

(A) Statements: Some vouchers are invoices. Some invoices are not receipts. Some receipts are stamps.
(B) Statements: Some vouchers are invoices. No invoice is a receipt. Some receipts are stamps.
(C) Statements: All vouchers are invoices. No invoice is a receipt. All receipts are stamps.
(D) Statements: No voucher is an invoice. All receipts are invoices. Some stamps are receipts.
(E) None of these

331. Conclusions: (I) All ledgers are registers. (II) Some registers are not journals. (III) Some journals are books. Which of the following sets of statements logically leads to ALL THREE of the given conclusions? [Difficult]

(A) Statements: All ledgers are folios. Some folios are registers. No folio is a journal. All books are journals.
(B) Statements: All folios are ledgers. All folios are registers. No folio is a journal. Some journals are books.
(C) Statements: All ledgers are folios. All folios are registers. No register is a journal. Some books are not journals.
(D) Statements: All ledgers are folios. All folios are registers. No folio is a journal. Some journals are books.
(E) None of these

332. Conclusions: (I) All cashiers are staff. (II) Some staff are not visitors. (III) Some visitors are guards. Which of the following sets of statements logically leads to ALL THREE of the given conclusions? [Recall: 'Only A are B' means All B are A.] [Difficult]

(A) Statements: Only staff are cashiers. Only a few staff are visitors. Some visitors are guards.
(B) Statements: Only cashiers are staff. Only a few staff are visitors. Some visitors are guards.
(C) Statements: Only staff are cashiers. All staff are visitors. Some guards are visitors.
(D) Statements: Only staff are cashiers. Only a few visitors are staff. All guards are visitors.
(E) None of these

333. Conclusions: (I) No cheque is a coupon. (II) Some coupons are not tokens. (III) All cheques being tokens is a possibility. Which of the following sets of statements logically leads to ALL THREE of the given conclusions? [Difficult]

(A) Statements: All cheques are tokens. Some tokens are not coupons. Some coupons are cards.
(B) Statements: No cheque is a token. All coupons are tokens. Some coupons are cards.
(C) Statements: All cheques are tokens. No token is a coupon. Some coupons are cards.
(D) Statements: All tokens are cheques. No token is a coupon. Some cards are coupons.
(E) None of these

334. Conclusions: (I) Some rupees are dollars. (II) All dollars are notes. (III) Some notes are not coins. Which of the following sets of statements logically leads to ALL THREE of the given conclusions? [Difficult]

(A) Statements: Some rupees are euros. All euros are dollars. All notes are dollars. No note is a coin.
(B) Statements: Some rupees are euros. All euros are dollars. All dollars are notes. No note is a coin.
(C) Statements: All rupees are euros. Some euros are dollars. All dollars are notes. Some notes are not coins.
(D) Statements: Some euros are rupees. All dollars are euros. All dollars are notes. No coin is a note.

(E) None of these

335. Conclusions: (I) Only a few applications are approvals. (II) All approvals are sanctions. (III) Some sanctions are rejections. Which of the following sets of statements logically leads to ALL THREE of the given conclusions? [Difficult]

(A) Statements: All applications are approvals. All approvals are sanctions. Some sanctions are rejections.
(B) Statements: Some applications are approvals. All sanctions are approvals. Some sanctions are rejections. Some applications are not sanctions.
(C) Statements: Some approvals are applications. All approvals are sanctions. Some rejections are sanctions. All applications are sanctions.
(D) Statements: Some applications are approvals. Some applications are not sanctions. All approvals are sanctions. Some sanctions are rejections.
(E) None of these

336. Conclusions: (I) Some statements are not passbooks. (II) All statements being slips is a possibility. (III) No slip is a passbook. Which of the following sets of statements logically leads to ALL THREE of the given conclusions? [Difficult]

(A) Statements: All passbooks are records. No record is a slip. Some statements are slips.
(B) Statements: All records are passbooks. No record is a slip. Some statements are slips.
(C) Statements: All passbooks are records. Some records are not slips. Some slips are statements.
(D) Statements: All passbooks are records. No record is a slip. No statement is a slip.
(E) None of these

Section 2.4

2.4.1 Letter-shifting coding [checked, 6 flagged]

337. In a certain code language used by the clearing section of a bank, BANK is written as CBOL. In the same code, how will LOAN be written? [Easy]

(A) MPBO
(B) MPBN
(C) KNZM
(D) MOBP
(E) None of these

338. In a certain code, CASH is written as ECUJ. How will DEBIT be written in that code? [Easy]

(A) FGDKV
(B) FGDLV
(C) FHDKV
(D) BCZGR
(E) None of these

339. In a code language, RUPEE is written as QTODD. How will PAISA be written in the same language? [Easy]

(A) OZHRZ
(B) QBJTB
(C) OZHRA
(D) OZGRZ
(E) None of these

340. In a certain code, MONEY is written as KMLCW. In the same code, how will FUNDS be written? [Easy]

(A) DSLBQ
(B) DSLBP
(C) DTLBQ
(D) HWPFU
(E) None of these

341. Meera, a probationary officer, finds that in her branch code TRADE is written as WUDGH. How will PROFIT be written in that code? [Easy]

(A) SURILW
(B) SURILV
(C) SUQILW
(D) RUSILW
(E) None of these

342. In a certain code, DEPOSIT is written as EFQPTJU. Which word is written as UPLFO in that same code? [Easy]

(A) TOKEN
(B) TONER
(C) TAKEN
(D) TOKER
(E) None of these

343. In a certain code language every letter of a word is moved four steps forward in the English alphabet, so that BOND is written as FSRH. Which one of the following words is NOT correctly coded under this rule? [Easy]

(A) RATE → VEXI
(B) LOSS → PSWW
(C) CHIP → GLMT
(D) FUND → JYRG
(E) GAIN → KEMR

344. In a certain code the letters of a word are first written in reverse order and then each letter is moved one step forward in the alphabet. Under this rule BRANCH is written as IDOBSC. How will CREDIT be written? [Moderate]

(A) UJEFSD
(B) UJEFSC
(C) TIDERC
(D) SHCDQB
(E) None of these

345. In a certain code language, letters standing at odd positions in a word are moved two steps forward and letters standing at even positions are moved two steps backward. Under this rule MARKET is written as OYTIGR. How will BUDGET be written? [Moderate]

(A) DSFEGR
(B) DSFEGP
(C) DSFERG
(D) ZWBICV
(E) None of these

346. In a code language the first letter of a word is moved one step forward, the second letter two steps forward, the third letter three steps forward, and so on. Under this rule LOAN is written as MQDR. How will CASH be written in the same code? [Moderate]

(A) DCVL
(B) DCVK
(C) DBVL
(D) BYPD
(E) None of these

347. In a certain code each letter of a word is first replaced by the letter occupying the same position from the opposite end of the alphabet (A by Z, B by Y and so on) and the resulting letter is then moved one step forward. Under this rule BANK is written as ZANQ. How will FUND be written? [Moderate]

(A) VGNX
(B) UFMW
(C) VGNW
(D) TENV
(E) None of these

348. In a certain code language every letter of a word is moved forward by a number of steps equal to the number of letters in that word, so that LOAN is written as PSER. In the same code, how will TRANSFER be written? [Moderate]

(A) BZIVANMZ
(B) BZIVANMY
(C) AZIVANMZ
(D) LJSFKXWJ
(E) None of these

349. In a certain code language CHEQUE is written as FKHTXH and BANKER is written as EDQNHU. How will LOCKER be written in that language? [Moderate]

(A) ORFNHU
(B) ORFNHT
(C) ORENHU
(D) ILZHBO
(E) None of these

350. In a certain code the letters in the first half of a six-letter word are moved two steps forward while the letters in the second half are moved two steps backward. Under this rule LEDGER is written as NGFECP. How will PROFIT be written? [Moderate]

(A) RTQDGR
(B) RTQDGP
(C) RTODGR
(D) NPMHKV
(E) None of these

351. In a certain code the first letter of a word is moved one step forward, the second two steps forward, the third three steps forward and so on, and the resulting group of letters is then written in reverse order. Under this rule BANK is written as OQCC. How will DEPOSIT be written? [Difficult]

(A) AOXSSGE
(B) AOXSSGF
(C) EGSSXOA
(D) AOXSGSE
(E) None of these

352. In a certain code language every vowel of a word is moved one step backward and every consonant is moved two steps forward, so that MARKET is written as OZTMDV. How will CUSTOMER be written in the same code? [Difficult]

(A) ETUVNODT
(B) ETUVNODS
(C) ETUVNOCT
(D) EVUVNODT
(E) None of these

353. In a certain code the letters of a word are shifted forward following the repeating pattern +1, +2, +3, +1, +2, +3 and so on. Under this rule AUDIT is written as BWGJV and LEDGER is written as MGGHGU. How will PROFIT be written? [Difficult]

(A) QTRGKW
(B) QTRGKV
(C) QTRGJW
(D) OPLEGQ
(E) None of these

354. In a certain code each letter of a word is first moved three steps forward and the resulting group of letters is then reversed, so that BANK is written as NQDE. In this code, which word is written as BUXVDHUW? [Difficult]

(A) TREASURY
(B) TREASURE
(C) SECURITY
(D) MEASURED
(E) None of these

355. In a certain code every letter of a word is moved forward by a number of steps equal to the alphabet position of the first letter of that word, so that BOND is written as DQPF. How will DEBIT be written in the same code? [Difficult]

(A) HIFMX
(B) HIFMW
(C) GIFMX
(D) ZAXEP
(E) None of these

356. In a certain code the letters at odd positions of a word are moved three steps forward, the letters at even positions are moved three steps backward, and the resulting group of letters is then written in reverse order. Under this rule LOAN is written as KDLO. How will BRANCH be written? [Difficult]

(A) EFKDOE
(B) EODKFE
(C) EFKDOF
(D) EFKDPE
(E) None of these

357. In a certain code each letter of a word is moved forward by a number of steps equal to the number of letters that stand after it in that word, so that LOAN is written as OQBN. How will CREDIT be written in the same code? [Difficult]

(A) HVHFJS
(B) HVHFIT
(C) HVGFJT
(D) XNBBHT
(E) None of these

2.4.2 Word / sentence coding (message coding) [checked, 1 flagged]

358. In a certain code language, 'bank gives loan' is written as 'sa ti mo', 'loan is costly' is written as 'ti ka du', and 'bank is safe' is written as 'sa ka pe'. What is the code for 'loan' in that language? [Easy]

(A) sa
(B) ti
(C) ka
(D) mo
(E) None of these

359. In a certain code language, 'manager signs cheque' is written as 'pt kr sn' and 'clerk signs form' is written as 'kr mn dl'. What is the code for 'signs'? [Easy]

(A) pt
(B) sn
(C) kr
(D) mn
(E) Cannot be determined

360. In a certain code language, 'Rohit deposits money' is written as 'ja ne vi', 'money is safe' is written as 'vi to ru', and 'deposits gold today' is written as 'ja bi lo'. The code 'vi' stands for which word? [Easy]

(A) deposits
(B) money
(C) safe
(D) is
(E) None of these

361. In a certain code language, 'credit card payment' is written as 'zo mi ka', 'payment due date' is written as 'ka ru pe', and 'card date fixed' is written as 'mi ru ta'. What is the code for 'card payment'? [Easy]

(A) zo mi
(B) mi ka
(C) ka ru
(D) mi ru
(E) None of these

362. In a certain code language, 'cash counter open' is written as 'de fi go' and 'open bank account' is written as 'go hu ji'. What is the code for 'cash'? [Easy]

(A) de
(B) fi
(C) go
(D) hu
(E) Cannot be determined

363. In a certain code language, 'loan sanctioned quickly' is written as 'mo re ti' and 'quickly repay loan' is written as 'ti mo ne'. What is the code for 'sanctioned'? [Easy]

(A) mo
(B) ti
(C) re
(D) ne
(E) None of these

364. In a certain code language, 'branch opens early' is written as 'sim pit ro', 'early morning walk' is written as 'ro dip fu', and 'walk to branch' is written as 'fu ke sim'. What is the code for 'morning'? [Easy]

(A) ro
(B) fu
(C) dip
(D) ke
(E) sim

365. In a certain code language, 'manager checks ledger' is written as 'ho pe ta', 'ledger shows profit' is written as 'pe di lo', 'profit is high' is written as 'lo za fi', and 'manager is busy' is written as 'ho za nu'. What is the code for 'manager shows high profit'? [Moderate]

(A) ho di fi lo
(B) ho pe fi lo
(C) ho di za lo
(D) ta di fi lo
(E) None of these

366. In a certain code language, 'file your income return' is written as 'sa lo pi te', 'income tax is high' is written as 'pi mu de ka', 'return the high amount' is written as 'te ne ka bo', and 'file the tax form' is written as 'sa ne mu ju'. What does the code 'bo de ka' mean? [Moderate]

(A) amount is high
(B) high income tax
(C) the amount high
(D) return is high
(E) None of these

367. In a certain code language, 'apply for new card' is written as 'zt fm qr bn', 'new card is free' is written as 'qr bn dl sk', and 'free service for all' is written as 'sk hv fm gt'. What is the code for 'card'? [Moderate]

(A) qr
(B) bn
(C) zt
(D) dl
(E) Cannot be determined

368. In a certain code language, 'open new savings account' is written as 'pu ta gi ve', 'savings account earns interest' is written as 'gi ve ro mi', and 'new interest rate announced' is written as 'ta mi ka du'. What is the code for 'savings account'? [Moderate]

(A) gi ve
(B) pu ta
(C) ro mi
(D) ta mi
(E) None of these

369. In a certain language, 'rupee' is called 'dollar', 'dollar' is called 'euro', 'euro' is called 'yen', and 'yen' is called 'pound'. In that language, what will the currency actually used for everyday purchases in India be called? [Moderate]

(A) dollar
(B) euro
(C) yen
(D) pound
(E) rupee

370. In a certain code language, 'cash flow is strong' is written as 'jo mi ta ne', 'strong bank policy' is written as 'ne ku ri', and 'policy is clear' is written as 'ri ta bo'. Which of the following can be represented by the code 'ku ta bo'? [Moderate]

(A) bank is clear
(B) cash is clear
(C) strong bank policy
(D) policy is clear
(E) None of these

371. In a certain code language, 'agent sells insurance policy' is written as 'fk rm pv ds', 'policy renewal due soon' is written as 'ds bt qn hz', 'insurance claim settled fast' is written as 'pv lw cj tx', and 'agent visits claim office' is written as 'fk gy lw mz'. What is the code for 'agent sells insurance claim'? [Moderate]

(A) fk rm pv lw
(B) fk rm pv ds
(C) fk rm cj lw
(D) fk gy pv lw
(E) None of these

372. In a certain code language, 'bank sanctioned the housing loan' is written as 'pi ko na se tu', 'housing rates are high' is written as 'se qa ve mo', 'the loan rates fell' is written as 'na tu qa dl', and 'bank staff are polite' is written as 'pi hr ve zn'. What is the code for 'bank sanctioned high rates'? [Difficult]

(A) pi ko mo qa
(B) pi ko mo ve
(C) pi na mo qa
(D) se ko mo qa
(E) None of these

373. In a certain language, 'debit' is called 'credit', 'credit' is called 'balance', 'balance' is called 'statement', 'statement' is called 'passbook', and 'passbook' is called 'debit'. If a speaker of that language uses the word 'balance', which real banking item is he actually referring to? [Difficult]

(A) debit
(B) credit
(C) balance
(D) statement
(E) passbook

374. In a certain code language, 'customers trust our bank' is written as 'ma di lo pu', 'our bank is growing' is written as 'lo pu ta re', 'trust is very important' is written as 'di ta se ni', and 'growing customers need care' is written as 're ma bo ka'. Which one of the following codes can be decoded with certainty from the given information? [Difficult]

(A) lo
(B) se
(C) bo
(D) re
(E) ni

375. In a certain code language, 'CASH' is written as 9, 'CHEQUE' is written as 13 and 'DEPOSIT' is written as 15. How will 'WITHDRAWAL' be written in that language? [Difficult]

(A) 19
(B) 20
(C) 21
(D) 22
(E) None of these

376. In a certain code language, 'profit and loss account' is written as 'fm gt hr jn', 'loss due to fraud' is written as 'hr kp lq mn', 'account opened due today' is written as 'jn rs kp tv', and 'fraud case today closed' is written as 'mn wx tv yz'. What is the code for 'account opened due to fraud'? [Difficult]

(A) jn rs kp lq mn
(B) jn rs kp lq hr
(C) jn tv kp lq mn
(D) hr rs kp lq mn
(E) None of these

377. In a certain language, 'saving' is called 'current', 'current' is called 'fixed', 'fixed' is called 'recurring', 'recurring' is called 'salary', and 'salary' is called 'saving'. Mr. Iyer wants an account into which he will deposit Rs. 5,000 every month for 60 months and receive the maturity amount at the end. In that language, what will he call the account he opens? [Difficult]

(A) current
(B) fixed
(C) recurring
(D) salary
(E) saving

378. In a certain code language, 'good manager guides staff' is written as 'jo ki lm no', 'staff need good training' is written as 'no pq jo rs', 'training makes manager perfect' is written as 'rs tu ki vw', and 'staff meeting today' is written as 'no xy za'. What is the code for 'good staff need training'? [Difficult]

(A) jo no pq ki
(B) jo ki pq rs
(C) no jo lm rs
(D) jo no pq tu
(E) None of these

2.4.3 Symbol and number coding [checked, 2 flagged]

379. In a bank's internal filing system each digit is written using a fixed symbol. The digits 1, 2, 3, 4, 5, 6, 7, 8, 9, 0 are coded respectively as %, @, #, *, $, ?, &, !, +, = (in that order). What is the code for the account number 4829? [Easy]

(A) * ! @ +
(B) * ! + @
(C) ! * @ +
(D) * @ ! +
(E) None of these

380. In a certain code the digits 3, 7, 1, 9, 5, 2, 8, 4, 6, 0 are written respectively as @, $, ?, #, &, +, *, %, !, = (in that order). A cheque number is printed as % # = $. What is the cheque number? [Easy]

(A) 4907
(B) 4970
(C) 9407
(D) 4097
(E) None of these

381. In a certain code language the word BANK is written as 2-1-14-11. Following the same rule, how will the word LOAN be written? [Easy]

(A) 12-15-1-14
(B) 12-14-1-15
(C) 11-15-1-14
(D) 12-15-1-13
(E) None of these

382. In a certain code the word CASH is written as 31. Following the same rule, how is the word BANK written? [Easy]

(A) 26
(B) 27
(C) 28
(D) 29
(E) None of these

383. In a certain code 5 is written as 25, 6 is written as 36 and 7 is written as 49. Following the same rule, how will 9 be written? [Easy]

(A) 72
(B) 81
(C) 90
(D) 99
(E) None of these

384. In a certain code the number 3479 is written as 4580. Following the same rule, how will 6852 be written? [Easy]

(A) 7963
(B) 7962
(C) 6963
(D) 7953
(E) None of these

385. In a certain code the number 8524 is written as 4258. Following the same rule, how will 7139 be written? [Easy]

(A) 9317
(B) 9137
(C) 3179
(D) 9371
(E) None of these

386. In a certain code the digits 4, 7, 2, 9, 5, 1, 3, 8, 6, 0 are written respectively as @, #, $, %, &, *, ?, +, =, ! (in that order), subject to the following conditions. (i) If the first digit is odd and the last digit is even, the codes for the first and the last digits are to be interchanged. (ii) If both the first and the last digits are even, both are to be coded as the code for the first digit. What is the code for 758264? [Moderate]

(A) @ & + $ = #
(B) # & + $ = @
(C) @ & + = $ #
(D) @ + & $ = #
(E) None of these

387. In a certain code language the word FUND is written as 21-6-13-23. Following the same rule, how will the word RISK be written? [Moderate]

(A) 9-18-8-16
(B) 18-9-19-11
(C) 9-18-16-8
(D) 9-18-8-15
(E) None of these

388. In a coded statement of accounts the symbol @ stands for the digit 5, # stands for 3, % stands for 9 and * stands for 2. What is the value of $\% \times * + @ \times \# - *$? [Moderate]

(A) 29
(B) 30
(C) 31
(D) 33
(E) None of these

389. A bank encodes a customer's PIN by replacing every digit with the remainder obtained when three times that digit is divided by 10. Using this rule, what does the PIN 4729 become? [Moderate]

(A) 2167
(B) 2617
(C) 1267
(D) 2176
(E) None of these

390. In a ledger code, $ means 'add', @ means 'subtract', # means 'multiply' and * means 'divide'. What is the value of 18 # 3 $ 24 $*$ 6 @ 10? [Moderate]

(A) 46
(B) 48
(C) 50
(D) 52
(E) None of these

391. In a certain code, a number is written by first replacing each of its digits by a symbol using the list 1, 2, 3, 4, 5, 6, 7, 8, 9, 0 coded respectively as #, @, $, %, &, *, ?, +, =, ! (in that order), and then writing the whole string of symbols in reverse order. Which number is written as + & ! ? $ in this code? [Moderate]

(A) 37058
(B) 85073
(C) 30758
(D) 37508
(E) None of these

392. A bank codes an account number by adding all its digits, and then repeating the same addition on the result until a single digit is left. What is the code for the account number 84769? [Moderate]

(A) 5
(B) 6
(C) 7
(D) 8
(E) None of these

393. In a certain code the digits 5, 3, 8, 1, 9, 4, 2, 7, 6, 0 are written respectively as @, #, $, %, &, *, +, =, ?, ! (in that order), subject to these conditions. (i) If both the first and the last digits are odd, both are to be coded as the code for the last digit. (ii) If the first digit is even and the last digit is odd, both are to be coded as the code for the first digit. (iii) If both the first and the last digits are even, the codes for the first and the last digits are to be interchanged. What is the code for 364987? [Difficult]

(A) = ? * & $ =
(B) # ? * & $ #
(C) = ? * & $ #
(D) = & * ? $ =
(E) None of these

394. In a certain code language the word DEPOSIT is coded as 4-5-16-15-19-9-20. In a modified version of this code, each number so obtained is replaced by the sum of its digits, and the resulting numbers are then written in reverse order. How will the word CREDIT be coded in the modified version? [Difficult]

(A) 2-9-4-5-9-3
(B) 3-9-5-4-9-2
(C) 2-9-5-4-9-3
(D) 2-4-9-5-9-3
(E) None of these

395. In a security code each of the symbols @, # and % stands for a different non-zero digit. It is known that the two-digit number written as @# added to the two-digit number written as #@ gives 121, and that $@ - \# = 3$. If % stands for the digit $@ + \# - 5$, what number is written as @#%? [Difficult]

(A) 476
(B) 746
(C) 764
(D) 647
(E) None of these

396. A bank generates a security code from a four-digit account number as follows: the digits, read from left to right, are multiplied by 4, 3, 2 and 1 respectively and the four products are added. If the total so obtained is even, the security code is half of that total; if it is odd, the security code is that total increased by 5. What is the security code for the account number 8573? [Difficult]

(A) 30
(B) 32
(C) 34
(D) 69
(E) None of these

397. In a certain code language each letter of a word is first replaced by its position in the English alphabet. The resulting numbers are then added in pairs from the left, the first with the second, the third with the fourth and so on; if the word has an odd number of letters the last number is left unchanged. Thus CASH is coded as 4-27. How will the word BRANCH be coded? [Difficult]

(A) 20-15-11
(B) 20-16-11
(C) 19-15-11
(D) 20-15-12
(E) None of these

398. In a certain code the digits 9, 4, 7, 2, 6, 1, 8, 3, 5, 0 are written respectively as #, @, %, *, $, =, +, ?, &, ! (in that order), subject to these conditions. (i) If both the first and the last digits are even, both are to be coded as the code for the digit 5. (ii) If the first digit is odd and the last digit is even, the codes for the first and the last digits are to be interchanged. What is the code for 473162? [Difficult]

(A) @ % ? = $ *
(B) & % ? = $ *
(C) & % = ? $ &
(D) % & ? = $ &
(E) None of these

399. A bank encodes a four-digit PIN in two stages: first each digit is replaced by the remainder obtained when the square of that digit is divided by 7, and then the four remainders are written in decreasing order. What is the encoded form of the PIN 6945? [Difficult]

(A) 4421
(B) 4412
(C) 1424
(D) 4241
(E) None of these

2.4.4 Conditional coding [checked, 3 flagged]

400. A bank codes the letters of its internal file tags as follows: A = 5, B = 3, C = 7, D = 1, E = 9, F = 2, G = 8, H = 4, I = 6. **Condition:** If the first letter of the group is a vowel, then both the first and the last letters are to be coded as $*$. What is the code for the group **ACDF**? [Easy]

(A) $*71*$
(B) 5712
(C) $*712$
(D) $571*$
(E) None of these

401. Digits are coded as: 1 = P, 2 = R, 3 = M, 4 = K, 5 = T, 6 = A, 7 = D, 8 = J, 9 = Q. **Condition:** If the first digit is odd and the last digit is even, then both of them are to be coded as the code for the last digit. What is the code for 53728? [Easy]

(A) TMDRJ
(B) JMDRT
(C) JRDMJ
(D) JMDRJ
(E) None of these

402. Letters are coded as: R = 4, M = 9, K = 2, P = 7, T = 5, B = 3, N = 8, S = 6. **Condition:** If both the first and the last letters of a group are consonants, then both are to be coded as the code for the last letter. What is the code for **RKMB**? [Easy]

(A) 4294
(B) 3293
(C) 3294
(D) 3923
(E) None of these

403. Digits are coded as: 3 = F, 5 = H, 7 = L, 9 = C, 2 = E, 4 = B, 6 = M, 8 = R, 1 = T. **Condition:** If a number begins and ends with the same digit, then both that first and that last digit are to be coded as X. What is the code for 47294? [Easy]

(A) BLECB
(B) XLECB
(C) XLECX
(D) BLECX
(E) None of these

404. Letters are coded as: D = 6, E = 2, G = 9, I = 4, L = 7, N = 1, O = 5, P = 3. **Condition:** If the last letter of a group is a vowel, then it is to be coded as the code for the first letter. What is the code for **LDNO**? [Easy]

(A) 7617
(B) 7615
(C) 5617
(D) 7167
(E) None of these

405. Digits are coded as: 4 = M, 2 = T, 7 = Q, 8 = R, 5 = E, 1 = V, 6 = N, 3 = S. **Condition:** If the first digit is even and the last digit is odd, then the codes of the first and the last digits are to be interchanged. What is the code for 85163? [Easy]

(A) REVNS
(B) SEVNS
(C) REVNR
(D) SEVNR
(E) None of these

406. Letters are coded as: B = 5, A = 8, U = 1, K = 3, M = 9, R = 2, E = 6, T = 4. **Condition:** If the first letter of a group is a vowel, then both the first and the last letters are to be coded as $*$. What is the code for **KUMB**? [Easy]

(A) $*19*$
(B) 3198
(C) 3195
(D) 8193
(E) None of these

407. A bank codes account digits as: 5 = R, 3 = M, 9 = A, 1 = P, 7 = K, 4 = D, 8 = T, 2 = J, 6 = E. **Conditions:** (i) If the first digit is odd and the last digit is even, then both are to be coded as the code for the first digit. (ii) If the first digit is even and the last digit is odd, then both are to be coded as $*$. What is the code for 39148? [Moderate]

(A) MAPDT
(B) MAPDM
(C) $*$APD$*$
(D) MAPDR
(E) None of these

408. Letters are coded as: C = 7, H = 2, N = 5, O = 9, P = 3, S = 6, T = 4, V = 8. **Condition:** If the first letter of a group is a vowel, then it is to be coded as #. Which of the following groups will be coded as #625? [Moderate]

(A) OSHN
(B) OHSN
(C) OSNH
(D) CSHN
(E) None of these

409. Digits are coded as: 6 = L, 2 = V, 8 = F, 4 = B, 9 = P, 3 = N, 5 = J, 7 = R, 1 = Q. **Conditions:** (i) If the first digit is even, then the first digit is to be coded as $*$. (ii) If the last digit is odd, then the last digit is to be coded as the code for the first digit. (iii) If both (i) and (ii) are applicable, then the number is to be coded using condition (ii) only. What is the code for 84937? [Moderate]

(A) ∗BPNF
(B) FBPNR
(C) ∗BPN∗
(D) FBPNF
(E) None of these

410. Digits are coded as: 1 = D, 4 = G, 5 = T, 6 = A, 7 = W, 8 = M, 9 = K, 2 = Z. **Condition:** If a number contains more than two even digits, then every even digit in that number is to be coded as E. What is the code for 47685? [Moderate]

(A) EWEET
(B) GWAMT
(C) EWEEE
(D) EWAMT
(E) None of these

411. Letters are coded as: A = 4, K = 8, M = 1, R = 6, S = 9, T = 3, I = 5, U = 7. **Conditions:** (i) If both the first and the last letters are vowels, then their codes are to be interchanged. (ii) If the first letter is a vowel and the last letter is a consonant, then both are to be coded as the code for the last letter. What is the code for **IKMRU**? [Moderate]

(A) 58167
(B) 78167
(C) 78165
(D) 58165
(E) None of these

412. Letters are coded as: B = 2, D = 7, E = 4, H = 3, L = 9, N = 5, O = 1, P = 6. **Condition:** If the last letter of a group is a vowel, then the last letter is to be coded as ∗ and the first letter is to be coded as the code for that last letter. What is the code for **HLDE**? [Moderate]

(A) 397∗
(B) 4974
(C) ∗974
(D) 3974
(E) None of these

413. Digits are coded as: 3 = P, 8 = Q, 1 = R, 5 = S, 6 = T, 2 = U, 9 = V, 7 = W. **Conditions:** (i) If a digit occurs more than once in the number, then every occurrence of it after the first is to be coded as ∗. (ii) If the number begins with an even digit, then that first digit is to be coded as #. What is the code for 85356? [Moderate]

(A) QSPST
(B) #SPST
(C) QSP∗T
(D) #SP∗T
(E) None of these

414. Letters are coded as: E = 9, H = 4, J = 2, M = 7, P = 5, R = 1, T = 8, U = 3, W = 6, Y = 0. **Conditions:** (i) If the first letter is a consonant and the last letter is a vowel, then both are to be coded as the code for that vowel. (ii) If the first letter is a vowel and the last letter is a consonant, then both are to be coded as ∗. (iii) If both the first and the last letters are consonants, then both are to be coded as #. What is the code for **MWRTU**? [Difficult]

(A) 36183
(B) 76183
(C) 36181
(D) ∗618∗
(E) None of these

415. Digits are coded as: 2 = F, 4 = K, 5 = M, 7 = R, 8 = T, 9 = V, 1 = B, 3 = N. **Conditions:** (i) If the first digit is odd and the last digit is even, then both are to be coded as the code for the first digit. (ii) If the first digit is even and the last digit is odd, then both are to be coded as ∗. Which of the following numbers will be coded as ∗MRV∗? [Difficult]

(A) 55793
(B) 45794
(C) 45791
(D) 35791
(E) None of these

416. Letters are coded as: A = 3, C = 8, D = 6, I = 1, K = 5, N = 9, O = 2, R = 7, S = 4, U = 0. **Conditions:** (i) If both the first and the last letters are vowels, then both are to be coded as $*$. (ii) If the group contains exactly one vowel, then that vowel is to be coded as #. (iii) If the group contains no vowel, then the codes of the first and the last letters are to be interchanged. What is the code for **SCRND**? [Difficult]

(A) 48796
(B) 68796
(C) 48794
(D) 68794
(E) None of these

417. Digits are coded as: 5 = H, 9 = W, 2 = E, 6 = B, 3 = J, 8 = M, 4 = V, 7 = K, 1 = F. **Conditions:** (i) If the first digit is odd, then the code of the first digit is to be interchanged with the code of the last digit. (ii) If the last digit is even, then the last digit is to be coded as $*$. (iii) When both conditions apply, they must be applied in the order (i) first, then (ii). What is the code for 38596? [Difficult]

(A) JMHWB
(B) BMHW$*$
(C) BMHWJ
(D) $*$MHWJ
(E) None of these

418. Letters are coded as: F = 6, G = 1, I = 8, L = 4, N = 9, P = 2, S = 7, T = 3. **Conditions:** (i) If the first letter is a vowel and the last letter is a consonant, then both are to be coded as the code for the first letter. (ii) If the first letter is a consonant and the last letter is a vowel, then both are to be coded as $*$. (iii) If both the first and the last letters are consonants, then the codes of the second and the fourth letters are to be interchanged. What is the code for **PLSGN**? [Difficult]

(A) 24719
(B) 21794
(C) 24179
(D) 21749
(E) None of these

419. Letters are coded as: A = 0, B = 4, C = 9, E = 2, K = 7, M = 5, O = 6, R = 3, T = 1, V = 8. **Conditions:** (i) If both the first and the last letters are vowels, then both are to be coded as $*$. (ii) If the first letter is a consonant and the last letter is a vowel, then both are to be coded as the code for the first letter. (iii) If the first letter is a vowel and the last letter is a consonant, then both are to be coded as #. Which of the following groups will be coded as $*935*$? [Difficult]

(A) OCRME
(B) BCRME
(C) OCRMK
(D) BCRMK
(E) None of these

420. Digits are coded as: 1 = R, 3 = D, 4 = M, 5 = K, 6 = T, 7 = A, 8 = W, 9 = Z. **Conditions:** (i) If a number contains an equal count of odd and even digits, then the codes of the first two digits are to be interchanged. (ii) If a number contains more odd digits than even digits, then every odd digit is to be coded as $*$. (iii) If a number contains more even digits than odd digits, then every even digit is to be coded as #. What is the code for 583674? [Difficult]

(A) KWDTAM
(B) ∗W∗T∗M
(C) WKDTAM
(D) WKDTMA
(E) None of these

2.4.5 Chinese / new-pattern coding [checked, 1 flagged]

421. In a certain code language, 'bank gives loan' is written as 'ka pi tu', 'loan is costly' is written as 'pi na zo' and 'bank is safe' is written as 'ka na mi'. What is the code for the word 'loan' in that language? [Easy]

(A) ka
(B) pi
(C) na
(D) mi
(E) tu

422. In a certain code language, 'ripe mango tree' is written as 'sa de ro' and 'mango juice sweet' is written as 'de li fa'. Which of the following is the code for 'mango'? [Easy]

(A) sa
(B) ro
(C) de
(D) li
(E) fa

423. In a certain code language, 'debit card issued' is written as 'mo ta ke', 'card is blocked' is written as 'ta si lo' and 'issued to customer' is written as 'ke ru da'. The code 'mo' stands for which of the following words? [Easy]

(A) card
(B) issued
(C) blocked
(D) debit
(E) customer

424. In a certain code language, 'good bank service' is written as 'pa ni ku', 'service is poor' is written as 'ku ze ta' and 'bank is closed' is written as 'pa ze mi'. What is the code for 'good service' in that language? [Easy]

(A) pa ku
(B) ni ze
(C) ni ku
(D) ku ta
(E) ni mi

425. In a certain code language, 'money in account' is written as 'fi lo ka', 'account is safe' is written as 'lo tu me' and 'safe money always' is written as 'me fi da'. Which code stands for the word 'always'? [Easy]

(A) fi
(B) lo
(C) me
(D) da
(E) tu

426. In a certain code language, 'bright new coin' is written as 'zi pa mo', 'coin is round' is written as 'pa ta ru' and 'new round shape' is written as 'zi ru ke'. What is the code for the word 'bright'? [Easy]

(A) zi
(B) pa
(C) ru
(D) ta
(E) None of these

427. In a certain code language, 'over the bridge' is written as '5 3 9', 'walk over there' is written as '7 5 2' and 'the last walk' is written as '3 8 7'. Which digit stands for the word 'walk'? [Easy]

(A) 7
(B) 5
(C) 3
(D) 2
(E) 8

428. In a certain code language: 'profit and loss' is written as 'ka ni po'; 'loss of bank' is written as 'po zu re'; 'bank and customer' is written as 're ka mi'; 'customer service good' is written as 'mi ta lo'; 'service of bank' is written as 'ta zu re'. What is the code for 'good bank profit'? [Moderate]

(A) lo re ni
(B) ta re ni
(C) lo mi ni
(D) lo re po
(E) ni re ta

429. In a certain code language, 'credit' is written as '6C@', 'income' is written as '6I#', 'salary' is written as '6S@', 'audit' is written as '5A#' and 'loan' is written as '4L@'. Following the same rule, how is the word 'balance' written in that code? [Moderate]

(A) 7B#
(B) 7B@
(C) 6B@
(D) B7@
(E) None of these

430. In a certain code language: 'ravi eats fresh fruit' is written as 'na ki so ru'; 'fresh fruit is costly' is written as 'so ru mi da'; 'ravi is honest' is written as 'na mi pe'; 'costly fruit market' is written as 'da ru vo'. What is the code for the word 'fresh'? [Moderate]

(A) ru
(B) da
(C) so
(D) ki
(E) mi

431. In a certain code language: 'gold price rises daily' is written as 'ta bo ri se'; 'price of gold falls' is written as 'bo lu ta ka'; 'daily news falls short' is written as 'se ni ka mo'. On the basis of the above information, the codes of how many of the four words 'gold', 'price', 'daily' and 'falls' can be determined uniquely? [Moderate]

(A) Zero
(B) One
(C) Two
(D) Three
(E) Four

432. In a certain code language: 'apply for new loan' is written as 'ma di ku pe'; 'new loan sanctioned today' is written as 'ku pe zo la'; 'today apply online' is written as 'la ma vi'; 'education loan today' is written as 'wa pe la'. What is the code for 'apply for education'? [Moderate]

(A) ma di vi
(B) ma ku wa
(C) wa di la
(D) ma di wa
(E) None of these

433. In a certain code language, 'sell the shares' is written as '17 9 24', 'shares are costly' is written as '24 11 30' and 'sell costly gold' is written as '17 30 21'. What is the code for 'gold are the', in that order? [Moderate]

(A) 21 11 9
(B) 21 9 11
(C) 9 11 21
(D) 11 21 9
(E) 21 11 24

434. In a certain code language: 'bank opens new branch' is written as 'fi lo ta ru'; 'new branch is ready' is written as 'ta ru pe ka'; 'bank is very old' is written as 'fi pe za mo'. Which of the following statements is definitely TRUE? [Moderate]

(A) 'ta' means 'new'
(B) 'lo' means 'opens'
(C) 'za' means 'old'
(D) 'ka' means 'branch'
(E) 'pe' means 'bank'

435. In a certain code language: 'rise in gold price today' is written as 'ka lo mi ta ne'; 'price of silver rise' is written as 'mi ru za ka'; 'gold and silver today' is written as 'lo za pe ne'; 'in of and out' is written as 'ta ru pe do'. What is the code for 'silver price today'? [Difficult]

(A) za mi ne
(B) za ka lo
(C) za mi lo
(D) za ka ne
(E) Cannot be determined

436. In a certain code language: 'strong economy needs reforms' is written as '5 8 3 9'; 'reforms bring strong growth' is written as '3 7 5 2'; 'growth needs time' is written as '2 8 4'; 'time money growth' is written as '4 6 2'. What is the code for 'money bring economy', in that order? [Difficult]

(A) 6 9 7
(B) 1 7 9
(C) 6 7 9
(D) 9 7 6
(E) None of these

437. In a certain code language: 'nurses treat sick people' is written as 'ho ja mi ne'; 'people trust good nurses' is written as 'ne za ku ho'; 'good doctors treat patients' is written as 'za pi ja vo'; 'doctors are busy' is written as 'pi ra bu'; 'nurses are kind' is written as 'ho ra fe'. What is the code for 'busy nurses trust patients'? [Difficult]

(A) bu ho ku pi
(B) bu ho ku vo
(C) fe ho ku vo
(D) bu ne ku vo
(E) None of these

438. In a certain code language: 'clerk checks the ledger' is written as 'ta ni ru se'; 'the ledger is old' is written as 'ru se ka do'; 'old clerk retired today' is written as 'do ta pe li'. Eight different words occur in the three statements. The codes of how many of these eight words CANNOT be determined uniquely? [Difficult]

(A) One
(B) Two
(C) Three
(D) Four
(E) Five

439. In a certain code language: 'save more each month' is written as 'la ti ro ka'; 'each month has offers' is written as 'ro ka pi zu'; 'more offers this month' is written as 'ti zu do ka'. Which of the following pairs of words CANNOT be coded uniquely from the given information? [Difficult]

(A) 'each' and 'month'
(B) 'more' and 'month'
(C) 'month' and 'offers'
(D) 'save' and 'this'
(E) All the words can be coded uniquely

440. In a certain code language: 'apples are red fruits' is written as 'ge nu pa li'; 'red roses smell sweet' is written as 'pa vi to se'; 'sweet apples are costly' is written as 'se ge nu ho'; 'costly roses are rare' is written as 'ho vi nu za'. What is the code for 'rare red roses'? [Difficult]

(A) za pa to
(B) ho pa vi
(C) za vi nu
(D) za pa vi
(E) None of these

441. In a certain code language: 'train reached station late' is written as 'ki ma no de'; 'station is very crowded' is written as 'ma zu fo ra'; 'late night train service' is written as 'de po ki lu'; 'very good service today' is written as 'fo ta lu bi'. What is the code for 'night service station'? [Difficult]

(A) po lu de
(B) ki lu ma
(C) po ki ma
(D) ma po ta
(E) None of these

Section 2.5

2.5.1 Direct relations

[checked, 2 flagged]

442. Pointing to a photograph hanging in the branch manager's cabin, Rakesh said, "She is the daughter of my father's father's only son." How is the girl in the photograph related to Rakesh? [Easy]

(A) Cousin
(B) Sister
(C) Niece
(D) Aunt
(E) None of these

443. Introducing a man standing at the cash counter, Sunita said, "His wife is the only daughter of my mother." How is the man related to Sunita? [Easy]

(A) Brother
(B) Father
(C) Uncle
(D) Husband
(E) Son

444. A is the father of B. B is the sister of C. C is the son of D. How is C related to A? [Easy]

(A) Son
(B) Nephew
(C) Daughter
(D) Brother
(E) None of these

445. Pointing to a lady waiting in the bank queue, Mohan said, "She is the mother of the daughter of my father's only son." How is the lady related to Mohan? [Easy]

(A) Mother
(B) Sister
(C) Daughter
(D) Wife
(E) Aunt

446. Neha is the wife of Rohit. Rohit is the brother of Suman. Suman is the daughter of Prakash. How is Prakash related to Neha? [Easy]

(A) Father
(B) Father-in-law
(C) Brother-in-law
(D) Uncle
(E) None of these

447. Manoj is the son of Kiran. Kiran is the daughter of Ramesh. Ramesh is the husband of Sudha. How is Sudha related to Manoj? [Easy]

(A) Mother
(B) Aunt
(C) Sister
(D) Grandmother
(E) Daughter

448. At a bank's family day function Priya pointed to a man and said, "He is the father of my brother's son." How is the man related to Priya? [Easy]

(A) Father
(B) Uncle
(C) Brother
(D) Son
(E) None of these

449. Rajesh is the son of Mahesh. Sarita, who is Mahesh's sister, has a son Vipin and a daughter Neha. Ravi is the maternal uncle of Vipin. How is Neha related to Rajesh? [Moderate]

(A) Sister
(B) Cousin
(C) Niece
(D) Aunt
(E) None of these

450. Q is the brother of R. P is the sister of Q. T is the brother of S. S is the daughter of R. U is the father of P. How is Q related to T? [Moderate]

(A) Brother
(B) Father
(C) Uncle
(D) Nephew
(E) Cannot be determined

451. A is the mother of B and C. D is the husband of C. E is the son of D. F is the daughter of E. How is F related to A? [Moderate]

(A) Granddaughter
(B) Great-granddaughter
(C) Daughter
(D) Niece
(E) None of these

452. In a family of six members A, B, C, D, E and F, A and B are a married couple, A being the male member. D is the only son of C, who is the brother of A. E is the sister of D. B is the daughter-in-law of F, whose husband has died. How is E related to F? [Moderate]

(A) Daughter
(B) Sister-in-law
(C) Granddaughter
(D) Niece
(E) None of these

453. Mohit's mother is the only daughter of Ashok's mother. How is Ashok's mother related to Mohit's father? [Moderate]

(A) Mother
(B) Sister
(C) Aunt
(D) Mother-in-law
(E) None of these

454. Sonia is the daughter of the only sister of Vinod's father. Deepa is the mother of Sunil, and Sunil is the brother of Vinod's father. Rajat is another son of Deepa. How is Sonia related to Rajat? [Moderate]

(A) Niece
(B) Daughter
(C) Sister
(D) Cousin
(E) None of these

455. A family consists of a man, his wife and their four sons together with the wives of all four sons. Each of the four sons has three sons and one daughter of his own. What is the total number of male members in this family? [Moderate]

(A) 12
(B) 16
(C) 17
(D) 21
(E) None of these

456. Pointing to a woman seated in the bank's waiting hall, Vikram said, "She is the only daughter-in-law of the mother of my wife's only brother." How is the woman related to Vikram? [Difficult]

(A) Wife
(B) Sister
(C) Sister-in-law
(D) Mother-in-law
(E) None of these

457. Pointing to a photograph, a man said, "I have no brother or sister, but that man's father is my father's son." Whose photograph is the man looking at? [Difficult]

(A) His own
(B) His father's
(C) His son's
(D) His nephew's
(E) None of these

458. Amit, who is the only child of his parents, walked into a branch with a lady and told the manager, "This lady is the wife of the grandson of my mother." How is Amit related to the lady? [Difficult]

(A) Father-in-law
(B) Brother-in-law
(C) Uncle
(D) Husband
(E) Grandfather

459. P, Q, R, S, T and U are six members of a family. Q is the son of R, but R is not the mother of Q. P and R are a married couple. T is the brother of R. S is the daughter of P. U is the brother of P. How is U related to S? [Difficult]

(A) Brother
(B) Father
(C) Paternal uncle
(D) Maternal uncle
(E) None of these

460. The grandfather of Rohan is the brother of Kamal's father. Kamal's mother is the daughter of Meera, and Meera's only son is Naveen. How is Rohan's father related to Naveen? [Difficult]

(A) Brother
(B) Cousin
(C) Brother-in-law
(D) Nephew
(E) None of these

461. A, B, C, D, E, F and G are the seven members of a family consisting of four adults and three children, of whom F and G are the two girls. A and D are brothers and A is a doctor. E is an engineer married to one of the two brothers and has two children. B is married to D, and G is their child. Who is C? [Difficult]

(A) A's son
(B) D's son
(C) E's daughter
(D) B's son
(E) None of these

462. Q's mother is the sister of P and the daughter of M. S is the daughter of P and the sister of T. How is M related to T? [Difficult]

(A) Father
(B) Grandfather
(C) Grandmother
(D) Grandfather or grandmother
(E) Uncle

2.5.2 Coded relations

[checked, 2 flagged]

463. In a certain code, $A + B$ means 'A is the father of B', $A - B$ means 'A is the wife of B', $A \times B$ means 'A is the brother of B' and $A \div B$ means 'A is the daughter of B'. In the expression $P \div Q \times R$, how is P related to R? [Easy]

(A) Daughter
(B) Niece
(C) Sister
(D) Mother
(E) None of these

464. In a certain code, $A@B$ means 'A is the mother of B', $A\#B$ means 'A is the father of B', $A\&B$ means 'A is the sister of B' and $A * B$ means 'A is the son of B'. In the expression $K\#L@M$, how is K related to M? [Easy]

(A) Father
(B) Maternal grandfather
(C) Paternal grandfather
(D) Grandson
(E) None of these

465. In a certain code, $M\%N$ means 'M is the brother of N', $M@N$ means 'M is the mother of N' and $M\#N$ means 'M is the daughter of N'. Which of the following expressions means 'R is the maternal uncle of S'? [Easy]

(A) $R\#T@S$
(B) $R\%T@S$
(C) $R@T\%S$
(D) $S\#T\%R$
(E) None of these

466. In a certain code, $A + B$ means 'A is the son of B', $A - B$ means 'A is the wife of B', $A \times B$ means 'A is the sister of B' and $A \div B$ means 'A is the father of B'. In the expression $P - Q \div R$, how is P related to R? [Easy]

(A) Mother
(B) Sister
(C) Aunt
(D) Daughter
(E) None of these

467. In a certain code, $A \div B$ means 'A is the father of B', $A \times B$ means 'A is the mother of B', $A + B$ means 'A is the son of B' and $A - B$ means 'A is the daughter of B'. Which of the following expressions shows that 'X is the grandfather of Y'? [Easy]

(A) $X \div Z \times Y$
(B) $X \times Z \div Y$
(C) $X + Z \div Y$
(D) $X - Z \times Y$
(E) None of these

468. In a certain code, $P\%Q$ means 'P is the father of Q', $P\#Q$ means 'P is the sister of Q', $P * Q$ means 'P is the wife of Q' and $P@Q$ means 'P is the brother of Q'. In the expression $A\#B@C$, how is A related to C? [Easy]

(A) Sister
(B) Brother
(C) Mother
(D) Cousin
(E) None of these

469. In a certain code, $A \div B$ means 'A is the mother of B', $A \times B$ means 'A is the brother of B', $A + B$ means 'A is the father of B' and $A - B$ means 'A is the sister of B'. In the expression $P + Q \ ? \ R$, which symbol should replace the question mark so that P becomes the paternal grandfather of R? [Easy]

(A) $\div$
(B) $\times$
(C) $+$
(D) $-$
(E) None of these

470. In a certain code, $A\&B$ means 'A is the daughter of B', $A@B$ means 'A is the son of B', $A\#B$ means 'A is the brother of B' and $A * B$ means 'A is the mother of B'. Which of the following expressions means 'P is the grandson of S'? [Moderate]

(A) $P@Q * S$
(B) $P@Q\&S$
(C) $P\&Q@S$
(D) $S * Q@P$
(E) None of these

471. In a certain code, $A - B$ means 'A is the son of B', $A + B$ means 'A is the daughter of B', $A \div B$ means 'A is the husband of B' and $A \times B$ means 'A is the mother of B'. Which of the following expressions means 'M is the mother-in-law of N'? [Moderate]

(A) $M \times P \div N$
(B) $M \times P - N$
(C) $M + P \div N$
(D) $N - P \times M$
(E) None of these

472. In a certain code, $P\%Q$ means 'P is the brother of Q', $P\#Q$ means 'P is the wife of Q', $P * Q$ means 'P is the son of Q' and $P@Q$ means 'P is the daughter of Q'. In the expression $K\#L * M@N$, how is K related to N? [Moderate]

(A) Daughter-in-law
(B) Granddaughter
(C) Wife of the grandson
(D) Sister-in-law
(E) None of these

473. In a certain code, $A * B$ means 'A is the father of B', $A\%B$ means 'A is the sister of B', $A!B$ means 'A is the son of B' and $A\&B$ means 'A is the wife of B'. If $P\%Q!R\&S$ is true, then how is P related to S? [Moderate]

(A) Son
(B) Daughter
(C) Wife
(D) Sister
(E) None of these

474. In a certain code, $P \div Q$ means 'P is the sister of Q', $P \times Q$ means 'P is the father of Q', $P + Q$ means 'P is the mother of Q' and $P - Q$ means 'P is the son of Q'. Which of the following expressions means 'A is the paternal aunt of B'? [Moderate]

(A) $A \div X + B$
(B) $A \div X \times B$
(C) $A + X \div B$
(D) $A \times X \div B$
(E) None of these

475. In a certain code, $P@Q$ means 'P is the husband of Q', $P\#Q$ means 'P is the daughter of Q', $P\%Q$ means 'P is the brother of Q' and $P * Q$ means 'P is the mother of Q'. In the expression $A\%B\#C@D$, how is A related to D? [Moderate]

(A) Son
(B) Daughter
(C) Brother
(D) Father
(E) None of these

476. In a certain code, $A + B$ means 'A is the mother of B', $A - B$ means 'A is the brother of B', $A \times B$ means 'A is the father of B' and $A \div B$ means 'A is the sister of B'. In the expression $P - Q \div R \times S + T$, how is P related to T? [Moderate]

(A) Maternal uncle
(B) Maternal grandfather

(C) Brother of the maternal grandfather
(D) Brother of the maternal grandmother
(E) None of these

477. In a certain code, $A \times B$ means 'A is the mother of B', $A + B$ means 'A is the brother of B', $A - B$ means 'A is the daughter of B' and $A \div B$ means 'A is the father of B'. Which of the following expressions indicates that 'M is the nephew of N'? [Difficult]

(A) $M + R - Q + N$
(B) $M - Q + N$
(C) $M + R \div Q + N$
(D) $N \times Q \div M$
(E) None of these

478. In a certain code, $A \odot B$ means 'A is the son of B', $A\#B$ means 'A is the sister of B', $A@B$ means 'A is the father of B' and $A\%B$ means 'A is the mother of B'. If $K\%L@M\#N \odot O$ is true, which of the following is definitely true? [Difficult]

(A) O is the daughter of K
(B) M is the granddaughter of K
(C) N is the brother of L
(D) K is the mother-in-law of L
(E) None of these

479. In a certain code, $A\&B$ means 'A is the wife of B', $A\#B$ means 'A is the father of B' and $A\%B$ means 'A is the sister of B'. If $A\&B\#C\%D\#E$ is true and all five persons belong to the same family, how many of them are definitely female? [Difficult]

(A) One
(B) Two
(C) Three
(D) Four
(E) Cannot be determined

480. In a certain code, $P + Q$ means 'P is the father of Q', $P - Q$ means 'P is the wife of Q', $P \times Q$ means 'P is the sister of Q' and $P \div Q$ means 'P is the son of Q'. In the expression $A \div B - C + D \times E$, how is E related to A? [Difficult]

(A) Brother
(B) Sister
(C) Brother or sister
(D) Cousin
(E) None of these

481. In a certain code, $P@Q$ means 'P is the brother of Q', $P\%Q$ means 'P is the mother of Q', $P\#Q$ means 'P is the son of Q' and $P * Q$ means 'P is the father of Q'. In the expression $M\#N\%O@P * Q$, how is M related to Q? [Difficult]

(A) Maternal uncle
(B) Paternal uncle
(C) Brother
(D) Cousin
(E) None of these

482. In a certain code, $A!B$ means 'A is the father of B', $A\&B$ means 'A is the daughter of B', $A\%B$ means 'A is the brother of B' and $A@B$ means 'A is the wife of B'. Given that $P\&Q@R!S\%T$ is true, which of the following is definitely true? [Difficult]

(A) T is the sister of P
(B) P is the daughter of R
(C) S is the son of P

(D) Q is the daughter-in-law of R
(E) None of these

483. In a certain code, $A!B$ means 'A is the son of B', $A\&B$ means 'A is the sister of B', $A\%B$ means 'A is the mother of B' and $A * B$ means 'A is the husband of B'. In the expression $K!L\%M\&N * O$, how is O related to K? [Difficult]

(A) Sister-in-law
(B) Brother-in-law
(C) Daughter-in-law
(D) Aunt
(E) None of these

2.5.3 Family-tree puzzles with generations [checked, 1 flagged]

484. Pointing to a photograph in his bank passbook folder, Rakesh said, "She is the daughter of the only son of my father's mother." How is the girl in the photograph related to Rakesh? [Easy]

(A) Sister
(B) Niece
(C) Cousin
(D) Aunt
(E) None of these

485. While filling a nomination form at a bank, Anita said about a customer, "Ramesh's mother is the only daughter of my mother." How is Anita related to Ramesh? [Easy]

(A) Sister
(B) Mother
(C) Aunt
(D) Grandmother
(E) None of these

486. Suresh is the son of Mahesh. Mahesh is the brother of Ganesh. Vikram is the son of Ganesh. How is Suresh related to Vikram? [Easy]

(A) Brother
(B) Nephew
(C) Uncle
(D) Cousin
(E) None of these

487. Deepa is the daughter of Vikram. Vikram is the only son of Harish. Sarla is the wife of Harish. How is Sarla related to Deepa? [Easy]

(A) Mother
(B) Aunt
(C) Mother-in-law
(D) Grandmother
(E) None of these

488. Introducing a man standing beside her at the branch counter, a woman said, "His wife is the only daughter of my father." How is the man related to the woman? [Easy]

(A) Brother
(B) Father
(C) Husband
(D) Son-in-law
(E) None of these

489. In a family, Mohan's son Rajat is married to Neha, and Isha is the daughter of Neha. How is Mohan related to Isha? [Easy]

(A) Father
(B) Brother
(C) Grandfather
(D) Great-grandfather
(E) None of these

490. Sunita is the granddaughter of Kailash. Kailash has only one child, Manoj, who is married to Rekha. How is Rekha related to Sunita? [Easy]

(A) Mother
(B) Aunt
(C) Grandmother
(D) Sister
(E) None of these

491. Pointing to a woman in a photograph, Anil said, "She is the mother of the wife of the only son of my father." How is the woman related to Anil? [Moderate]

(A) Mother
(B) Mother-in-law
(C) Sister-in-law
(D) Grandmother
(E) None of these

492. A family has six members A, B, C, D, E and F. A and B are a married couple, A being the male. C is the brother of B. D is the only son of C, E is the sister of D, and F is the wife of C. How is D related to A? [Moderate]

(A) Son
(B) Brother-in-law
(C) Nephew
(D) Cousin
(E) None of these

493. Rohit is the son of Ashok. Sarita, who is Ashok's sister, has a son Sonu and a daughter Rita. Raj is the maternal uncle of Sonu. How is Rita related to Rohit? [Moderate]

(A) Sister
(B) Niece
(C) Aunt
(D) Cousin
(E) None of these

494. Ramesh's father Girdhar has a brother named Suresh. Suresh's granddaughter Isha is married to Nakul, and their son is Tarun. How many generations of this family are mentioned in the passage? [Moderate]

(A) Two
(B) Three
(C) Four
(D) Five
(E) None of these

495. In a family, Q is the mother of R and P is the husband of Q. S is the son of Q, T is the wife of S, and U is the daughter of T. How is U related to R? [Moderate]

(A) Daughter
(B) Granddaughter
(C) Niece
(D) Sister
(E) None of these

496. Amit said to Bharti, "Your only brother's son is my wife's brother." How is Bharti related to Amit's wife? [Moderate]

(A) Mother
(B) Sister
(C) Grandmother
(D) Aunt
(E) None of these

497. A is the father of B. C is the daughter of B. D is the brother of C. E is the son of D. How is E related to A? [Moderate]

(A) Grandson
(B) Son
(C) Great-grandson
(D) Nephew
(E) None of these

498. Pointing to a lady in a photograph, Shashank said, "Her son's father is the son-in-law of my mother." How is Shashank related to the lady? [Difficult]

(A) Brother
(B) Cousin
(C) Uncle
(D) Father
(E) None of these

499. A family of seven members spans three generations and contains exactly two married couples. T is the granddaughter of P, and P is the husband of Q. Q is the mother-in-law of R, who is the mother of S and T. V is the son of Q's only son. How is V related to T? [Difficult]

(A) Brother
(B) Cousin
(C) Nephew
(D) Uncle
(E) Cannot be determined

500. A is the brother of B. C is the father of A. D is the sister of C. E is the mother of D. How is B related to E? [Difficult]

(A) Grandson
(B) Granddaughter
(C) Grandmother
(D) Daughter
(E) Cannot be determined

501. In a certain code of relationships, 'X @ Y' means X is the father of Y, 'X # Y' means X is the sister of Y, and 'X % Y' means X is the mother of Y. Given the expression 'P @ Q # R % S', how is P related to S? [Difficult]

(A) Father
(B) Paternal grandfather
(C) Maternal grandfather
(D) Maternal uncle
(E) None of these

502. A family of six persons A, B, C, D, E and F contains exactly two married couples. D is the grandmother of A and the mother of B. C is the wife of B and the mother of F. F is the granddaughter of E. How is A related to F? [Difficult]

(A) Brother
(B) Sister
(C) Cousin
(D) Brother or sister
(E) None of these

503. Introducing a boy who had come to collect a demand draft of Rs. 25,000, Preeti said, "His mother's only brother is my mother-in-law's only son." How is the boy related to Preeti's husband? [Difficult]

(A) Nephew
(B) Son
(C) Brother
(D) Cousin
(E) None of these

504. T is the only son of P, and P is married to Q. Q is the daughter of R, and R is the mother of S. S is the maternal uncle of U, and U is the daughter of V. How is T related to U? [Difficult]

(A) Brother
(B) Nephew
(C) Uncle
(D) Cousin
(E) Cannot be determined

Section 2.6

2.6.1 Direction sense [checked, 1 flagged]

505. Ramesh starts from his bank branch and walks 5 km towards north. He then turns right and walks 3 km, and again turns right and walks 5 km. How far and in which direction is he now from the branch? [Easy]

(A) 3 km, East
(B) 3 km, West
(C) 5 km, East
(D) 8 km, South
(E) None of these

506. Suman is standing at an ATM counter facing north. She turns 90° in the clockwise direction and then turns 180° in the anticlockwise direction. Which direction is she facing now? [Easy]

(A) North
(B) East
(C) South
(D) West
(E) South-East

507. At 7 AM Anil is standing outside a bank and notices that his shadow falls exactly to his right. Which direction is Anil facing? [Easy]

(A) North
(B) South
(C) East
(D) West
(E) Cannot be determined

508. Kavita cycles 12 km towards east from her house and then cycles 9 km towards north. What is the shortest distance between her present position and her house? [Easy]

(A) 21 km
(B) 18 km
(C) 15 km
(D) 13 km
(E) None of these

509. Branch B is 4 km east of branch A, and branch C is 4 km north of branch B. In which direction is branch C with respect to branch A? [Easy]

(A) North-West
(B) South-East
(C) North-East
(D) South-West
(E) Due North

510. A cash-van driver was driving towards south. He took a left turn, then a right turn, and then a left turn again. In which direction is the van moving now? [Easy]

(A) North
(B) South
(C) East
(D) West
(E) None of these

511. Rita leaves her home and walks 3 km north, then 4 km east, then 3 km south and finally 4 km west. How far is she from her home at the end? [Easy]

(A) 14 km
(B) 7 km
(C) 5 km
(D) 1 km
(E) She is back at her home

512. A bank officer starts from his office and walks 4 km towards north. He then turns right and walks 3 km, and again turns right and walks 8 km. How far is he from the office and in which direction? [Moderate]

(A) 5 km, South-East
(B) 5 km, North-East
(C) 7 km, South-East
(D) 11 km, South-West
(E) None of these

513. Deepak starts from a point facing east and walks 5 km. He turns right and walks 5 km, then turns right and walks 10 km, and finally turns left and walks 5 km. In which direction is he from his starting point? [Moderate]

(A) North-East
(B) North-West
(C) South-East
(D) South-West
(E) Due South

514. Point P is 8 m east of point Q. Point R is 6 m north of P. Point S is 8 m west of R. What is the distance and direction of S from Q? [Moderate]

(A) 6 m, North
(B) 6 m, South
(C) 10 m, North-East
(D) 14 m, North
(E) None of these

515. A loan-recovery agent walks 10 km towards south, then turns left and walks 5 km, then turns left and walks 4 km, and finally turns right and walks 3 km. How far is he from his starting point? [Moderate]

(A) 8 km
(B) 10 km
(C) 12 km
(D) 14 km
(E) 6 km

516. Arun and Bhavna start together from the same bank branch. Arun cycles 9 km towards north and then 12 km towards east. Bhavna cycles 5 km towards south and then 12 km towards east. How far apart are they now? [Moderate]

(A) 4 km
(B) 12 km
(C) 13 km
(D) 14 km
(E) None of these

517. Rakesh is facing South-West. He turns 135° in the clockwise direction and then turns 180° in the anticlockwise direction. Which direction is he facing now? [Moderate]

(A) North
(B) East
(C) West
(D) North-East
(E) None of these

518. In a certain code of directions, 'South-East' becomes 'North', 'North-East' becomes 'West', and so on. What will 'West' become in that code? [Moderate]

(A) North
(B) South
(C) North-East
(D) South-East
(E) South-West

519. A courier rider starts from a bank's regional office and rides 15 km towards north. He then turns right and rides 4 km, turns left and rides 3 km, turns right and rides 4 km, and finally turns right and rides 3 km. What is the shortest distance between his present position and the regional office? [Difficult]

(A) 15 km
(B) 17 km
(C) 19 km
(D) 23 km
(E) None of these

520. Manoj starts from point X, walks 30 m towards east, then turns left and walks 20 m, then turns left and walks 10 m and stops at point Y. Neha also starts from X, walks 10 m towards north, then turns right and walks 20 m and stops at point Z. What is the distance of Y from Z and in which direction does Y lie from Z? [Difficult]

(A) 10 m, South
(B) 10 m, North
(C) 20 m, North
(D) 20 m, North-East
(E) None of these

521. A security guard is facing North-West. He turns 45° clockwise, then 90° anticlockwise, then 135° clockwise, and finally 180° anticlockwise. Which direction is he facing at the end? [Difficult]

(A) North-East
(B) South-East
(C) South-West
(D) North-West
(E) West

522. A bank inspector leaves the head office and drives 15 km towards north. He then turns right and drives 20 km, turns right and drives 10 km, and finally turns right and drives 8 km. How far is he from the head office and in which direction? [Difficult]

(A) 13 km, North-East
(B) 13 km, South-East
(C) 17 km, North-East
(D) 25 km, Due North
(E) None of these

523. A cyclist rides 12 km from point A in the North-East direction and reaches point B. From B he rides 12 km in the South-East direction and reaches point C. What is the distance AC, and in which direction is C from A? [Difficult]

(A) 24 km, East
(B) $12\sqrt{2}$ km, East
(C) $12\sqrt{2}$ km, South-East
(D) 12 km, North-East
(E) None of these

524. Ankit walks a certain distance towards south, then turns left and walks 8 km, then turns left and walks 12 km. He now finds that he is 8 km east and 4 km north of his starting point. How far did he walk in the first (southward) stretch? [Difficult]

(A) 4 km
(B) 6 km
(C) 8 km
(D) 12 km
(E) 16 km

525. At sunrise Vikas stands in an open field with his back towards the sun. He walks straight 6 km, then turns right and walks 8 km, and then turns right again and walks 6 km. How far and in which direction is he from his starting point? [Difficult]

(A) 8 km, North
(B) 8 km, South
(C) 10 km, North-East
(D) 14 km, West
(E) None of these

2.6.2 Distance calculation, Pythagorean applications [checked]

526. Ramesh leaves his bank branch and walks 8 km towards East to meet a customer, and then walks 6 km towards North to reach a godown. How far is the godown from the bank branch? [Easy]

(A) 10 km
(B) 12 km
(C) 14 km
(D) 7 km
(E) None of these

527. A loan officer walks in a straight line from point A to point B, covering 25 m. Point B lies exactly 20 m due North of a point C, and C lies due East of A. What is the distance between A and C? [Easy]

(A) 5 m
(B) 12 m
(C) 15 m
(D) 18 m
(E) None of these

528. Sunita starts from the ATM and walks 20 m towards North, then turns around and walks 12 m towards South. How far is she now from the ATM, and in which direction? [Easy]

(A) 32 m, North
(B) 8 m, South
(C) 8 m, North
(D) 12 m, North
(E) None of these

529. A cash-van driver drives 5 km towards South from the currency chest and then 12 km towards East. If he could have driven straight from the chest to his present position, how much driving distance would he have saved? [Easy]

(A) 2 km
(B) 3 km
(C) 4 km
(D) 5 km
(E) None of these

530. Anil walks 10 m towards North and then 10 m towards East. What is his shortest distance from the starting point? [Easy]

(A) 20 m
(B) $10\sqrt{2}$ m
(C) $5\sqrt{2}$ m
(D) 10 m
(E) None of these

531. The regional office of a bank is situated 24 km due East and 7 km due South of the head office. What is the straight-line distance between the two offices? [Easy]

(A) 21 km
(B) 23 km
(C) 25 km
(D) 31 km
(E) None of these

532. Meena starts from her house, walks 6 km towards East, then 8 km towards North, and finally 6 km towards West. How far is she from her house? [Easy]

(A) 8 km
(B) 10 km
(C) 14 km
(D) 20 km
(E) None of these

533. Deepak leaves the bank and walks 4 km towards North, then 3 km towards East, then again 4 km towards North and finally 3 km towards East. How far is he from the bank? [Moderate]

(A) 7 km
(B) 10 km
(C) 12 km
(D) 14 km
(E) None of these

534. A field officer starts from the branch and moves 12 km towards East, then 9 km towards North, then 4 km towards West and finally 6 km towards North. What is his shortest distance from the branch? [Moderate]

(A) 17 km
(B) 19 km
(C) 21 km
(D) 15 km
(E) None of these

535. Two cash vans leave the same junction. The first goes 24 km due East to a branch and the second goes 10 km due South to another branch. If a direct road were built between the two branches, how much shorter would the journey between them be, compared with travelling via the junction? [Moderate]

(A) 6 km
(B) 8 km
(C) 10 km
(D) 12 km
(E) None of these

536. Point B is 4 km due North of point A. Point C is 3 km due East of B. Point D is 8 km due South of C. How far is D from A and in which direction? [Moderate]

(A) 5 km, North-East
(B) 5 km, South-East
(C) 7 km, South-East
(D) 5 km, South-West
(E) None of these

537. Priya walks 8 m towards West from the cash counter and then walks a certain distance towards North, after which she finds herself 17 m away from the cash counter. How far did she walk towards North? [Moderate]

(A) 9 m
(B) 12 m
(C) 15 m
(D) 18 m
(E) None of these

538. A bank's marketing executive walks 12 m towards North-East and then walks 12 m towards North-West. How far is he from his starting point and in which direction? [Moderate]

(A) 24 m, North
(B) $12\sqrt{2}$ m, North
(C) 12 m, North
(D) $12\sqrt{2}$ m, North-East
(E) None of these

539. A recovery agent cycles due South at 6 km/h for 40 minutes, then turns and cycles due West at 12 km/h for 15 minutes. How far is he from his starting point? [Moderate]

(A) 4 km
(B) 5 km
(C) 7 km
(D) 8 km
(E) None of these

540. Rajat starts from his branch facing North and walks 10 km. He then turns to his right and walks 6 km, turns to his right again and walks 30 km, then turns to his left and walks 6 km, and finally turns to his left and walks 4 km. How far is he from the branch and in which direction? [Difficult]

(A) 20 km, South-East
(B) 20 km, North-East
(C) 16 km, South-East
(D) 28 km, South-East
(E) None of these

541. Vikas and Sneha start together from the same office. Vikas walks 7 km East, then 4 km North, then 8 km East and then 4 km North. In the same time Sneha walks 7 km East and then 7 km South. What is the shortest distance between Vikas and Sneha at the end? [Difficult]

(A) 15 km
(B) 17 km
(C) 19 km
(D) 23 km
(E) None of these

542. A bank's staff quarters stand on a rectangular plot measuring 60 m by 80 m. A guard who has to go from one corner to the diagonally opposite corner walks along two sides of the plot instead of walking along the diagonal. If he walks at a uniform speed of 4 km/h, how much extra time does he take by not using the diagonal? [Difficult]

(A) 24 seconds
(B) 30 seconds
(C) 40 seconds
(D) 45 seconds
(E) None of these

543. Kavita walks a certain distance towards North and then walks 7 km more than that distance towards East, after which she is exactly 13 km away from her starting point. What is the total distance she has actually walked? [Difficult]

(A) 17 km
(B) 19 km
(C) 22 km
(D) 24 km
(E) None of these

544. Branch B is 15 km due North of branch A. Branch C is 20 km due East of B. Branch D is 15 km due South of C, and branch E is 21 km due South of D. How far is E from A and in which direction? [Difficult]

(A) 25 km, South-East
(B) 29 km, North-East
(C) 29 km, South-East
(D) 36 km, South-East
(E) None of these

545. A rectangular bank compound $ABCD$ has $AB = 16$ m and $BC = 6$ m, the vertices being taken in order. A security guard walks from corner A to the mid-point M of side CD, and then walks from M to corner B. What total distance does he walk? [Difficult]

(A) 20 m
(B) 22 m
(C) 24 m
(D) 26 m
(E) None of these

546. Two field staff of a bank start at the same moment from the same branch. Ramesh rides due North at 12 km/h and Suresh rides due East at 16 km/h. After how much time will the straight-line distance between them be 40 km? [Difficult]

(A) 1 hour 30 minutes
(B) 2 hours
(C) 2 hours 30 minutes
(D) 3 hours
(E) None of these

2.6.3 Coded and puzzle-based direction

[checked, 4 flagged]

547. In a certain code used by a bank's field-survey team, $A\#B$ means "A is 10 m to the north of B", $A@B$ means "A is 10 m to the south of B", $A!B$ means "A is 10 m to the east of B" and $A * B$ means "A is 10 m to the west of B". If $P\#Q$, then in which direction is Q with respect to P? [Easy]

(A) North
(B) South
(C) East
(D) West
(E) None of these

548. In a certain code, $X@Y$ means "X is 5 m to the north of Y" and $X * Y$ means "X is 5 m to the east of Y". If $K@L * M$ is true, then in which direction is K with respect to M? [Easy]

(A) North
(B) East
(C) South-east
(D) North-east
(E) None of these

549. Point A is 3 m to the west of point B, and point B is 3 m to the west of point C. How far and in which direction is A from C? [Easy]

(A) 6 m, west
(B) 3 m, east
(C) 6 m, east
(D) 9 m, west
(E) None of these

550. All the cashiers of a bank branch stand in a single straight row, every one of them facing north. Priya stands to the immediate left of Rohit. In which direction is Priya with respect to Rohit? [Easy]

(A) North
(B) East
(C) West
(D) South
(E) None of these

551. In a coded map, North is called East, East is called South, South is called West, and West is called North. A man says that he is walking towards the North. In which direction is he actually walking? [Easy]

(A) North
(B) South
(C) East
(D) West
(E) None of these

552. Five service counters A, B, C, D and E of a bank are placed along one straight east-west wall. B is to the east of A; C is to the west of A; D is to the east of B; and E lies between A and B. Which counter is the farthest towards the west? [Easy]

(A) A
(B) B
(C) C
(D) D
(E) E

553. A security guard on night duty is facing the south-west direction. He turns 90° in the anticlockwise direction. Which direction is he facing now? [Easy]

(A) North-east
(B) North-west
(C) West
(D) South-east
(E) None of these

554. In a certain code, $X@Y$ means "X is 3 m north of Y", $X\#Y$ means "X is 3 m south of Y", $X * Y$ means "X is 3 m east of Y" and $X!Y$ means "X is 3 m west of Y". If $P@Q * R\#S$ is true, how far and in which direction is P from S? [Moderate]

(A) 3 m, north
(B) 3 m, east
(C) 6 m, east
(D) $3\sqrt{2}$ m, north-east
(E) None of these

555. Point A is 12 m to the north of point B. Point C is 5 m to the east of point B. Point D is 12 m to the north of point C. Point E is 9 m to the east of point D. How far and in which direction is E from A? [Moderate]

(A) 14 m, east
(B) 9 m, east
(C) 14 m, north-east
(D) 5 m, east
(E) None of these

556. In a certain code, $X + Y$ means "Y is 5 m north of X", $X - Y$ means "Y is 5 m south of X", $X * Y$ means "Y is 5 m east of X" and X/Y means "Y is 5 m west of X". If $M + N * O * P - Q$ is true, how far and in which direction is M from Q? [Moderate]

(A) 10 m, east
(B) 5 m, west
(C) 10 m, west
(D) $10\sqrt{2}$ m, north-west
(E) None of these

557. In a certain coded system of directions, South-East is called North and North-East is called West. In the same system, what will West be called? [Moderate]

(A) South-East
(B) North-East
(C) South-West
(D) East
(E) None of these

558. Anil and Bhavna, two loan officers, leave their branch at the same moment from the same gate. Anil rides 6 km towards the east and then 8 km towards the north. Bhavna rides 4 km towards the west and then 8 km towards the north. At the end of their journeys, how far and in which direction is Anil from Bhavna? [Moderate]

(A) 10 km, west
(B) 2 km, east
(C) 10 km, east
(D) 14 km, east
(E) None of these

559. Point P is 4 m west of point Q. Point R is 6 m south of point Q. Point S is 4 m east of point R. Point T is 3 m north of point S. How far and in which direction is T from Q? [Moderate]

(A) 5 m, north-east
(B) 5 m, south-east
(C) 7 m, south-east
(D) 5 m, south-west
(E) None of these

560. The members of an audit team stand in a single straight row, all of them facing south. Kavita is to the immediate right of Manoj, and Manoj is to the immediate right of Nitin. In which direction is Nitin with respect to Kavita? [Moderate]

(A) North
(B) West
(C) South
(D) East
(E) None of these

561. In a certain code, $X@Y$ means "X is 3 m north of Y", $X\#Y$ means "X is 4 m east of Y", $X * Y$ means "X is 3 m south of Y" and $X!Y$ means "X is 4 m west of Y". If $A@B\#C * D!E$ is true, what is the shortest distance between A and E? [Difficult]

(A) 5 m
(B) 7 m
(C) 0 m; A and E are at the same point
(D) 3 m
(E) None of these

562. In a coded system of directions, North-East is called South and East is called South-West. A courier who uses this system says he is riding towards the West; after some time he makes an actual physical turn of 90° in the clockwise direction and rides on. In which real direction is he riding at the end? [Difficult]

(A) South-east
(B) South-west
(C) North-east
(D) North-west
(E) None of these

563. Rakesh leaves his house and walks 15 m towards the east. He then turns north and walks 8 m, turns west and walks 5 m, turns south and walks 8 m, turns west and walks 4 m, and finally turns north and walks 8 m. How far is he now from his house? [Difficult]

(A) 8 m
(B) 6 m
(C) 14 m
(D) 10 m
(E) None of these

564. Point P is 8 m to the north of point Q. Point R is 6 m to the west of point P. Point S is 10 m to the south of point R. Point T is 6 m to the east of point S. How far and in which direction is T from Q? [Difficult]

(A) 4 m, south
(B) 2 m, south
(C) 2 m, north
(D) 10 m, south-west
(E) None of these

565. A bank inspector is standing so that he faces the north-east direction. He first turns 135° in the clockwise direction, then turns 180° in the anticlockwise direction, and finally turns 90° in the clockwise direction. Which direction is he facing at the end? [Difficult]

(A) West
(B) South
(C) East
(D) North-west
(E) None of these

566. Vikram and Anjali start together from their bank's head office. Vikram cycles 9 km towards the north and then 12 km towards the east, where he stops. Anjali drives 5 km towards the south, then 12 km towards the east, and then 26 km towards the north, where she stops. At that moment, how far and in which direction is Anjali from Vikram? [Difficult]

(A) 12 km, north
(B) 16 km, north
(C) 12 km, south
(D) 21 km, north
(E) None of these

567. In a certain code, $M + N$ means "M is 6 m south of N", $M - N$ means "M is 6 m east of N", $M * N$ means "M is 6 m north of N" and M/N means "M is 6 m west of N". If $P + Q - R - S * T$ is true, how far and in which direction is P from T? [Difficult]

(A) 6 m, east
(B) 12 m, north-east
(C) 12 m, west
(D) 18 m, east
(E) None of these

Section 2.7

2.7.1 Rank from top/bottom, left/right

[checked, 1 flagged]

568. In a batch of 40 probationary officers under training at a bank academy, Ravi's rank in the final assessment is 12th from the top. What is his rank from the bottom? [Easy]

(A) 27th
(B) 28th
(C) 29th
(D) 30th
(E) None of these

569. 25 employees of a bank branch stand in a single row for a photograph. Sunita is 9th from the left end of the row. What is her position from the right end? [Easy]

(A) 18th
(B) 17th
(C) 16th
(D) 19th
(E) None of these

570. In a merit list of a recruitment test, Anil's rank is 7th from the top and 18th from the bottom. How many candidates are there in the merit list? [Easy]

(A) 24
(B) 25
(C) 23
(D) 26
(E) None of these

571. Meena is standing in a queue at a bank cash counter. She is 11th from the front of the queue, and there are exactly 6 persons standing behind her. How many persons are there in the queue altogether? [Easy]

(A) 19
(B) 18
(C) 17
(D) 16
(E) None of these

572. In a training class of 45 trainees, Deepak's rank is 22nd from the bottom. What is his rank from the top? [Easy]

(A) 22nd
(B) 23rd
(C) 25th
(D) 26th
(E) None of these

573. 20 girls are standing in a single row facing north. Kavita is 8th from the left end and Rekha is 9th from the right end. How many girls are standing between Kavita and Rekha? [Easy]

(A) 2
(B) 3
(C) 4
(D) 5
(E) None of these

574. In a row of 32 candidates waiting for an interview, Pooja is 14th from the left end. If she is shifted 5 places towards the right, what will be her new position from the left end? [Easy]

(A) 19th
(B) 20th
(C) 18th
(D) 21st
(E) None of these

575. In a row of 27 girls standing in a single line facing north, Anita is 18th from the left end and Babita is 13th from the right end. How many girls are standing between Anita and Babita? [Moderate]

(A) 2
(B) 3
(C) 4
(D) 5
(E) None of these

576. In a row of 45 students, Rahul is 18th from the left end and Sameer is 25th from the right end. If Rahul and Sameer interchange their positions, what will be Sameer's new position from the right end? [Moderate]

(A) 27th
(B) 28th
(C) 29th
(D) 26th
(E) None of these

577. In a single row of employees, Nisha is 12th from the left end and 22nd from the right end. Priya stands 15th from the left end of the same row. What is Priya's position from the right end? [Moderate]

(A) 21st
(B) 20th
(C) 19th
(D) 18th
(E) None of these

578. In a written examination taken by 60 candidates, Sanjay's rank is 17th from the top. Later it was found that 9 candidates who had ranked above Sanjay had used unfair means and their results were cancelled. What is Sanjay's rank from the top in the revised list? [Moderate]

(A) 8th
(B) 9th
(C) 7th
(D) 10th
(E) None of these

579. Gopal is standing in a row of boys. He is 19th from the left end and 10th from the right end of that row. How many more boys must join the row so that the row contains 35 boys in all? [Moderate]

(A) 8
(B) 7
(C) 6
(D) 5
(E) None of these

580. In a row of 50 persons standing outside an ATM, Kiran is 15th from the left end. Lalit stands somewhere to the right of Kiran, and exactly 12 persons stand between Kiran and Lalit. What is Lalit's position from the right end? [Moderate]

(A) 23rd
(B) 24th
(C) 22nd
(D) 25th
(E) None of these

581. In a queue at a bank's passbook-printing counter, Rekha is 10th from the front. Suresh stands exactly 5 places behind Rekha, and Suresh is 7th from the end of the queue. How many persons are standing in the queue? [Moderate]

(A) 18
(B) 19
(C) 20
(D) 21
(E) None of these

582. In a departmental promotion test, Rohit's rank among the successful candidates is 16th from the top and 29th from the bottom. Besides the successful candidates, 3 candidates failed the test and 5 candidates who had registered remained absent. How many candidates had registered for the test in all? [Difficult]

(A) 49
(B) 50
(C) 51
(D) 52
(E) None of these

583. Two rows of 25 trainees each, Row A and Row B, are seated facing each other, so that the trainee at the left end of Row A sits exactly opposite the trainee at the right end of Row B. In Row A, Tarun is 9th from the left end, and Vandana of Row B sits exactly opposite Tarun. Anil sits in Row B, 4 seats away from Vandana towards the left end of Row B. What is Anil's position from the left end of Row B? [Difficult]

(A) 12th
(B) 13th
(C) 14th
(D) 11th
(E) None of these

584. In a row of 55 employees, Deepa is 24th from the left end and Farhan is 30th from the right end. Deepa and Farhan then interchange their positions. After the interchange, how many employees are seated between Deepa and Farhan? [Difficult]

(A) 3
(B) 2
(C) 1
(D) 0
(E) None of these

585. In a class of 65 students, Mohan's rank in Mathematics is 27th from the top, and his rank in English is 27th from the bottom. No two students share a rank in either subject. If X is Mohan's Mathematics rank from the bottom and Y is his English rank from the top, what is the value of $X - Y$? [Difficult]

(A) 0
(B) 1
(C) 2
(D) 12
(E) None of these

586. 39 persons are standing in a single row outside a bank. Kamal is 17th from the left end. Then 6 more persons join the row at the left end, and 4 persons standing at the right end leave the row. What is Kamal's new position from the right end? [Difficult]

(A) 20th
(B) 19th
(C) 18th
(D) 21st
(E) None of these

587. In a class of 46 students, Neha, who is a girl, ranks 12th from the top in the annual examination. Among the students ranked above Neha, 5 are girls, and among the students ranked below her, 14 are girls. What is Neha's rank from the bottom among the girls of the class? [Difficult]

(A) 14th
(B) 16th
(C) 20th
(D) 15th
(E) None of these

588. In a merit list of a bank recruitment test, Sneha's rank is 9th from the top and Tarun's rank is 15th from the bottom. Exactly 4 candidates are ranked between Sneha and Tarun. What is the minimum possible number of candidates in the merit list? [Difficult]

(A) 18
(B) 23
(C) 28
(D) 13
(E) None of these

2.7.2 Comparison of heights, ages, weights [checked, 2 flagged]

589. Five colleagues in a bank branch have different heights. Amit is taller than Bhavna but shorter than Chetan. Divya is taller than Chetan but shorter than Esha. Who among them is the tallest? [Easy]

(A) Amit
(B) Chetan
(C) Divya
(D) Esha
(E) None of these

590. Rohit is older than Sanjay but younger than Tarun. Umesh is younger than Sanjay. Who is the youngest among the four? [Easy]

(A) Rohit
(B) Sanjay
(C) Tarun
(D) Umesh
(E) Cannot be determined

591. Four sacks of grain W, X, Y and Z have different weights. No sack is heavier than W. Sack Y is heavier than Z but lighter than X. Which sack is the second heaviest? [Easy]

(A) W
(B) X
(C) Y
(D) Z
(E) Cannot be determined

592. Priya is 4 years older than Meena. Meena is 3 years younger than Nisha. If Nisha is 26 years old, what is Priya's age? [Easy]

(A) 23 years
(B) 25 years
(C) 27 years
(D) 29 years
(E) None of these

593. Eight probationary officers are made to stand in a single line arranged in increasing order of height. Kavita is third from the shortest end. What is her position from the tallest end? [Easy]

(A) Fourth
(B) Fifth
(C) Sixth
(D) Seventh
(E) None of these

594. Six cash boxes of different weights are kept in a strong room. Box F is heavier than exactly three of the other boxes. How many boxes are heavier than box F? [Easy]

(A) One
(B) Two
(C) Three
(D) Four
(E) None of these

595. Among five bank trainees: Anil is taller than Bipin, Charu is taller than Anil, Deepak is shorter than Bipin, and Ekta is taller than Charu. Who is the second tallest? [Easy]

(A) Anil
(B) Bipin
(C) Deepak
(D) Ekta
(E) None of these

596. Aarti is 5 years older than Bhuvan. Bhuvan is twice as old as Chirag. If the sum of the ages of the three is 55 years, what is Aarti's present age? [Moderate]

(A) 20 years
(B) 22 years
(C) 25 years
(D) 28 years
(E) None of these

597. Among five employees, Ramesh is 8 cm taller than Sudha, Tanvi is 5 cm shorter than Sudha, Uday is 12 cm taller than Tanvi and Vikram is 3 cm shorter than Ramesh. If Sudha is 160 cm tall, who is the tallest and what is that height? [Moderate]

(A) Ramesh, 168 cm
(B) Uday, 167 cm
(C) Ramesh, 170 cm
(D) Vikram, 165 cm
(E) None of these

598. Four cartons A, B, C and D are weighed at a warehouse. Carton A is 4 kg heavier than B, carton C is 6 kg lighter than A, and carton D is 3 kg heavier than C. If B weighs 48 kg, what is the weight of the third heaviest carton? [Moderate]

(A) 46 kg
(B) 48 kg
(C) 49 kg
(D) 52 kg
(E) None of these

599. In a line of candidates standing in order of height, Suresh is 12th from the tallest end and 18th from the shortest end. Three more candidates now join the line, each of them taller than Suresh. What is Suresh's new position from the tallest end? [Moderate]

(A) 13th
(B) 14th
(C) 15th
(D) 16th
(E) None of these

600. Ten years ago, Manoj was three times as old as Naveen. At present Manoj is twice as old as Naveen. What is Manoj's present age? [Moderate]

(A) 30 years
(B) 36 years
(C) 40 years
(D) 44 years
(E) None of these

601. Five persons of different weights are compared. Kiran is heavier than Lalit. Manish is heavier than Naveen. Om is heavier than Kiran but lighter than Manish. Who is the second heaviest among them? [Moderate]

(A) Kiran
(B) Om
(C) Naveen
(D) Lalit
(E) Cannot be determined

602. Anita weighs 58 kg, which is 6 kg more than Babita. Chhaya weighs 4 kg less than Babita, and Divya's weight is 3 kg more than the average of Babita's and Chhaya's weights. Who is the third heaviest among them and what is that weight? [Moderate]

(A) Babita, 52 kg
(B) Divya, 53 kg
(C) Chhaya, 48 kg
(D) Divya, 50 kg
(E) None of these

603. The present ages of Rakesh and Suman are in the ratio 5 : 4. Eight years from now their ages will be in the ratio 6 : 5. What will be the sum of their ages 5 years from now? [Difficult]

(A) 72 years
(B) 77 years
(C) 80 years
(D) 82 years
(E) None of these

604. In a group of persons of different heights, Ravi ranks 7th from the tallest end and Sunil ranks 9th from the shortest end. Ravi is taller than Sunil and exactly 5 persons stand between them in the height order. How many persons are there in the group? [Difficult]

(A) 19
(B) 20
(C) 21
(D) 22
(E) None of these

605. The average weight of five cartons is 62 kg. The heaviest carton weighs 78 kg and the lightest weighs 45 kg. All five weights are distinct whole numbers in kilograms. What is the maximum possible weight of the third heaviest carton? [Difficult]

(A) 62 kg
(B) 64 kg
(C) 65 kg
(D) 66 kg
(E) None of these

606. The present age of a bank manager is 3 years more than three times the age of his son. Three years hence, the manager's age will be 10 years more than twice the age of his son. What is the manager's present age? [Difficult]

(A) 30 years
(B) 33 years
(C) 36 years
(D) 39 years
(E) None of these

607. Six friends have different weights. Chandan is heavier than only two of them. Bharat is heavier than Chandan but lighter than Esha. Deepa is lighter than Chandan. Farhan is heavier than Esha. Amit is heavier than Deepa. Who among them is heavier than exactly one friend? [Difficult]

(A) Amit
(B) Bharat
(C) Chandan
(D) Deepa
(E) None of these

608. The average age of a family of five members is 28 years. If the youngest member is 8 years old, what was the average age of the family at the time of the birth of the youngest member? [Difficult]

(A) 20 years
(B) 23 years
(C) 25 years
(D) 26 years
(E) None of these

609. In a batch of 45 trainees standing in order of weight, Rahul is 19th from the lightest end. Later, 6 trainees who are lighter than Rahul and 10 trainees who are heavier than Rahul leave the batch. What is Rahul's position from the heaviest end after they leave? [Difficult]

(A) 13th
(B) 15th
(C) 17th
(D) 19th
(E) None of these

2.7.3 Combined ranking puzzles [checked, 1 flagged]

610. In a single row of 40 employees standing for a fire drill at a Punjab National Bank branch, Rohit is 17th from the left end of the row. What is his position from the right end? [Easy]

(A) 24th
(B) 25th
(C) 26th
(D) 27th
(E) None of these

611. In a merit list prepared after an internal promotion test, Priya's rank is 12th from the top and 21st from the bottom. No two candidates share a rank and no rank is vacant. How many candidates appeared in the test? [Easy]

(A) 30
(B) 31
(C) 32
(D) 33
(E) None of these

612. Customers are standing in a single queue at a bank cash counter. Suresh is 7th from the front of the queue and Mahesh is 15th from the front of the same queue. How many customers are standing between Suresh and Mahesh? [Easy]

(A) 4
(B) 5
(C) 6
(D) 7
(E) None of these

613. In a row of 25 candidates waiting for a document verification round, Anil is 8th from the left end. Kavita is sitting 6th to the right of Anil. What is Kavita's position from the right end of the row? [Easy]

(A) 11th
(B) 12th
(C) 13th
(D) 14th
(E) None of these

614. Ramesh is standing 11th from the left end and 20th from the right end of a row of trainees. If 5 more trainees now join the row at the left end, how many trainees are there in the row? [Easy]

(A) 32
(B) 33
(C) 34
(D) 35
(E) None of these

615. In a row of 30 employees, Mohan is 12th from the left end and Sohan is 12th from the right end. How many employees are standing between Mohan and Sohan? [Easy]

(A) 6
(B) 7
(C) 8
(D) 9
(E) None of these

616. Among five clerks of a bank branch, the salary of Rakesh is more than that of Sunil but less than that of Mohit. The salary of Deepa is more than that of Mohit but less than that of Vinod. All five salaries are different. Who draws the second highest salary? [Easy]

(A) Mohit
(B) Deepa
(C) Vinod
(D) Rakesh
(E) Sunil

617. In a row of 45 candidates appearing for an interview, Ravi is 22nd from the left end. Meena is sitting 8th to the right of Ravi, and Sonia is sitting 5th to the left of Meena. What is Sonia's position from the right end of the row? [Moderate]

(A) 19th
(B) 20th
(C) 21st
(D) 22nd
(E) None of these

618. In a row of employees, Anil is 12th from the left end and Sunil is 15th from the right end. If Anil and Sunil interchange their positions, Anil becomes 22nd from the left end. How many employees are there in the row? [Moderate]

(A) 36
(B) 37
(C) 38
(D) 39
(E) None of these

619. In a row of 52 employees standing for a group photograph, Kiran is 19th from the left end and Pooja is 26th from the right end. How many employees are standing between Kiran and Pooja?[Moderate]

(A) 5
(B) 6
(C) 8
(D) 9
(E) None of these

620. In a row of persons, Amit is 10th from the left end and 15th from the right end. Bina is 12th from the right end of the same row. How many persons are sitting between Amit and Bina? [Moderate]

(A) 1
(B) 2
(C) 3
(D) 4
(E) Cannot be determined

621. Five branches P, Q, R, S and T of a bank have different numbers of ATMs. R has more ATMs than P and S, but fewer than Q. T has more ATMs than Q. S has more ATMs than P. If P has 120 ATMs and Q has 260 ATMs, which of the following can be the number of ATMs with R? [Moderate]

(A) 110
(B) 275
(C) 305
(D) 230
(E) 260

622. In a merit list of 90 probationary officers, Sanjay's rank is 34th from the top. Vandana's rank from the bottom is exactly the same number as Sanjay's rank from the top. What is Vandana's rank from the top? [Moderate]

(A) 56th
(B) 57th
(C) 58th
(D) 59th
(E) None of these

623. In a row of 35 employees, Nitin is 14th from the left end. Later, 3 employees standing to the left of Nitin and 4 employees standing to the right of Nitin leave the row, the rest keeping their relative order. What is Nitin's new position from the right end? [Moderate]

(A) 16th
(B) 17th
(C) 18th
(D) 19th
(E) None of these

624. In a row of 60 employees all facing north, Ramesh is 25th from the left end and Sheela is 20th from the right end. Tarun is standing exactly midway between Ramesh and Sheela. What is Tarun's position from the right end? [Difficult]

(A) 26th
(B) 27th
(C) 28th
(D) 29th
(E) None of these

625. Six employees of a bank branch – Anita, Bhaskar, Chetan, Dinesh, Esha and Farhan – draw different salaries. Chetan draws more than Anita and also more than Dinesh. Bhaskar draws more than Chetan. Anita draws more than Esha, and Esha draws more than Farhan. Dinesh draws more than Esha. How many of these employees definitely draw a higher salary than Dinesh? [Difficult]

(A) 1
(B) 2
(C) 3
(D) 4
(E) Cannot be determined

626. In a class of trainee clerks, Ankit's rank is 17th from the top and Bhavna's rank is 12th from the bottom. Exactly 6 trainees rank between Ankit and Bhavna, and Ankit ranks above Bhavna. No two trainees share a rank. How many trainees are there in the class? [Difficult]

(A) 35
(B) 36
(C) 37
(D) 38
(E) None of these

627. In a row of 30 persons standing at a bank's token counter, Mira is 12th from the left end and Naveen is 9th from the right end. Om is standing somewhere between Mira and Naveen. What is Om's position from the left end? [Difficult]

(A) 16th
(B) 17th
(C) 18th
(D) Either 16th or 17th
(E) Cannot be determined

628. There are 48 customers standing in a single queue at a bank. Rohan is 19th from the front of the queue. After some time, 7 customers standing ahead of Rohan are served and leave the queue, and meanwhile 5 new customers join the queue at the back. What is Rohan's new position from the back of the queue? [Difficult]

(A) 33rd
(B) 34th
(C) 35th
(D) 36th
(E) None of these

629. In a single row of employees, the number of employees standing to the left of Sameer is one-third of the number of employees standing to his right. If Sameer is 16th from the left end of the row, how many employees are there in the row? [Difficult]

(A) 60
(B) 61
(C) 62
(D) 63
(E) None of these

630. Seven friends appeared for a banking mock test and all scored different marks. Ravi scored more than Sunil but less than Tarun. Umesh scored more than Tarun but less than Vijay. Wasim scored less than Sunil but more than Yash. Who scored the fourth highest marks? [Difficult]

(A) Tarun
(B) Ravi
(C) Sunil
(D) Umesh
(E) Wasim

Section 2.8

2.8.1 Alphanumeric series

[checked, 1 flagged]

631. Study the following arrangement carefully and answer the question given below.
7 *B* @ 3 *K* # 9 *M* 5 % *T* 2 $ *P* 8
How many such digits are there in the above arrangement, each of which is immediately followed by a letter? [Easy]

(A) One
(B) Two
(C) Three
(D) Four
(E) None of these

632. A bank's token machine prints the following sequence of characters on a slip.
M 4 % *K* 7 @ *P* 2 # *R* 9 *B* $ 5 *T*
Which element is sixth to the right of the fourth element from the left end? [Easy]

(A) *R*
(B) 9
(C) 2
(D) #
(E) *B*

633. Study the following arrangement and answer the question below.
5 *J* # 8 @ *Q* 3 *L* % 6 *N* $ 2 *W* 7 &

How many such symbols are there in the above arrangement, each of which is immediately preceded by a digit? [Easy]

(A) One
(B) Two
(C) Three
(D) Four
(E) None of these

634. Study the following arrangement and answer the question below.
@ D 5 # K 2 % R 8 M \$ 4 & T 6 P
How many such letters are there in the above arrangement, each of which is immediately preceded by a symbol? [Easy]

(A) Four
(B) Five
(C) Six
(D) Seven
(E) None of these

635. Study the following arrangement and answer the question below.
K 3 @ M 7 # P 9 \$ R 2 % T 5 B
Which element is fifth from the right end of the arrangement? [Easy]

(A) R
(B) %
(C) 2
(D) T
(E) 5

636. Study the following arrangement and answer the question below.
B 4 # 7 K @ 2 M % 5 \$ N 8 & T 3
How many such digits are there in the above arrangement, each of which is immediately followed by a symbol? [Easy]

(A) One
(B) Two
(C) Four
(D) Five
(E) None of these

637. Study the following arrangement and answer the question below.
P 2 @ K 5 # M 7 \$ R 3 % T 9 & W
If all the symbols are dropped from the arrangement, which element will be sixth from the left end? [Easy]

(A) M
(B) R
(C) 7
(D) 5
(E) 3

638. Study the following arrangement carefully and answer the question given below.
M 4 @ 7 K 2 # P % 9 T 5 \$ B & 3 N 8
How many such digits are there in the above arrangement, each of which is immediately preceded by a letter and immediately followed by a symbol? [Moderate]

(A) None
(B) One
(C) Two
(D) Three
(E) Four

639. Study the following arrangement carefully and answer the question given below.
@ K 5 R # M 3 B % 7 P \$ T 2 & W 9 D
How many such letters are there in the above arrangement, each of which is immediately preceded by a symbol and immediately followed by a digit? [Moderate]

(A) One
(B) Two
(C) Three
(D) Four
(E) None of these

640. Study the following arrangement and answer the question below.
3 K @ 7 M # 2 P % R 5 \$ 9 T & B
Which element is exactly midway between the fourth element from the left end and the twelfth element from the left end? [Moderate]

(A) 2
(B) P
(C) %
(D) R
(E) 9

641. Study the following arrangement and answer the question below.
5 R @ 2 K # 7 M % 3 P \$ 9 T & 4 B
If all the digits are dropped from the arrangement, which element will be fourth to the right of the third element from the left end of the new arrangement? [Moderate]

(A) P
(B) M
(C) %
(D) \$
(E) T

642. Study the following arrangement carefully and answer the question given below.
@ 5 # K % 2 \$ M 7 & T # 9 P @ 3
How many elements are there in the above arrangement, each of which is immediately preceded as well as immediately followed by a symbol? [Moderate]

(A) Two
(B) Three
(C) Four
(D) Five
(E) None of these

643. Study the following arrangement and answer the question below.
K 4 @ 9 # M 2 P % 7 \$ T 5 & B 3 W 8
How many elements are there between the third symbol from the left end and the second digit from the right end? [Moderate]

(A) Three
(B) Four
(C) Five
(D) Six
(E) Seven

644. In a coded filing system used by a branch office of a bank, the folder labels run as follows: $B2D$, $F6H$, $J10L$, ... Which label comes next in the series? [Moderate]

(A) $M12O$
(B) $N14P$
(C) $N13P$
(D) $M14P$
(E) None of these

645. Study the following arrangement carefully and answer the question given below.
M 3 @ K 7 # P 2 % R 5 \$ T 9 &
If the positions of the first and the tenth elements are interchanged, similarly the positions of the second and the ninth, the third and the eighth, the fourth and the seventh, and the fifth and the sixth elements are interchanged, then which element will be fourth to the left of the ninth element from the left end? [Difficult]

(A) P
(B) 7
(C) K
(D) #
(E) 2

646. Study the following arrangement carefully and answer the question given below.
7 @ K 3 % M \$ 5 T # 2 & B 9 P @ 4 R
How many such symbols are there in the above arrangement, each of which is immediately preceded by a digit and immediately followed by a letter? [Difficult]

(A) Two
(B) Three
(C) Four
(D) Five
(E) None of these

647. Study the following arrangement carefully and answer the question given below.
4 K @ 9 M 3 # P 7 % 1 T \$ 6 B & 5 R 2 N
If all the digits which are perfect squares are dropped from the arrangement, which element will be fifth to the right of the sixth element from the left end of the new arrangement? [Difficult]

(A) T
(B) \$
(C) B
(D) 7
(E) 6

648. The reference codes of a bank's record cabinets run in the order $D4G$, $H9K$, $L16O$, ... What should the fourth code in this series be? [Difficult]

(A) $P25S$
(B) $P24S$
(C) $O25R$
(D) $P25R$
(E) None of these

649. Study the following arrangement carefully and answer the question given below.
K 5 @ M 3 P # 7 R % T 2 6 B \$ 9 W N 4 @ D
If all the symbols are dropped from the arrangement, how many such digits will there be in the resulting arrangement, each of which is immediately preceded by a letter and immediately followed by a letter? [Difficult]

(A) Three
(B) Four
(C) Five
(D) Six
(E) None of these

650. Study the following arrangement carefully and answer the question given below.
3 M @ K 7 P # 2 T % 5 B \$ R 9 W & N 4 D
If the entire arrangement is written in the reverse order, how many such letters will there be in the new arrangement, each of which is immediately followed by a digit? [Difficult]

(A) Five
(B) Six
(C) Seven
(D) Eight
(E) None of these

651. Study the following arrangement carefully and answer the question given below.
P 4 @ 9 K # M 2 % T 5 \$ B 7 & R 3 W @ 8
If all the symbols are dropped from the arrangement and the remaining elements are then written in the reverse order, which element will be eighth from the left end? [Difficult]

(A) T
(B) B
(C) 5
(D) 2
(E) 7

2.8.2 Alphabet series and letter positions [checked, 4 flagged]

652. In a training module at a bank branch, Ramesh is asked to name the letter which is 5th to the right of the 12th letter from the left end of the English alphabet. Which letter should he name? [Easy]

(A) P
(B) Q
(C) R
(D) S
(E) None of these

653. Find the missing term in the series: AZ, BY, CX, DW, ? [Easy]

(A) EU
(B) FV
(C) EV
(D) EW
(E) None of these

654. If every letter is given its serial number in the English alphabet ($A = 1$, $B = 2$, and so on), what is the sum of the positional values of the letters of the word $BANK$? [Easy]

(A) 26
(B) 27
(C) 29
(D) 30
(E) None of these

655. Which letter should come next in the series C, F, I, L, ? [Easy]

(A) P
(B) N
(C) M
(D) O
(E) None of these

656. Which letter lies exactly midway between the 8th letter and the 18th letter of the English alphabet (counting from the left in both cases)? [Easy]

(A) L
(B) M
(C) N
(D) K
(E) None of these

657. Using the standard opposite-letter (EJOTY) rule, which letter is opposite to G in the English alphabet? [Easy]

(A) T
(B) S
(C) U
(D) R
(E) None of these

658. Find the next term of the series: B, D, G, K, ? [Easy]

(A) N
(B) O
(C) Q
(D) P
(E) None of these

659. If the letters of the word $BANKING$ are arranged in alphabetical order from left to right, which letter will be third from the right end of the new arrangement? [Moderate]

(A) I
(B) N
(C) K
(D) G
(E) None of these

660. Which letter of the English alphabet is 9th to the left of the letter which is 4th from the right end? [Moderate]

(A) M
(B) O
(C) P
(D) N
(E) None of these

661. Find the missing term in the series: AC, FH, KM, PR, ? [Moderate]

(A) UV
(B) TV
(C) VX
(D) UX
(E) None of these

662. In the word $DEPOSIT$, each consonant is replaced by the letter immediately preceding it in the alphabet and each vowel is replaced by the letter immediately following it. If the resulting seven letters are then arranged in alphabetical order, which letter will be third from the left? [Moderate]

(A) F
(B) J
(C) O
(D) P
(E) None of these

663. A bank's internal filing system gives every word a code value equal to the sum of the alphabet positions of its letters ($A = 1$, $B = 2$, …, $Z = 26$). By how much does the code value of $CREDIT$ exceed that of $DEBIT$? [Moderate]

(A) 17
(B) 18
(C) 19
(D) 21
(E) None of these

664. Find the next term in the series: Z, W, S, N, ? [Moderate]

(A) I
(B) G
(C) J
(D) H
(E) None of these

665. How many pairs of letters are there in the word $BANKERS$ which have as many letters between them in the word as they have between them in the English alphabet (counting in both forward and backward directions)? [Moderate]

(A) One
(B) Two
(C) Three
(D) Four
(E) More than four

666. The first half of the English alphabet (the letters A to M) is written in reverse order while the second half is left unchanged. In the new arrangement, which letter is 6th to the left of the letter which is 8th to the right of the 5th letter from the left end? [Difficult]

(A) F
(B) G
(C) H
(D) B
(E) None of these

667. All the letters of the word $RECOVERY$ are arranged in alphabetical order from left to right. In this new arrangement, which letter is third to the left of the fourth letter from the right end? [Difficult]

(A) C
(B) O
(C) R
(D) E
(E) None of these

668. Each letter of the word $AUDIT$ is replaced by the letter three places ahead of it in the English alphabet, and the five new letters are then arranged in alphabetical order. What is the sum of the positional values of the first and the last letters of this new arrangement? [Difficult]

(A) 26
(B) 27
(C) 28
(D) 31
(E) None of these

669. Find the next term of the series: B, E, J, Q, ? [Difficult]

(A) W
(B) X
(C) Y
(D) Z
(E) None of these

670. Find the next term of the series: A, C, F, D, K, E, ? [Difficult]

(A) P
(B) O
(C) Q
(D) L
(E) None of these

671. The English alphabet is written in the reverse order, that is, from Z to A. In this reversed arrangement, which letter is 7th to the right of the 15th letter from the left end? [Difficult]

(A) E
(B) D
(C) F
(D) G
(E) None of these

672. The letters of the word $PORTFOLIO$ are rearranged in alphabetical order from left to right. How many letters then remain in the same position as they occupied in the original word? [Difficult]

(A) One
(B) Two
(C) Three
(D) Four
(E) None of these

2.8.3 Number-symbol arrangement (counting questions) [checked]

673. In a data-entry test conducted by Canara Bank, the following arrangement of digits, letters and symbols was displayed on the screen: 4 @ R 9 # T 2 % 7 M & 5 ! P 3 * K How many digits are there in the arrangement, each of which is immediately followed by a symbol? [Easy]

(A) 3
(B) 4
(C) 5
(D) 6
(E) None of these

674. Study the following arrangement carefully: M 3 @ P 7 % 2 K # B 5 ! 9 T & R 6 * D How many letters are there in the arrangement, each of which is immediately preceded by a symbol? [Easy]

(A) 3
(B) 4
(C) 5
(D) 6
(E) None of these

675. A bank's password generator produced the string given below: 8 & L 2 @ 5 P # 4 Q 7 % M ! 3 B * 6 How many symbols are there in the string, each of which is immediately followed by a digit? [Easy]

(A) 2
(B) 3
(C) 4
(D) 5
(E) None of these

676. Study the following arrangement carefully: K 4 @ 9 M # 3 & 7 B % 2 T R 5 ! N 8 How many digits are there in the arrangement, each of which is immediately preceded by a letter? [Easy]

(A) 2
(B) 3
(C) 4
(D) 5
(E) None of these

677. Study the following arrangement carefully: 9 # P 4 M @ T 7 & R 2 % B K 5 ! D 3 * F 8 How many letters are there in the arrangement, each of which is immediately preceded by a symbol and immediately followed by a digit? [Easy]

(A) 3
(B) 4
(C) 5
(D) 6
(E) None of these

678. Study the following arrangement carefully: T @ 5 K # 8 R 3 % M & 2 P ! 7 Q * 6 B How many symbols are there in the arrangement, each of which is immediately preceded by a letter? [Easy]

(A) 2
(B) 3
(C) 4
(D) 5
(E) None of these

679. The following sequence appeared on a bank's token-printing machine: 3 5 @ 7 K 2 4 # 9 8 M % 6 1 T & 4 R 5 2 How many such pairs of adjacent elements are there in the sequence in which a digit is immediately followed by another digit? [Easy]

(A) 4
(B) 5
(C) 6
(D) 7
(E) None of these

680. Study the following arrangement carefully: 5 @ K 3 # M 8 % 2 R & T 7 ! B 4 * 9 P Q 6 If all the symbols are dropped from the arrangement, how many digits will then be immediately followed by a letter? [Moderate]

(A) 4
(B) 5
(C) 6
(D) 7
(E) None of these

681. Study the following arrangement carefully: K 4 @ 7 M 3 # B 2 R % 6 T 5 & P 8 Q 9 ! How many such triplets of consecutive elements are there in the arrangement in which a letter is immediately followed by a digit which in turn is immediately followed by a symbol? [Moderate]

(A) 1
(B) 2
(C) 3
(D) 4
(E) None of these

682. Study the following arrangement of twenty elements carefully: 2 # R 7 @ M 5 K % 9 T & 4 B ! 6 P * 3 Q How many elements are there between the fifth element from the left end and the sixth element from the right end? [Moderate]

(A) 9
(B) 10
(C) 11
(D) 12
(E) None of these

683. Study the following arrangement carefully: % P 4 K @ M 7 # R T 3 & B 9 ! D Q * F 5 How many letters are there in the arrangement, each of which is immediately preceded by a symbol but is NOT immediately followed by a digit? [Moderate]

(A) 1
(B) 2
(C) 3
(D) 4
(E) None of these

684. Study the following arrangement carefully: 6 @ M 3 # 8 T % K 2 & 5 R ! 9 B * 4 P 7 If the entire arrangement is written in the reverse order, how many symbols will then be immediately preceded by a digit? [Moderate]

(A) 3
(B) 4
(C) 5
(D) 6
(E) None of these

685. Study the following arrangement carefully: T # 5 M 2 @ 7 R % 4 B ! 9 K 3 & 6 P * 8 Q How many digits are there in the arrangement, each of which is immediately preceded by a symbol and immediately followed by a letter? [Moderate]

(A) 3
(B) 4
(C) 5
(D) 6
(E) None of these

686. Study the following arrangement carefully: 9 K @ M # T 2 % 7 B & R 5 ! 3 P * Q 8 If all the letters are dropped from the arrangement, how many symbols will then have a digit immediately to their left? [Moderate]

(A) 3
(B) 4
(C) 5
(D) 6
(E) None of these

687. Study the following arrangement carefully: 4 @ 7 K 6 # 5 M 3 % 9 2 & 8 R 1 ! 6 T 7 * 4 How many symbols are there in the arrangement, each of which is immediately preceded by a digit and immediately followed by a digit, such that the sum of these two digits is greater than 10? [Difficult]

(A) 2
(B) 3
(C) 4
(D) 5
(E) None of these

688. The following string was printed by a bank's cheque-sorting machine: 3 M @ K 5 # P T 7 % B 2 R & 9 D Q ! 4 F * If all the digits are dropped from the string and the remaining elements are then written in the reverse order, how many letters will be immediately preceded by a symbol? [Difficult]

(A) 5
(B) 6
(C) 7
(D) 8
(E) None of these

689. Study the following arrangement carefully: # R 6 @ K 4 % M 9 & B 7 ! T 3 * P 5 Q 2 D How many letters are there in the arrangement, each of which is immediately preceded by a symbol and immediately followed by a digit that is a multiple of 3? [Difficult]

(A) 2
(B) 3
(C) 4
(D) 5
(E) None of these

690. Study the following arrangement of twenty-two elements carefully: 5 @ K 7 # M 2 R % 9 B & 4 T ! 6 P * 3 Q 8 D How many symbols lie between the third digit from the left end and the fourth letter from the right end? [Difficult]

(A) 2
(B) 3
(C) 4
(D) 5
(E) None of these

691. Study the following arrangement of twenty-one elements carefully: 4 @ M 7 # K 2 R % 9 & T 5 ! B 3 * P 6 Q 8 If every third element from the left end is dropped from the arrangement, how many symbols will remain? [Difficult]

(A) 4
(B) 5
(C) 6
(D) 7
(E) None of these

692. Study the following arrangement of twenty-one elements carefully: M 4 @ 7 K 3 # R 9 T 5 % B 2 ! 6 P 8 & Q 1 How many digits are there in the arrangement, each of which is immediately preceded by a letter and whose own position from the left end is an even number? [Difficult]

(A) 3
(B) 4
(C) 5
(D) 6
(E) None of these

693. Study the following arrangement carefully: 7 K # 5 @ M 3 R % 8 T & 2 B ! 9 P * 4 Q 6 D How many symbols are there in the arrangement, each of which is immediately preceded by a letter and immediately followed by a digit? [Difficult]

(A) 1
(B) 2
(C) 3
(D) 4
(E) None of these

2.8.4 Word formation from letters [checked, 3 flagged]

694. A trainee at a bank branch is given the word **DEPOSIT**. How many meaningful English words can be formed using the 5th, 6th and 7th letters of this word, using each letter only once in each word? [Easy]

(A) One
(B) Two
(C) Three
(D) More than three
(E) None

695. Using the 2nd, 3rd, 5th and 6th letters of the word **LOCKER**, exactly one meaningful English word can be formed, each letter being used only once. Which is the third letter of that word? [Easy]

(A) *C*
(B) *O*
(C) *R*
(D) *E*
(E) None of these

696. If all the letters of the word **CUSTOMER** are arranged in alphabetical order from left to right, which letter will occupy the fourth position from the left in the new arrangement? [Easy]

(A) M
(B) O
(C) R
(D) S
(E) None of these

697. Which of the following words CANNOT be formed using the letters of the word **MANAGEMENT**, no letter being used more times than it occurs in MANAGEMENT? [Easy]

(A) MAGNET
(B) MEANT
(C) MAGENTA
(D) ANTENNA
(E) MANGE

698. If all the letters of the word **BANKING** are rearranged in alphabetical order from left to right, how many letters will remain at the same position as they occupied in the original word? [Easy]

(A) None
(B) One
(C) Two
(D) Three
(E) More than three

699. Which of the following words can be formed using only the letters of the word **CALCULATOR**, no letter being used more times than it appears in CALCULATOR? [Easy]

(A) CIRCULAR
(B) TAROT
(C) CATALOGUE
(D) COLLAR
(E) ACCURATE

700. If it is possible to form a meaningful English word using the 1st, 2nd, 4th and 9th letters of the word **PARTNERSHIP**, each letter being used only once, which will be the second letter of that word? If no such word can be formed, mark 'X' as the answer, and if more than one such word can be formed, mark 'Y'. [Easy]

(A) A
(B) T
(C) H
(D) X
(E) Y

701. How many meaningful English words can be formed using the 3rd, 5th, 8th and 10th letters of the word **CONSTITUTION**, each letter being used only once in each word? [Moderate]

(A) None
(B) One
(C) Two
(D) Three
(E) More than three

702. The letters of the word **FRIENDS** are first arranged in alphabetical order from left to right. Using the 2nd, 3rd, 4th and 5th letters of this new arrangement, exactly one meaningful English word can be formed. What is the last letter of that word? [Moderate]

(A) F
(B) I
(C) N
(D) E
(E) None of these

703. Which of the following words can be formed using only the letters of the word **DISTRIBUTION**, no letter being used more times than it occurs there? [Moderate]

(A) TRADITION
(B) INTRUSION
(C) DISTORTION
(D) NUTRITION
(E) DISTORT

704. If it is possible to form a meaningful English word using the 1st, 4th, 9th and 10th letters of the word **BENEFICIARY**, each letter being used only once, which will be the third letter of that word? If no such word can be formed, mark 'X' as the answer, and if more than one such word can be formed, mark 'Y'. [Moderate]

(A) *A*
(B) *E*
(C) *R*
(D) X
(E) Y

705. How many meaningful English words can be formed using the 1st, 3rd, 4th and 5th letters of the word **CLEARANCE**, each letter being used only once in each word? [Moderate]

(A) None
(B) One
(C) Two
(D) Three
(E) More than three

706. In the word **SECURITY**, the first letter is interchanged with the second, the third with the fourth, the fifth with the sixth and the seventh with the eighth. How many meaningful English words can be formed using the 1st, 2nd, 5th and 8th letters of this new arrangement, each letter being used only once? [Moderate]

(A) None
(B) One
(C) Two
(D) Three
(E) More than three

707. If all the vowels of the word **ACCOUNTANT** are dropped and the remaining letters are then arranged in alphabetical order from left to right, which letter will occupy the fourth position from the left? [Moderate]

(A) *C*
(B) *N*
(C) *T*
(D) *A*
(E) None of these

708. How many meaningful English words can be formed using the 3rd, 5th, 8th and 9th letters of the word **SHAREHOLDER**, each letter being used only once in each word? [Difficult]

(A) One
(B) Two
(C) Three
(D) More than three
(E) None

709. The letters of the word **MERCHANT** are first arranged in alphabetical order from left to right. Each letter of this new arrangement is then replaced by the letter which immediately follows it in the English alphabet. Which letter will be third from the right end of the final arrangement? [Difficult]

(A) N
(B) O
(C) S
(D) U
(E) None of these

710. In the word **INVESTMENT**, the order of the first five letters is reversed among themselves and the order of the last five letters is reversed among themselves. How many meaningful English words can be formed using the 2nd, 5th, 6th and 9th letters of this new arrangement, each letter being used only once in each word? [Difficult]

(A) None
(B) One
(C) Two
(D) Three
(E) More than three

711. The letters of the word **CONSOLIDATION** are first arranged in alphabetical order from left to right. Using the 1st, 3rd, 9th and 13th letters of this new arrangement, exactly one meaningful English word can be formed. Which is the third letter of that word? [Difficult]

(A) T
(B) O
(C) A
(D) D
(E) None of these

712. In the word **PERFORMANCE**, all the consonants are written in the reverse of their present order while all the vowels stay in their original positions. How many meaningful English words can be formed using the 1st, 2nd, 3rd and 5th letters of the new arrangement, each letter being used only once? [Difficult]

(A) None
(B) One
(C) Two
(D) Three
(E) More than three

713. The letters of the word **SETTLEMENT** are first arranged in alphabetical order from left to right, and then every alternate letter beginning with the first is struck off. Which of the following words can be formed using only the letters that survive? [Difficult]

(A) MELT
(B) TEEN
(C) SENT
(D) LENT
(E) NEST

714. How many meaningful English words beginning with a consonant can be formed using the 2nd, 4th, 6th and 8th letters of the word **MAINSTREAM**, each letter being used only once in each word? [Difficult]

(A) None
(B) One
(C) Two
(D) Three
(E) More than three

2.8.5 Pairs of letters in a word [checked, 3 flagged]

715. How many pairs of letters are there in the word **BANKING**, each of which has as many letters between them in the word as in the English alphabetical order (in both forward and backward directions)? [Easy]

(A) One
(B) Two
(C) Three
(D) Four
(E) None

716. In the word **DEPOSIT**, how many such pairs of letters are there, each of which has as many letters between them in the word as in the English alphabet (counting in both directions)? [Easy]

(A) Two
(B) Three
(C) Four
(D) Five
(E) More than five

717. A savings account brochure carries the word **SAVINGS** in bold. How many pairs of letters are there in this word, each of which has as many letters between them in the word as in the English alphabet (both directions)? [Easy]

(A) None
(B) One
(C) Two
(D) Three
(E) Four

718. How many such pairs of letters are there in the word **LIQUIDITY**, each of which has as many letters between them in the word as in the English alphabet (in both forward and backward directions)? [Easy]

(A) None
(B) One
(C) Two
(D) Three
(E) More than three

719. In the word **MANAGER**, how many pairs of letters are there which have as many letters between them in the word as in the English alphabet, when counted only in the *forward* direction (i.e. the second letter of the pair also comes later in the alphabet)? [Easy]

(A) None
(B) One
(C) Two
(D) Three
(E) Four

720. Consider the word **CALCULATOR**. Which one of the following pairs of its letters has as many letters between them in the word as it has between them in the English alphabet? [Easy]

(A) *LU*
(B) *CU*
(C) *TO*
(D) *AC*
(E) None of these

721. How many such pairs of letters are there in the word **TRANSFER**, each of which has as many letters between them in the word as in the English alphabet (in both directions)? [Easy]

(A) One
(B) Two
(C) Three
(D) Four
(E) None of these

722. How many such pairs of letters are there in the word **MERCHANDISE**, each of which has as many letters between them in the word as in the English alphabet (counting in both forward and backward directions)? [Moderate]

(A) Three
(B) Four
(C) Five
(D) Six
(E) More than six

723. The letters of the word **BANKER** are first rearranged in alphabetical order from left to right. In the new arrangement, how many pairs of letters are there which have as many letters between them as in the English alphabet (both directions)? [Moderate]

(A) None
(B) One
(C) Two
(D) Three
(E) Four

724. Study the following arrangement carefully and answer the question below.
K 5 M P 8 R T 3 W Y 2 B
How many such pairs of letters are there in the above arrangement, each of which has as many elements between them in the arrangement as there are letters between them in the English alphabet (in both directions)? [Moderate]

(A) One
(B) Two
(C) Three
(D) Four
(E) None

725. Five words are printed on a bank's training chart: **TELLER**, **LOCKER**, **MORTGAGE**, **SALARY** and **CASHIER**. In which of these words is the number of pairs of letters having as many letters between them in the word as in the English alphabet (both directions) the *greatest*? [Moderate]

(A) TELLER
(B) LOCKER
(C) MORTGAGE
(D) SALARY
(E) CASHIER

726. How many such pairs of letters are there in the word **CHENNAI**, each of which has as many letters between them in the word as in the English alphabet (in both directions)? [Moderate]

(A) One
(B) Two
(C) Three
(D) Four
(E) None of these

727. Taking the words **PENSION** and **BONDS** together, what is the total number of pairs of letters (counting each word separately) which have as many letters between them in the word as in the English alphabet, in both directions? [Moderate]

(A) Three
(B) Four
(C) Five
(D) Six
(E) Seven

728. How many such pairs of letters are there in the word **INTEREST**, each of which has as many letters between them in the word as in the English alphabet (both forward and backward)? [Moderate]

(A) Two
(B) Three
(C) Four
(D) Five
(E) None of these

729. How many such pairs of letters are there in the word **PORTFOLIO**, each of which has as many letters between them in the word as in the English alphabet (in both forward and backward directions)? [Difficult]

(A) Four
(B) Five
(C) Six
(D) Seven
(E) More than seven

730. How many such pairs of letters are there in the word **DEBENTURE**, each of which has as many letters between them in the word as in the English alphabet (counting in both directions)? [Difficult]

(A) Two
(B) Three
(C) Four
(D) Five
(E) More than five

731. Let x be the number of pairs of letters in the word **MANAGEMENT** which have as many letters between them in the word as in the English alphabet (both directions), and let y be the corresponding number when all the letters of MANAGEMENT are first arranged in alphabetical order from left to right. What is the value of $x - y$? [Difficult]

(A) 0
(B) 1
(C) 2
(D) 3
(E) 4

732. Each letter of the word **SECURITIES** is replaced by the letter which is two places ahead of it in the English alphabet (so S becomes U, E becomes G, and so on). In the new group of letters so formed, how many pairs of letters are there which have as many letters between them as in the English alphabet (both directions)? [Difficult]

(A) Zero
(B) One
(C) Two
(D) Three
(E) Four

733. Study the following arrangement and answer the question given below.
`B 7 K @ L N 3 P # Z 5 R T 2`
How many such pairs of letters are there in the arrangement, each of which has as many elements between them in the arrangement as there are letters between them in the English alphabet (in both directions)? [Difficult]

(A) Two
(B) Three
(C) Four
(D) Five
(E) More than five

734. Consider the five words **MORTGAGE**, **PROFITS**, **BALANCE**, **VOUCHER** and **CAPITAL**. In how many of these words is there *exactly one* pair of letters having as many letters between them in the word as in the English alphabet (both directions)? [Difficult]

(A) One
(B) Two
(C) Three
(D) Four
(E) None

735. The letters of the word **OVERDRAFT** are written in the reverse order. In the group so formed, how many pairs of letters are there which have as many letters between them as in the English alphabet, counted only in the *forward* direction (that is, the letter on the right is also later in the alphabet)? [Difficult]

(A) One
(B) Two
(C) Three
(D) Four
(E) None

Section 2.9

2.9.1 Shifting-based input-output [checked]

736. A word-and-number arranging machine, when given an input line, rearranges it following a fixed rule. In every step the element standing at the extreme left is shifted to the extreme right end and all the remaining elements move one place to the left.
Input: 34 bank 71 loan 26 cash
Which element is third from the left in Step II? [Easy]

(A) 26
(B) cash
(C) loan
(D) 34
(E) None of these

737. A machine rearranges an input line by a fixed rule: in every step the element standing at the extreme right is shifted to the extreme left end and all the remaining elements move one place to the right.
Input: rupee 45 credit 82 debit 19
In Step II, which element is second from the right end? [Easy]

(A) 45
(B) rupee
(C) credit
(D) debit
(E) None of these

738. A machine rearranges an input line so that in each step the leftmost element is shifted to the extreme right end, the remaining elements moving one place left.
Input: loan 27 cash 61 draft
At which step will the arrangement "draft loan 27 cash 61" be obtained? [Easy]

(A) Step I
(B) Step II
(C) Step III
(D) Step IV
(E) Step V

739. A machine rearranges an input line by a fixed rule: in every step the last two elements of the arrangement are shifted, in the same order, to the beginning of the line.
Input: 16 fund 39 asset 52 ledger 74
Which element occupies the fourth position from the left in Step II? [Easy]

(A) ledger
(B) 16
(C) 74
(D) 52
(E) None of these

740. A machine rearranges an input line by shifting the first two elements, in the same order, to the extreme right end in every step.
Input: teller 23 vault 48 audit 65
In Step II, which element lies exactly between 65 and 23? [Easy]

(A) vault
(B) audit
(C) teller
(D) 48
(E) None of these

741. A machine shifts the leftmost element of the line to the extreme right end at every step.
Input: 89 branch 34 cheque 57
Which of the following is Step III for this input? [Easy]

(A) cheque 57 89 branch 34
(B) 34 cheque 57 89 branch
(C) 57 89 branch 34 cheque
(D) branch 34 cheque 57 89
(E) None of these

742. A machine shifts the element at the extreme right of the line to the extreme left end at every step.
Input: draft 41 kiosk 68 passbook 93
How many steps are required so that kiosk occupies the extreme left position? [Easy]

(A) Three
(B) Four
(C) Five
(D) Six
(E) None of these

743. A machine rearranges an input line following a fixed rule, as illustrated below.
Input: bank 36 loan 82 cash 47
Step I: 47 bank 36 loan 82 cash
Step II: 82 cash 47 bank 36 loan
Which of the following will be Step III for this input? [Moderate]

(A) bank 36 loan 82 cash 47
(B) 36 loan 82 cash 47 bank
(C) cash 47 bank 36 loan 82
(D) loan 82 cash 47 bank 36
(E) None of these

744. A machine rearranges an input line following a fixed rule, as illustrated below.
Input: 29 vault mandate 64 payee 18 slip
Step I: vault mandate 64 payee 18 slip 29
Step II: 64 payee 18 slip 29 vault mandate
In Step III, which element is fourth from the right end? [Moderate]

(A) vault
(B) 29
(C) mandate
(D) slip
(E) None of these

745. A machine shifts the leftmost element of the line to the extreme right end in every step, the rest moving one place to the left.
Input: audit 46 draft 19 ledger 73 surplus
What is the least number of steps after which audit occupies the middle position of the line? [Moderate]

(A) Three
(B) Four
(C) Five
(D) Six
(E) None of these

746. A machine rearranges an input line following a fixed rule, as illustrated below.
Input: 27 nominee 84 pledge 53 remit 96
Step I: remit 96 27 nominee 84 pledge 53
Step II: pledge 53 remit 96 27 nominee 84
How many steps are needed for the original input line to reappear? [Moderate]

(A) Four
(B) Five
(C) Six
(D) Seven
(E) None of these

747. A machine rearranges an input line following a fixed rule, as illustrated below.
Input: 63 quota 38 lien 92
Step I: quota 38 lien 92 63
Step II: quota lien 92 63 38
Step III: quota lien 63 38 92
Which of the following will be Step IV for this input? [Moderate]

(A) quota lien 63 92 38
(B) lien quota 63 92 38
(C) quota 63 lien 38 92
(D) quota lien 92 38 63
(E) None of these

748. A machine shifts the element at the extreme right of the line to the extreme left end in every step.
Input: 71 escrow 46 tender 88 clause 32 nominee
In Step III, which element is third to the left of the element which is fifth from the right end? [Moderate]

(A) nominee
(B) 32
(C) escrow
(D) clause
(E) None of these

749. A machine shifts the first two elements of the line, in the same order, to the extreme right end in every step.
Input: 55 payee 39 draft 82 kiosk 17
In Step III, how many elements lie between payee and 82? [Moderate]

(A) One
(B) Two
(C) Three
(D) Four
(E) None of these

750. A machine rearranges an input line following a fixed rule, as illustrated below.
Input: 42 lien surety 76 escrow 91
Step I: lien surety 76 escrow 91 42

Step II: 76 escrow 91 42 lien surety
Step III: escrow 91 42 lien surety 76
Which of the following will be Step V for this input? [Difficult]

(A) 42 lien surety 76 escrow 91
(B) lien surety 76 escrow 91 42
(C) 91 42 lien surety 76 escrow
(D) surety 76 escrow 91 42 lien
(E) None of these

751. A machine rearranges an input line following a fixed rule, as illustrated below.
Input: 34 bond quota payee 57 vault
Step I: quota 34 bond 57 vault payee
Step II: bond quota 34 vault payee 57
Which element occupies the fourth position from the left in Step V? [Difficult]

(A) payee
(B) vault
(C) 57
(D) quota
(E) None of these

752. A machine rearranges an input line following a fixed rule, as illustrated below.
Input: 48 mortgage 23 payee 91 tender
Step I: tender 48 mortgage 23 payee 91
Step II: tender 91 48 mortgage 23 payee
Step III: tender 91 payee 48 mortgage 23
Which of the following will be Step V for this input? [Difficult]

(A) tender 91 payee 23 48 mortgage
(B) tender 91 payee 23 mortgage 48
(C) tender 91 payee mortgage 23 48
(D) tender 91 48 payee 23 mortgage
(E) None of these

753. A machine rearranges an input line following a fixed rule, as illustrated below.
Input: 17 kiosk 52 demand 83 payee 46 ledger
Step I: payee 46 ledger 17 kiosk 52 demand 83
Step II: 52 demand 83 payee 46 ledger 17 kiosk
At which step will the arrangement "kiosk 52 demand 83 payee 46 ledger 17" be obtained? [Difficult]

(A) Step III
(B) Step IV
(C) Step V
(D) Step VI
(E) None of these

754. A machine shifts the leftmost element of the line to the extreme right end in every step, all other elements moving one place to the left.
Input: 58 tender 31 quota 74 escrow 29 payee 66
In Step VII, which element is third to the right of the element which is sixth from the left end? [Difficult]

(A) escrow
(B) 74
(C) 29
(D) payee
(E) None of these

755. A machine rearranges an input line following a fixed rule, as illustrated below.
Input: 62 warrant 39 payee 18 clause 85
Step I: warrant 39 payee 18 clause 85 62
Step II: payee 18 clause 85 62 warrant 39
Step III: 85 62 warrant 39 payee 18 clause
Which of the following steps will be exactly the same as Step II? [Difficult]

(A) Step III
(B) Step IV
(C) Step V
(D) Step VI
(E) None of these

756. A machine rearranges an input line following a fixed rule, as illustrated below.
Input: 47 mandate 82 surety 15 ledger
Step I: 15 surety 47 ledger 82 mandate
Step II: 82 ledger 15 mandate 47 surety
In Step IV, which element stands exactly between surety and ledger? [Difficult]

(A) 15
(B) 47
(C) mandate
(D) 82
(E) None of these

2.9.2 Arithmetic-operation-based input-output [checked, 3 flagged]

757. A number-processing machine installed at a bank's clearing house rearranges an input line of numbers using a fixed rule. In Step I the machine adds 1 to the first number, 2 to the second number, 3 to the third number, and so on. Input: 24, 17, 36, 45, 12. What is the sum of all the numbers in Step I? [Easy]

(A) 145
(B) 147
(C) 149
(D) 151
(E) None of these

758. A machine used to renumber deposit tokens works as follows: in Step I every number of the input is multiplied by 2 and then 5 is subtracted from the product. Input: 8, 12, 15, 21, 30. Which of the following numbers of Step I is a perfect square? [Easy]

(A) 11
(B) 19
(C) 25
(D) 37
(E) None of these

759. A machine works on the following rule: in Step I every number that is exactly divisible by 3 is divided by 3, and every other number is multiplied by 3. Input: 9, 14, 21, 20, 36. What is the sum of the first and the last numbers of Step I? [Easy]

(A) 12
(B) 15
(C) 18
(D) 21
(E) None of these

760. A cheque-sorting machine replaces every two-digit number of the input by the product of its two digits in Step I. Input: 34, 52, 71, 26, 43. How many numbers in Step I are greater than 10? [Easy]

(A) One
(B) Two
(C) Three
(D) Four
(E) None of these

761. A machine used by Mr. Ramesh Iyer to code account numbers works like this: in Step I each number of the input is replaced by the sum of its digits, and this sum is then multiplied by 2. Input: 47, 63, 85, 29, 56. Which is the highest number in Step I? [Easy]

(A) 18
(B) 22
(C) 24
(D) 26
(E) None of these

762. A machine rearranges an input line of numbers as follows: in Step I the largest number of the input is halved and placed at the extreme left, and all the remaining numbers keep their original order to its right. Input: 18, 45, 32, 60, 27. Which number is third from the left in Step I? [Easy]

(A) 18
(B) 32
(C) 45
(D) 27
(E) None of these

763. A machine follows this rule in Step I: every odd number of the input is increased by 7 and every even number is decreased by 4. Input: 23, 40, 15, 62, 31. What is the difference between the largest and the smallest number of Step I? [Easy]

(A) 30
(B) 32
(C) 34
(D) 36
(E) None of these

764. A machine processes a line of numbers in three steps. Step I: 5 is added to every number of the input. Step II: every number of Step I is multiplied by 2. Step III: from the first number of Step II 1 is subtracted, from the second 2, from the third 3, and so on. Input: 6, 9, 12, 15, 18. What is the sum of the numbers in Step III? [Moderate]

(A) 145
(B) 150
(C) 155
(D) 160
(E) None of these

765. A machine rearranges numbers as follows: in each step the number at the extreme left is multiplied by 2 and shifted to the extreme right end, while the remaining numbers move one place to the left retaining their order. Input: 5, 8, 11, 14. Which number is second from the right end in Step III? [Moderate]

(A) 10
(B) 14
(C) 16
(D) 22
(E) None of these

766. A machine works on this rule: in each step the smallest number of the previous step is doubled and shifted to the extreme right end, while the remaining numbers keep their order. Input: 34, 12, 27, 19, 45. What is the sum of the numbers occupying the two extreme ends in Step III? [Moderate]

(A) 72
(B) 78
(C) 82
(D) 86
(E) None of these

767. A machine used for verifying account codes works in two steps. Step I: the digits of every two-digit number of the input are written in reverse order. Step II: from each number of Step I the corresponding input number is subtracted and only the numerical value of the difference (ignoring the sign) is retained. Input: 41, 72, 53, 26, 84. How many numbers of Step II are exactly divisible by 9? [Moderate]

(A) Two
(B) Three
(C) Four
(D) All five
(E) None of these

768. A machine works in two steps. Step I: all the numbers of the input are arranged in ascending order from left to right. Step II: each number of Step I is added to the number standing immediately to its right, so that Step II has one number less than Step I. Input: 27, 14, 36, 21, 48. What is the difference between the largest and the smallest number of Step II? [Moderate]

(A) 45
(B) 47
(C) 49
(D) 51
(E) None of these

769. A machine processes numbers in three steps. Step I: every number of the input is multiplied by 3. Step II: 12 is subtracted from every number of Step I. Step III: every number of Step II is divided by 3. Input: 9, 13, 17, 21, 25. What is the product of the second number of Step II and the first number of Step III? [Moderate]

(A) 120
(B) 127
(C) 135
(D) 145
(E) None of these

770. A machine works in two steps. Step I: the numbers in the odd positions of the input (first, third and fifth) are multiplied by 2, while the numbers in the even positions (second and fourth) are divided by 2; the positions are not disturbed. Step II: the numbers of Step I are arranged in descending order from left to right. Input: 16, 24, 18, 36, 21. Which number occupies the middle position in Step II? [Moderate]

(A) 36
(B) 32
(C) 18
(D) 42
(E) None of these

771. A machine repeats the following rule in every step: each even number of the previous line is halved and each odd number is increased by 3. Input: 48, 27, 36, 15. In which step does the number 9 appear for the first time? [Difficult]

(A) Step I
(B) Step II
(C) Step III
(D) Step IV
(E) None of these

772. A machine is fed two rows of numbers and works in three steps. Step I: each number of Row B is subtracted from the number standing in the same position in Row A. Step II: each number of Step I is replaced by the product of its two digits. Step III: the numbers of Step II are arranged in ascending order from left to right. Row A: 56, 43, 78, 61, 39. Row B: 29, 17, 45, 38, 22. What is the sum of the numbers at the second and the fourth positions of Step III? [Difficult]

(A) 17
(B) 19
(C) 21
(D) 23
(E) None of these

773. A machine processes numbers in three steps. Step I: every number of the input is multiplied by 4. Step II: from every number of Step I the sum of the digits of that same Step I number is subtracted. Step III: every number of Step II is divided by 3. Input: 12, 18, 21, 27. What is the difference between the sum of all the numbers of Step II and the sum of all the numbers of Step III? [Difficult]

(A) 160
(B) 170
(C) 180
(D) 190
(E) None of these

774. A machine repeats the following rule in every step: the two numbers standing at the extreme ends of the previous line are removed, and their sum is written at the extreme right end of the numbers that remain. Input: 13, 25, 17, 32, 19, 28. What is the sum of all the numbers in Step III? [Difficult]

(A) 128
(B) 131
(C) 134
(D) 137
(E) None of these

775. A machine processes a line of numbers in three steps. Step I: every number of the input is replaced by the product of its two digits. Step II: the numbers of Step I are arranged in descending order from left to right. Step III: each number of Step II is multiplied by the number of the position it occupies in Step II, the leftmost position being the first. Input: 47, 63, 85, 92, 38. What is the sum of the numbers in Step III? [Difficult]

(A) 310
(B) 320
(C) 330
(D) 340
(E) None of these

776. A machine repeats the following rule in every step: every number less than 50 is multiplied by 2, and every number equal to or greater than 50 is decreased by 25. Input: 18, 62, 45, 30, 55. What is the sum of the numbers in Step III? [Difficult]

(A) 235
(B) 238
(C) 241
(D) 244
(E) None of these

777. A machine repeats the following rule in every step: the number at the extreme left of the previous line is multiplied by 3 and shifted to the extreme right end, while each of the remaining numbers is reduced by 2 and moves one place to the left keeping its relative order. Input: 20, 34, 27, 41. What is the difference between the highest and the lowest number of Step III? [Difficult]

(A) 55
(B) 57
(C) 59
(D) 61
(E) None of these

2.9.3 New-pattern input-output [checked, 3 flagged]

778. A word-and-number arrangement machine, when given an input line, rearranges it following a particular rule. The following is an illustration of the input and the steps of rearrangement.
Input: 45 loan 18 fund 63 rate 29
Step I: 18 45 loan fund 63 rate 29
Step II: 29 18 45 loan fund 63 rate
Which of the following will be the last step of this arrangement? [Easy]

(A) 18 29 45 63 loan fund rate
(B) 63 45 29 18 fund loan rate
(C) 63 45 29 18 loan fund rate
(D) 45 29 18 loan fund 63 rate
(E) None of these

779. A word-and-number arrangement machine, when given an input line, rearranges it following a particular rule. The following is an illustration.
Input: bank 32 cash 17 debit 49 offer
Step I: 32 cash 17 debit 49 offer bank
Step II: 32 17 debit 49 offer bank cash
Which of the following is Step III of this arrangement? [Easy]

(A) 32 17 49 offer bank cash debit
(B) 32 17 49 bank cash debit offer
(C) 17 32 49 offer bank cash debit
(D) 32 17 debit 49 bank cash offer
(E) None of these

780. A number arrangement machine, when given an input line of numbers, rearranges it following a particular rule. The following is an illustration.
Input: 36 19 74 52 63
Step I: 9 10 11 7 9
Step II: 7 9 9 10 11
If the input line is 57 84 29 46 63, what will Step II of that arrangement be? [Easy]

(A) 12 12 11 10 9
(B) 9 10 11 12 13
(C) 10 9 11 12 12
(D) 9 10 11 12 12
(E) None of these

781. A word-and-number arrangement machine, when given an input line, rearranges it following a particular rule. The following is an illustration.
Input: bank 24 pay 51 note 36
Step I: 36 24 pay 51 note bank
Step II: 36 note pay 51 24 bank
Which of the following will be the last step of this arrangement? [Easy]

(A) 36 note pay 51 24 bank
(B) 36 note 51 pay 24 bank
(C) bank note 51 pay 24 36
(D) 36 51 note pay 24 bank
(E) None of these

782. A word-and-number arrangement machine, when given an input line, rearranges it following a particular rule. The following is an illustration.
Input: 34 branch 17 fee 82 deposit 59 loan
Step I: fee 34 branch 17 82 deposit 59 loan
Step II: loan fee 34 branch 17 82 deposit 59
In Step III of this arrangement, which element is fourth from the right end? [Easy]

(A) 17
(B) 82
(C) deposit
(D) 34
(E) None of these

783. A word-and-number machine, when given an input line, converts it following a particular rule. The following is an illustration.
Input: 52 branch 38 fee 16 note
Step I: 7 6 11 3 7 4
Step II: 4 7 3 11 6 7
If the input line is 47 deposit 65 cash 23 rate, what will Step II of that arrangement be? [Easy]

(A) 11 7 11 4 5 4
(B) 4 4 5 7 11 11
(C) 4 5 4 11 7 11
(D) 4 5 4 11 11 7
(E) None of these

784. A word-and-number arrangement machine, when given an input line, rearranges it following a particular rule. The following is an illustration.
Input: pen 34 desk 27 file 19
Step I: 19 pen 34 desk 27 file
Step II: file 19 pen 34 desk 27
In Step IV of this arrangement, which element is third from the left end? [Easy]

(A) 19
(B) pen
(C) desk
(D) 34
(E) None of these

785. A word-and-number arrangement machine, when given an input line, rearranges it following a particular rule. The following is an illustration.
Input: 63 gold 27 site 41 mint
Step I: 27 63 gold site 41 mint
Step II: 27 63 site 41 mint gold
Step III: 41 27 63 site mint gold
Which of the following is Step V of this arrangement? [Moderate]

(A) 63 41 27 gold mint site
(B) 63 41 27 site gold mint
(C) 41 27 63 site gold mint
(D) 63 41 27 site mint gold
(E) None of these

786. A number machine, when given an input line, works on it following a particular rule. The following is an illustration.
Input: 12 5 9 3 7
Step I: 17 14 12 10
Step II: 31 26 22
Step III: 57 48
Step IV: 105
If the input line is 8 14 6 11 5, what will the last step of that arrangement be? [Moderate]

(A) 143
(B) 149
(C) 152
(D) 158
(E) None of these

787. A word machine, when given an input line of words, rearranges it following a particular rule. The following is an illustration.
Input: note bank fund cash
Step I: eton knab dnuf hsac
Step II: dnuf eton hsac knab
If the input line is loan debit rate ledger, what will Step II of that arrangement be? [Moderate]

(A) naol tibed etar regdel
(B) tibed regdel naol etar
(C) etar regdel naol tibed
(D) etar naol regdel tibed
(E) None of these

788. A word-and-number arrangement machine, when given an input line, rearranges it following a particular rule. The following is an illustration.
Input: 34 rupee 71 cash 26 ledger 58
Step I: 26 34 rupee 71 cash 58 ledger
Which of the following is Step II of this arrangement? [Moderate]

(A) 26 34 71 cash 58 rupee ledger
(B) 34 26 71 58 cash ledger rupee
(C) 34 26 71 cash 58 ledger rupee
(D) 34 26 cash 71 58 ledger rupee
(E) None of these

789. A number arrangement machine, when given an input line, rearranges it following a particular rule. The following is an illustration.
Input: 3416 7529 8264
Step I: 6413 9527 4268
Step II: 9527 6413 4268
If the input line is 5827 4396 7148 2635, which number will be second from the left end in Step II of that arrangement? [Moderate]

(A) 8147
(B) 7825
(C) 6394
(D) 5632
(E) None of these

790. A word-and-number arrangement machine, when given an input line, rearranges it following a particular rule. The following is an illustration.
Input: 24 mint 51 gold 37 bond 46
Step I: 24 51 37 46 mint gold bond
Step II: 24 37 mint bond 51 46 gold
If the machine goes on applying the same rule, in which step will the line become exactly the same as the input line? [Moderate]

(A) Step III
(B) Step IV
(C) Step V
(D) Step VI
(E) The input line never reappears

791. A machine used by a bank to revise deposit amounts, when given an input line, works on it following a particular rule. The following is an illustration.

Input: Rs. 500 Rs. 800 Rs. 300 Rs. 600
Step I: 600 960 360 720
Step II: 360 600 720 960
If the input line is Rs. 450 Rs. 750 Rs. 250 Rs. 900, what is the difference between the largest and the second largest amount in Step II of that arrangement? [Moderate]

(A) Rs. 140
(B) Rs. 180
(C) Rs. 360
(D) Rs. 540
(E) None of these

792. A word-and-number machine, when given an input line, converts it following a particular rule. The following is an illustration.
Input: bank 34 mode 27 pen
Step I: 13 12 18 14 30
Step II: 30 18 14 13 12
If the input line is gold 46 wire 58 cash, what will Step II of that arrangement be? [Difficult]

(A) 11 11 24 28 40
(B) 40 24 28 11 11
(C) 40 28 24 11 11
(D) 40 28 24 12 11
(E) None of these

793. A word-and-number arrangement machine, when given an input line, rearranges it following a particular rule. The following is an illustration.
Input: 34 bond 17 cash 52 gold
Step I: bond 34 17 cash 52 gold
Step II: 17 34 bond cash 52 gold
Step III: cash bond 34 17 52 gold
In Step V of this arrangement, which element is third from the left end? [Difficult]

(A) 34
(B) bond
(C) cash
(D) 17
(E) None of these

794. A number machine, when given an input line, works on it following a particular rule. The following is an illustration.
Input: 45 62 38 71
Step I: 71 38 62 45
Step II: 63 27 54 36
Step III: 27 36 54 63
If the input line is 84 29 57 63, which number will be second from the right end in Step III of that arrangement? [Difficult]

(A) 45
(B) 54
(C) 72
(D) 18
(E) None of these

795. A coding machine, when given an input line of words, converts it following a particular rule. The following is an illustration.
Input: cash bond
Step I: dbti cpoe
Step II: itbd eopc
If the input line is loan mint, what will Step II of that arrangement be? [Difficult]

(A) mpbo njou
(B) naol tnim
(C) obpm nuoj
(D) obpm uojn
(E) None of these

796. A word-and-number arrangement machine, when given an input line, rearranges it following a particular rule. The following is an illustration.
Input: 21 bank 34 cash 47 debt
Step I: bank 21 cash 34 debt 47
Step II: bank cash 21 debt 34 47
Step III: cash bank debt 21 47 34
If the machine keeps working, in which step will the line stand exactly in the reverse order of the input line? [Difficult]

(A) Step V
(B) Step VI
(C) Step VII
(D) Step VIII
(E) None of these

797. A word-and-number machine, when given an input line, converts it following a particular rule. The following is an illustration.
Input: 24 audit 13 cash
Step I: 18 2 16 3
Step II: 2 3 16 18
If the input line is 18 branch 23 fee, what will Step II of that arrangement be? [Difficult]

(A) 9 5 16 1
(B) 1 5 16 9
(C) 1 6 9 16
(D) 1 5 9 16
(E) None of these

798. A number machine, when given an input line, works on it following a particular rule. The following is an illustration.
Input: 12 45 38 27 61 54 19 33
Step I: 21 26 16 34
Step II: 34 26 21 16
Step III: 60 47 37
If the input line is 34 57 19 82 46 23 71 65, which of the following represents Step III of that arrangement? [Difficult]

(A) 45 67 18
(B) 67 45 40
(C) 67 45 18
(D) 50 18 40
(E) None of these

Section 2.10

2.10.1 Data sufficiency (reasoning form) [checked, 1 flagged]

799. Directions: The question below is followed by two statements numbered I and II. Decide whether the data given in the statements are sufficient to answer the question. **Question:** Point P is in which direction with respect to point Q? **I.** Point P is to the north of point R, and point R is to the west of point Q. **II.** Point Q is to the south-east of point P. [Easy]

(A) The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.

(B) The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
(C) The data either in statement I alone or in statement II alone are sufficient to answer the question.
(D) The data in both the statements I and II together are not sufficient to answer the question.
(E) The data in both the statements I and II together are necessary to answer the question.

800. Directions: The question below is followed by two statements numbered I and II. Decide whether the data given in the statements are sufficient to answer the question. **Question:** How is P related to Q? **I.** P is the only daughter of Q's mother. **II.** Q's father has only two children, one of whom is P. [Easy]

(A) The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
(B) The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
(C) The data either in statement I alone or in statement II alone are sufficient to answer the question.
(D) The data in both the statements I and II together are not sufficient to answer the question.
(E) The data in both the statements I and II together are necessary to answer the question.

801. Directions: The question below is followed by two statements numbered I and II. Decide whether the data given in the statements are sufficient to answer the question. **Question:** In a certain code language, what is the code for the word 'money'? **I.** In that code language, 'money is power' is written as 'sa ti la'. **II.** In that code language, 'power of money' is written as 'la ti ka'. [Easy]

(A) The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
(B) The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
(C) The data either in statement I alone or in statement II alone are sufficient to answer the question.
(D) The data in both the statements I and II together are not sufficient to answer the question.
(E) The data in both the statements I and II together are necessary to answer the question.

802. Directions: The question below is followed by two statements numbered I and II. Decide whether the data given in the statements are sufficient to answer the question. **Question:** In a class of 40 students, what is Sunita's rank from the top? **I.** Sunita's rank is 18th from the bottom of the class. **II.** Ramesh's rank is 18th from the top and Sunita's rank is exactly 5 ranks below Ramesh's rank.[Easy]

(A) The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
(B) The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
(C) The data either in statement I alone or in statement II alone are sufficient to answer the question.
(D) The data in both the statements I and II together are not sufficient to answer the question.
(E) The data in both the statements I and II together are necessary to answer the question.

803. Directions: The question below is followed by two statements numbered I and II. Decide whether the data given in the statements are sufficient to answer the question. **Question:** Among five bank officers A, B, C, D and E, each drawing a different salary, who draws the highest salary? **I.** A draws more than B and more than C, and D draws more than A. **II.** E draws less than C but more than B, and D draws more than E. [Easy]

(A) The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.

(B) The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
(C) The data either in statement I alone or in statement II alone are sufficient to answer the question.
(D) The data in both the statements I and II together are not sufficient to answer the question.
(E) The data in both the statements I and II together are necessary to answer the question.

804. Directions: The question below is followed by two statements numbered I and II. Decide whether the data given in the statements are sufficient to answer the question. **Question:** What is Vikram's position from the left end of a row of 25 children? **I.** Vikram is 8th from the right end of the row. **II.** Meena is 10th from the left end of the row and exactly 7 children stand between Meena and Vikram. [Easy]

(A) The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
(B) The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
(C) The data either in statement I alone or in statement II alone are sufficient to answer the question.
(D) The data in both the statements I and II together are not sufficient to answer the question.
(E) The data in both the statements I and II together are necessary to answer the question.

805. Directions: The question below is followed by two statements numbered I and II. Decide whether the data given in the statements are sufficient to answer the question. **Question:** What is Rakesh's present age? **I.** Five years ago, Rakesh's age was one-third of his father's age at that time. **II.** Rakesh's father's present age is 47 years. [Easy]

(A) The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
(B) The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
(C) The data either in statement I alone or in statement II alone are sufficient to answer the question.
(D) The data in both the statements I and II together are not sufficient to answer the question.
(E) The data in both the statements I and II together are necessary to answer the question.

806. Directions: The question below is followed by two statements numbered I and II. Decide whether the data given in the statements are sufficient to answer the question. **Question:** Six friends — Amit, Bhavna, Chetan, Divya, Esha and Naveen — are sitting around a circular table facing the centre. Who sits exactly opposite Naveen? **I.** Amit sits second to the left of Naveen and Divya is an immediate neighbour of Amit. **II.** Bhavna sits third to the right of Naveen. [Moderate]

(A) The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
(B) The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
(C) The data either in statement I alone or in statement II alone are sufficient to answer the question.
(D) The data in both the statements I and II together are not sufficient to answer the question.
(E) The data in both the statements I and II together are necessary to answer the question.

807. Directions: The question below is followed by two statements numbered I and II. Decide whether the data given in the statements are sufficient to answer the question. **Question:** How is Q related to M? **I.** M is the mother of R, who is the only sister of Q. **II.** Q's father has only two children. [Moderate]

(A) The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.

(B) The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
(C) The data either in statement I alone or in statement II alone are sufficient to answer the question.
(D) The data in both the statements I and II together are not sufficient to answer the question.
(E) The data in both the statements I and II together are necessary to answer the question.

808. Directions: The question below is followed by two statements numbered I and II. Decide whether the data given in the statements are sufficient to answer the question. **Question:** In a certain code language, what is the code for the word 'loan'? **I.** In that language, 'bank gives loan' is written as 'mo pa ni' and 'loan is costly' is written as 'ni ta ke'. **II.** In that language, 'gives costly gift' is written as 'pa ke zo'. [Moderate]

(A) The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
(B) The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
(C) The data either in statement I alone or in statement II alone are sufficient to answer the question.
(D) The data in both the statements I and II together are not sufficient to answer the question.
(E) The data in both the statements I and II together are necessary to answer the question.

809. Directions: The question below is followed by two statements numbered I and II. Decide whether the data given in the statements are sufficient to answer the question. **Question:** Is $P > S$? **I.** $P > Q = R \geq S$ **II.** $S < T \leq Q < P$ [Moderate]

(A) The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
(B) The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
(C) The data either in statement I alone or in statement II alone are sufficient to answer the question.
(D) The data in both the statements I and II together are not sufficient to answer the question.
(E) The data in both the statements I and II together are necessary to answer the question.

810. Directions: The question below is followed by two statements numbered I and II. Decide whether the data given in the statements are sufficient to answer the question. **Question:** Eight employees of a bank live on eight different floors of a building, the lowest floor being numbered 1 and the topmost floor numbered 8. On which floor does Anjali live? **I.** Exactly two persons live between Anjali and Bhaskar, and Bhaskar lives on floor number 5. **II.** Anjali lives on an even-numbered floor which is above the floor on which Bhaskar lives. [Moderate]

(A) The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
(B) The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
(C) The data either in statement I alone or in statement II alone are sufficient to answer the question.
(D) The data in both the statements I and II together are not sufficient to answer the question.
(E) The data in both the statements I and II together are necessary to answer the question.

811. Directions: The question below is followed by two statements numbered I and II. Decide whether the data given in the statements are sufficient to answer the question. **Question:** In which direction is point X situated with respect to point Y? **I.** A man starts from point Y, walks 5 km towards the east, turns left and walks 3 km, then turns left again and walks 8 km to reach point X. **II.** Point Z is 3 km to the north of point Y, and point X lies at a distance of 3 km from point Z. [Moderate]

(A) The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
(B) The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
(C) The data either in statement I alone or in statement II alone are sufficient to answer the question.
(D) The data in both the statements I and II together are not sufficient to answer the question.
(E) The data in both the statements I and II together are necessary to answer the question.

812. Directions: The question below is followed by three statements numbered I, II and III. Decide which of the statements are necessary to answer the question. **Question:** Six persons A, B, C, D, E and F sit in a straight row facing north. Who sits at the extreme right end of the row? **I.** A sits third to the left of D. **II.** C sits at the extreme left end of the row and B is an immediate neighbour of A. **III.** Exactly two persons sit between E and F. [Moderate]

(A) Only statements I and II are necessary to answer the question.
(B) Only statements II and III are necessary to answer the question.
(C) Only statements I and III are necessary to answer the question.
(D) The data in all the three statements I, II and III together are necessary to answer the question.
(E) The data even in all the three statements I, II and III together are not sufficient to answer the question.

813. Directions: The question below is followed by two statements numbered I and II. Decide whether the data given in the statements are sufficient to answer the question. **Question:** Eight officers P, Q, R, S, T, U, V and W sit around a circular table facing the centre. Who sits third to the right of Q? **I.** P sits exactly opposite Q; R sits second to the left of P; T sits third to the right of R; and S is an immediate neighbour of T. **II.** V sits second to the right of W, and U is an immediate neighbour of Q. [Difficult]

(A) The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
(B) The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
(C) The data either in statement I alone or in statement II alone are sufficient to answer the question.
(D) The data in both the statements I and II together are not sufficient to answer the question.
(E) The data in both the statements I and II together are necessary to answer the question.

814. Directions: The question below is followed by two statements numbered I and II. Decide whether the data given in the statements are sufficient to answer the question. **Question:** In a certain code language, what is the code for the word 'branch'? **I.** 'new branch opened today' is written as 'ka lo mi ne', and 'today is holiday' is written as 'ne pa zo'. **II.** 'branch manager is new' is written as 'lo ta pa mi', 'new manager arrived' is written as 'mi ta ru', and 'manager visited branch' is written as 'ta vi lo'. [Difficult]

(A) The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
(B) The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
(C) The data either in statement I alone or in statement II alone are sufficient to answer the question.
(D) The data in both the statements I and II together are not sufficient to answer the question.
(E) The data in both the statements I and II together are necessary to answer the question.

815. Directions: The question below is followed by two statements numbered I and II. Decide whether the data given in the statements are sufficient to answer the question. **Question:** What is the shortest

distance between point A and point E? **I.** A surveyor starts from point A and walks 9 m towards the east to reach point B, then turns left and walks 12 m to reach point C, then turns left and walks 9 m to reach point D, and finally turns left and walks 15 m to reach point E. **II.** Point A is 4 m to the north of point F, and point E is 1 m to the north of point F, all three points lying on one straight line. [Difficult]

(A) The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
(B) The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
(C) The data either in statement I alone or in statement II alone are sufficient to answer the question.
(D) The data in both the statements I and II together are not sufficient to answer the question.
(E) The data in both the statements I and II together are necessary to answer the question.

816. Directions: The question below is followed by three statements numbered I, II and III. Decide which of the statements is or are sufficient to answer the question. **Question:** Seven persons A, B, C, D, E, F and G sit in a straight row facing north. Who sits exactly in the middle of the row? **I.** B sits third to the right of G, and G sits at one of the extreme ends of the row. **II.** Exactly two persons sit between D and A, and C sits to the immediate right of A. **III.** E sits third to the left of F.[Difficult]

(A) The data in statement I alone are sufficient to answer the question, while the data in statement II alone and in statement III alone are not sufficient.
(B) The data in statement II alone are sufficient to answer the question, while the data in statement I alone and in statement III alone are not sufficient.
(C) The data in statement III alone are sufficient to answer the question, while the data in statement I alone and in statement II alone are not sufficient.
(D) The data in all the three statements I, II and III together are necessary to answer the question.
(E) The data even in all the three statements I, II and III together are not sufficient to answer the question.

817. Directions: The question below is followed by two statements numbered I and II. Decide whether the data given in the statements are sufficient to answer the question. **Question:** Eight officers attend departmental meetings in eight different months of the same year, namely January, February, March, April, May, June, July and August, one officer per month. In which month does Pankaj attend his meeting? **I.** Exactly two officers attend their meetings in the months between Pankaj's month and Rekha's month, and Rekha attends in a month having 31 days. **II.** Pankaj attends after Rekha but before the officer who attends in July. [Difficult]

(A) The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
(B) The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
(C) The data either in statement I alone or in statement II alone are sufficient to answer the question.
(D) The data in both the statements I and II together are not sufficient to answer the question.
(E) The data in both the statements I and II together are necessary to answer the question.

818. Directions: The question below is followed by two statements numbered I and II. Decide whether the data given in the statements are sufficient to answer the question. **Question:** In a batch of 45 candidates at a coaching centre, each scoring a different mark, what is Vinay's rank from the top? **I.** Sunil's rank is 10th from the top, exactly 20 candidates rank between Sunil and Vinay, and Vinay ranks below Sunil. **II.** The number of candidates who scored more than Vinay is exactly twice the number of candidates who scored more than Aarti, and Aarti's rank is 16th from the top. [Difficult]

(A) The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.

(B) The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
(C) The data either in statement I alone or in statement II alone are sufficient to answer the question.
(D) The data in both the statements I and II together are not sufficient to answer the question.
(E) The data in both the statements I and II together are necessary to answer the question.

819. Directions: The question below is followed by two statements numbered I and II. Decide whether the data given in the statements are sufficient to answer the question. **Question:** Five friends bought one article each from a showroom, the prices of the five articles being Rs. 1,200, Rs. 1,500, Rs. 1,800, Rs. 2,000 and Rs. 2,400, no two friends buying articles of the same price. What is the price of the article bought by Deepak? **I.** The price of Deepak's article is more than that of Farida's article and less than that of Girish's article, and Farida did not buy the cheapest article. **II.** The prices of the articles bought by Deepak and Farida add up to Rs. 3,300, and Farida's article costs less than Deepak's article. [Difficult]

(A) The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
(B) The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
(C) The data either in statement I alone or in statement II alone are sufficient to answer the question.
(D) The data in both the statements I and II together are not sufficient to answer the question.
(E) The data in both the statements I and II together are necessary to answer the question.

Section 2.11

2.11.1 Statement and assumption [checked]

820. Statement: "Use Shakti Detergent — it removes even the toughest stains." — An advertisement issued by a detergent company. Assumptions: I. People want their clothes to be free of stains. II. No other detergent in the market is able to remove tough stains. [Easy]

(A) Only assumption I is implicit
(B) Only assumption II is implicit
(C) Either I or II is implicit
(D) Neither I nor II is implicit
(E) Both I and II are implicit

821. Statement: "Customers are requested to bring their passbooks with them whenever they visit the branch for updating entries." — A notice displayed in a bank branch. Assumptions: I. Entries cannot be updated in the absence of the passbook. II. The customers of the branch possess passbooks. [Easy]

(A) Only assumption I is implicit
(B) Only assumption II is implicit
(C) Either I or II is implicit
(D) Neither I nor II is implicit
(E) Both I and II are implicit

822. Statement: "Deposit Rs. 10,000 in our new Suraksha Deposit Scheme and get a free accident insurance cover of Rs. 1 lakh." — An advertisement of a bank. Assumptions: I. People are attracted by an offer that carries a free benefit. II. Nobody will deposit money in the scheme if the free insurance cover is withdrawn. [Easy]

(A) Only assumption I is implicit
(B) Only assumption II is implicit
(C) Either I or II is implicit
(D) Neither I nor II is implicit
(E) Both I and II are implicit

823. Statement: "This ATM is temporarily out of service. Customers may kindly use the ATM at our Gandhi Road branch, about 500 metres from here." — A notice pasted on an ATM of Nirmal Bank. Assumptions: I. The ATM at the Gandhi Road branch is in working condition. II. Customers coming to this ATM are able to reach the Gandhi Road branch. [Easy]

(A) Only assumption I is implicit
(B) Only assumption II is implicit
(C) Either I or II is implicit
(D) Neither I nor II is implicit
(E) Both I and II are implicit

824. Statement: "If you want a personal loan in twenty-four hours, walk into any branch of Pragati Bank." — An advertisement. Assumptions: I. Pragati Bank is the only bank that gives personal loans. II. Pragati Bank is able to process personal loan applications quickly. [Easy]

(A) Only assumption I is implicit
(B) Only assumption II is implicit
(C) Either I or II is implicit
(D) Neither I nor II is implicit
(E) Both I and II are implicit

825. Statement: The Government has decided to raise the price of diesel by Rs. 2 per litre with effect from next month. Assumptions: I. The price of petrol will also be raised next month. II. People will stop buying diesel vehicles after the increase. [Easy]

(A) Only assumption I is implicit
(B) Only assumption II is implicit
(C) Either I or II is implicit
(D) Neither I nor II is implicit
(E) Both I and II are implicit

826. Statement: "An applicant for a basic savings account must submit either an Aadhaar card or a voter identity card as proof of identity." — A rule of a bank. Assumptions: I. An applicant for such an account will be having an Aadhaar card. II. An applicant for such an account will be having a voter identity card. [Easy]

(A) Only assumption I is implicit
(B) Only assumption II is implicit
(C) Either I or II is implicit
(D) Neither I nor II is implicit
(E) Both I and II are implicit

827. Statement: "With effect from 1st October, a savings account whose quarterly average balance is below Rs. 5,000 will attract a maintenance charge of Rs. 500 per year." — A notice issued by Vikas Bank. Assumptions: I. Some customers may maintain a higher balance in order to avoid paying the charge. II. The bank wishes to discourage the holding of very low-balance savings accounts. III. All customers whose balance is below Rs. 5,000 will close their accounts. [Moderate]

(A) Only I and II are implicit
(B) Only II and III are implicit
(C) Only I and III are implicit
(D) All I, II and III are implicit
(E) None of the assumptions is implicit

828. Statement: "Candidates who have secured at least 60% marks in graduation need not appear for the preliminary test and may directly appear for the main examination." — A recruitment notice of a public sector bank. Assumptions: I. Marks obtained in graduation are a reasonable indicator of the ability that the preliminary test is designed to measure. II. Some candidates applying for the post will have secured 60% or more in graduation. III. Candidates who have secured less than 60% in graduation cannot be recruited by the bank. [Moderate]

(A) Only I is implicit
(B) Only I and II are implicit
(C) Only II is implicit
(D) Only II and III are implicit
(E) All I, II and III are implicit

829. Statement: "All branch managers must ensure that the KYC verification of every newly opened account is completed within forty-eight hours of opening." — An instruction issued by the head office of a bank. Assumptions: I. Branch managers are in a position to get the verification completed within forty-eight hours. II. Delay in completing KYC verification is undesirable for the bank. III. Branch managers have so far been deliberately delaying KYC verification. [Moderate]

(A) Only II is implicit
(B) Only I and III are implicit
(C) Only III is implicit
(D) Only I and II are implicit
(E) All I, II and III are implicit

830. Statement: "The bank will remain closed on 15th August on account of Independence Day. Customers may use our net banking facility and ATMs for their transactions on that day." — A notice of a bank. Assumptions: I. Some customers may need to carry out transactions on 15th August. II. The net banking facility and the ATMs of the bank will be functional on 15th August. [Moderate]

(A) Only assumption I is implicit
(B) Only assumption II is implicit
(C) Either I or II is implicit
(D) Neither I nor II is implicit
(E) Both I and II are implicit

831. Statement: The Reserve Bank of India has reduced the repo rate by 25 basis points in its latest monetary policy review. Assumptions: I. All commercial banks will immediately reduce their lending rates by 25 basis points. II. The rate of inflation will rise sharply in the coming month. III. Banks will keep their deposit rates unchanged. [Moderate]

(A) Only I is implicit
(B) Only I and III are implicit
(C) Only II is implicit
(D) All I, II and III are implicit
(E) None of the assumptions is implicit

832. Statement: "Take a home loan from Sanchay Bank at 8.5% per annum — the lowest rate in the market today." — An advertisement of Sanchay Bank. Assumptions: I. Prospective borrowers compare the interest rates of different lenders before taking a home loan. II. No other bank in the market offers a home loan at a rate below 8.5%. III. Sanchay Bank has some knowledge of the home loan rates charged by other lenders. [Moderate]

(A) Only I is implicit
(B) Only I and II are implicit
(C) Only I and III are implicit
(D) Only III is implicit
(E) All I, II and III are implicit

833. Statement: The Government has made it compulsory for every rural branch of a public sector bank to engage at least one business correspondent in the villages allotted to it. Assumptions: I. Rural customers do not visit bank branches at all. II. A business correspondent can extend banking services to people who do not come to the branch. III. There is no need for business correspondents in urban areas. [Moderate]

(A) Only I is implicit
(B) Only II is implicit

(C) Only II and III are implicit
(D) Only I and II are implicit
(E) None of the assumptions is implicit

834. Statement: "In order to bring down its non-performing assets, Grameen Bank has decided to stop sanctioning unsecured personal loans of more than Rs. 5 lakh with immediate effect." Assumptions: I. A significant part of the bank's non-performing assets has arisen from large unsecured personal loans. II. The total lending of the bank will fall drastically in the coming year. III. A secured loan of the same size carries a lower risk of default than an unsecured one. [Difficult]

(A) Only I is implicit
(B) Only I and II are implicit
(C) Only II and III are implicit
(D) Only I and III are implicit
(E) All I, II and III are implicit

835. Statement: "Any branch whose customer-complaint ratio exceeds 5 complaints per 1,000 accounts in a quarter shall be taken up for a service review by the regional office." — A circular issued to all branch heads of a bank. Assumptions: I. The number of complaints received is a usable indicator of the quality of service at a branch. II. Branch heads would ordinarily prefer to avoid a service review by the regional office. III. Every complaint received by a branch is a genuine complaint. [Difficult]

(A) Only I and III are implicit
(B) Only I and II are implicit
(C) Only II and III are implicit
(D) All I, II and III are implicit
(E) None of the assumptions is implicit

836. Statement: "Despite the reminders sent by SMS before every due date, nearly 30% of the borrowers of Ujjwal Bank paid their equated monthly instalments after the due date last month." Assumptions: I. SMS reminders are useless as a means of improving repayment. II. The remaining 70% of the borrowers paid on time because of the SMS reminders. III. The bank has the mobile numbers of the borrowers to whom the reminders were sent. [Difficult]

(A) Only I is implicit
(B) Only II is implicit
(C) Only III is implicit
(D) Only I and II are implicit
(E) None of the assumptions is implicit

837. Statement: "An applicant for the housing subsidy must submit an income certificate issued by the competent authority on or after 1st April 2026." — A public notice issued by a housing board. Assumptions: I. An income certificate issued before 1st April 2026 may not correctly reflect the applicant's present income. II. Applicants are in a position to obtain a freshly issued income certificate from the competent authority. III. Every applicant for the subsidy has some income. [Difficult]

(A) Only I and II are implicit
(B) Only I is implicit
(C) Only II and III are implicit
(D) Only III is implicit
(E) All I, II and III are implicit

838. Statement: "We shall double the number of our rural branches over the next three years." — The Chairman of Uday Bank, at a press conference. Assumptions: I. The bank will be able to obtain the regulatory approvals needed for opening the new branches. II. Rural branches are expected to be commercially viable for the bank. III. The bank does not have any rural branch at present. [Difficult]

(A) Only III is implicit
(B) Only I is implicit
(C) Only I and II are implicit
(D) Only II and III are implicit
(E) All I, II and III are implicit

839. Statement: "Even a careful investor like you should keep at least six months' household expenses in a savings account before putting anything into equity." — A financial planner to his client, Mr. Anand. Assumptions: I. An unexpected expense or a loss of income can occur even to a careful person. II. Money kept in a savings account can be withdrawn at short notice. III. Mr. Anand's monthly household expenditure can be estimated with reasonable accuracy. [Difficult]

(A) Only I and II are implicit
(B) Only II and III are implicit
(C) Only I and III are implicit
(D) All I, II and III are implicit
(E) None of the assumptions is implicit

840. Statement: "The amount disbursed by banks as education loans this year was 22% higher than last year, although the number of education loan accounts rose by only 4% during the same period." — A report in a financial daily. Assumptions: I. The average size of an education loan has increased over the year. II. The cost of higher education has risen during the year. III. Banks have relaxed their eligibility norms for education loans. [Difficult]

(A) Only I is implicit
(B) Only II is implicit
(C) Only I and II are implicit
(D) Only III is implicit
(E) None of the assumptions is implicit

2.11.2 Statement and argument: strong vs weak [checked, 3 flagged]

841. Statement: Should every rural branch of a public sector bank be provided with a 24-hour ATM facility? Arguments: I. Yes, it will let villagers withdraw cash outside banking hours and will reduce the crowd at the branch counters during the day. II. No, villagers do not know how to operate machines. [Easy]

(A) Only argument I is strong
(B) Only argument II is strong
(C) Either I or II is strong
(D) Neither I nor II is strong
(E) Both I and II are strong

842. Statement: Should cheque books be discontinued altogether by Indian banks in favour of purely digital payment modes? Arguments: I. Yes, digital payments are settled faster and cost the bank far less to process than the physical clearing of a cheque. II. No, a large number of senior citizens and small traders still depend on cheques and are not comfortable with digital modes. [Easy]

(A) Only argument I is strong
(B) Only argument II is strong
(C) Either I or II is strong
(D) Neither I nor II is strong
(E) Both I and II are strong

843. Statement: Should it be made compulsory for every bank branch in India to have a wheelchair ramp at its entrance? Arguments: I. No, it will increase the construction cost for the banks. II. Yes, banking is an essential public service and it must be physically accessible to persons with disabilities. [Easy]

(A) Only argument I is strong
(B) Only argument II is strong
(C) Either I or II is strong
(D) Neither I nor II is strong
(E) Both I and II are strong

844. Statement: Should the Reserve Bank of India withdraw the Rs. 500 currency note from circulation? Arguments: I. Yes, it will put an end to all illegal activities in the country. II. No, this note was introduced only a few years ago. [Easy]

(A) Only argument I is strong
(B) Only argument II is strong
(C) Either I or II is strong
(D) Neither I nor II is strong
(E) Both I and II are strong

845. Statement: Should financial literacy be introduced as a compulsory subject in all government schools in India? Arguments: I. Yes, early awareness of saving, budgeting and digital-fraud safety will help students take better financial decisions and avoid debt traps as adults. II. No, students can anyway learn about money from their parents. [Easy]

(A) Only argument I is strong
(B) Only argument II is strong
(C) Either I or II is strong
(D) Neither I nor II is strong
(E) Both I and II are strong

846. Statement: Should all bank employees be compulsorily transferred to a different branch once every two years? Arguments: I. Yes, transfer is a part of every job. II. No, the employees will not like it. [Easy]

(A) Only argument I is strong
(B) Only argument II is strong
(C) Either I or II is strong
(D) Neither I nor II is strong
(E) Both I and II are strong

847. Statement: Should banks levy a service charge on cash deposits exceeding Rs. 1,00,000 made at the branch counter? Arguments: I. No, the money deposited belongs to the customer and the bank has no right over it. II. Yes, counting, verifying and securing large volumes of cash imposes a real cost on the bank in staff time and security, and the cost should be borne by the customer who uses that service. [Easy]

(A) Only argument I is strong
(B) Only argument II is strong
(C) Either I or II is strong
(D) Neither I nor II is strong
(E) Both I and II are strong

848. Statement: Should the Reserve Bank of India impose a ceiling on the rate of interest that micro-finance institutions may charge rural borrowers? Arguments: I. Yes, unregulated rates push poor borrowers into a spiral of repeat borrowing, and such lending has already produced episodes of severe distress in some states. II. No, if the ceiling is fixed below the cost of serving remote villages, micro-finance institutions will simply withdraw from those areas and the borrowers will go back to moneylenders charging still higher rates. [Moderate]

(A) Only argument I is strong
(B) Only argument II is strong
(C) Either I or II is strong
(D) Neither I nor II is strong
(E) Both I and II are strong

849. Statement: Should banks be permitted to publish the photographs of wilful defaulters in newspapers? Arguments: I. Yes, several other countries also name their defaulters publicly. II. No, publication amounts to public shaming before any judicial determination, while the law already provides recovery machinery through the Debt Recovery Tribunals and the SARFAESI route. [Moderate]

(A) Only argument I is strong
(B) Only argument II is strong
(C) Either I or II is strong
(D) Neither I nor II is strong
(E) Both I and II are strong

850. Statement: Should the branch banking model be completely replaced by a digital-only model in India within the next five years? Arguments: I. No, a large share of Indian households still lack reliable connectivity and assured digital literacy, and a complete replacement would shut them out of banking entirely. II. Yes, the cost per transaction in digital banking is a small fraction of the cost of a counter transaction. [Moderate]

(A) Only argument I is strong
(B) Only argument II is strong
(C) Either I or II is strong
(D) Neither I nor II is strong
(E) Both I and II are strong

851. Statement: Should the salary accounts of all government employees be maintained only with public sector banks? Arguments: I. Yes, public sector banks are owned by the Government of India. II. No, private banks charge lower fees. [Moderate]

(A) Only argument I is strong
(B) Only argument II is strong
(C) Either I or II is strong
(D) Neither I nor II is strong
(E) Both I and II are strong

852. Statement: Should the daily ATM withdrawal limit on savings accounts be raised from Rs. 25,000 to Rs. 1,00,000? Arguments: I. Yes, customers should be free to use their own money as they wish. II. No, the daily limit is a fraud-containment device: it caps the loss if a card and PIN are compromised, and raising it fourfold multiplies the amount a fraudster can strip from an account before the customer notices. [Moderate]

(A) Only argument I is strong
(B) Only argument II is strong
(C) Either I or II is strong
(D) Neither I nor II is strong
(E) Both I and II are strong

853. Statement: Should cash transactions above Rs. 2,00,000 be made a criminal offence in India? Arguments: I. No, such transactions already attract a monetary penalty under the income tax law, and adding a criminal prosecution would clog the courts without adding deterrence proportionate to the conduct. II. Yes, it will completely eliminate black money from the Indian economy. [Moderate]

(A) Only argument I is strong
(B) Only argument II is strong
(C) Either I or II is strong
(D) Neither I nor II is strong
(E) Both I and II are strong

854. Statement: Should banks be allowed to sell insurance policies and mutual fund units at their branch counters? Arguments: I. Yes, it gives customers a single trusted point of access to a range of financial products and gives the bank fee income that does not consume its capital. II. No, branch staff working under sales targets have repeatedly been found mis-selling such products to trusting depositors, so the depositor's confidence in the bank is turned against him. [Moderate]

(A) Only argument I is strong
(B) Only argument II is strong
(C) Either I or II is strong
(D) Neither I nor II is strong
(E) None of these

855. Statement: Should the Government of India infuse fresh capital of Rs. 50,000 crore into loss-making public sector banks? Arguments: I. Yes, without additional capital these banks cannot meet the regulatory capital-adequacy requirement and will be forced to curtail fresh lending, which will choke credit to small businesses. II. No, repeated infusions of taxpayer money without any accompanying governance reform only postpone the problem and create a moral hazard, since the management learns that losses will always be covered. III. Yes, the Government has enough money to do so. [Difficult]

(A) Only I and II are strong
(B) Only I and III are strong
(C) Only II and III are strong
(D) All three are strong
(E) None of these

856. Statement: Should the Reserve Bank of India permit large corporate houses to own and run commercial banks in India? Arguments: I. Yes, large corporate houses can bring in the substantial capital that the banking system needs and they have experience of running very large organisations. II. No, banking in India has always been done by bankers. III. No, connected lending — a bank lending to companies of the same promoter group — is the classic route to bank failure and is extremely difficult for a supervisor to detect in time. [Difficult]

(A) Only I and II are strong
(B) Only I and III are strong
(C) Only II and III are strong
(D) All three are strong
(E) None of these

857. Statement: Should the Reserve Bank of India prescribe a single uniform rate of interest on education loans across all banks? Arguments: I. Yes, at present two students taking the same course, borrowing the same amount and offering the same security may pay rates differing by several percentage points depending only on which bank they happened to approach. II. No, the interest rate is the price of risk, and banks differ in their cost of funds; if a uniform rate is forced, banks will ration education loans to only the safest applicants and access will shrink for exactly the students who need loans most. III. Yes, education is completely free in India. [Difficult]

(A) Only I is strong
(B) Only II is strong
(C) Only I and III are strong
(D) Only I and II are strong
(E) All three are strong

858. Statement: Should banks be permitted to use artificial intelligence models as the sole basis for approving or rejecting retail loan applications, without any human review? Arguments: I. No, a model trained on past lending data can silently reproduce the biases present in that data, and a rejected applicant has no way of knowing or contesting the reason for the decision. II. Yes, machines never accept bribes. III. Yes, computers work much faster than human beings. [Difficult]

(A) Only I is strong
(B) Only II and III are strong
(C) Only I and II are strong
(D) All three are strong
(E) None of these

859. Statement: Should the Government waive all outstanding crop loans of farmers in the drought-declared districts of Maharashtra? Arguments: I. Yes, the crop failure in these districts arose from a declared drought and not from any default of the borrower, and without relief these farmers will

be driven to private moneylenders. II. No, a blanket waiver rewards the farmer who did not repay and penalises the neighbour who repaid on time, and it damages the credit discipline on which future institutional lending to the same farmers depends. III. No, farmers ought to save during good years for the bad ones. [Difficult]

(A) Only I is strong
(B) Only III is strong
(C) Only I and II are strong
(D) Only II and III are strong
(E) All three are strong

860. Statement: A private bank proposes to close 40 of its 200 semi-urban branches and to migrate those customers to its mobile banking application. Which one of the following, if true, would be the STRONGEST argument against the proposal? [Difficult]

(A) The bank's competitors have not closed any branch in that region so far.
(B) In the 40 locations concerned, more than half the account holders are pensioners who need branch-based life-certificate submission and cash services that the application does not provide.
(C) Closing the branches will reduce the total staff strength of the bank.
(D) The mobile banking application was launched only eighteen months ago.
(E) Some customers have posted complaints about the application on social media.

861. Statement: Should the Government of India replace all cash-based subsidy payments with Direct Benefit Transfer (DBT) credited to the beneficiary's bank account? Which one of the following is the STRONGEST argument in favour of the proposal? [Difficult]

(A) Yes, direct transfer of benefits is already practised in many developed countries.
(B) Yes, it will reduce the paperwork and the workload of government offices.
(C) Yes, subsidy routed through several layers of intermediaries has historically leaked before reaching the beneficiary, whereas a credit to a verified account is traceable end to end and reaches the intended person.
(D) Yes, the beneficiaries will additionally earn savings-bank interest on the amount credited.
(E) None of these

2.11.3 Statement and conclusion / inference [checked, 1 flagged]

862. Statement: "In view of the sharp rise in fraudulent online transactions, Sundaram Bank has advised all its customers never to share their OTP with anyone."
Conclusions:
I. Sharing the OTP with another person can make a fraudulent transaction possible.
II. All the customers of Sundaram Bank have already lost money to online fraud. [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusions I and II follow

863. Statement: Notice at a branch of Konark Bank — "The branch will remain closed on Saturday for annual maintenance. Customers may use the ATM and internet banking as usual."
Conclusions:
I. Some banking services will remain available to customers on Saturday.
II. Customers will not be able to do any banking on Saturday. [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows

(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusions I and II follow

864. Statement: "Rakesh, deposit this cheque before 3 p.m. today; otherwise it will be sent for clearing only on the next working day." — A branch manager to his assistant.
Conclusions:
I. Cheques deposited after 3 p.m. are never sent for clearing.
II. There is a cut-off time for a cheque to be taken up for clearing on the same day. [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusions I and II follow

865. Statement: "Because of a technical upgrade, the mobile banking application of Konark Bank will not be available from 11 p.m. on Friday to 3 a.m. on Saturday."
Conclusions:
I. The application will be unavailable for a stretch of 4 hours.
II. For a part of Friday night the application cannot be used by customers. [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusions I and II follow

866. Statement: "The loss-making Perundurai branch will either be shifted to the new commercial complex or be closed down by December," announced the Regional Head.
Conclusions:
I. The Perundurai branch will be shifted to the new commercial complex by December.
II. The Perundurai branch will be closed down by December. [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusions I and II follow

867. Statement: Meera withdrew Rs. 5,000 from the ATM at Gandhipuram at 6 p.m. on Monday.
Conclusions:
I. Meera had a balance of more than Rs. 10,000 in her account on Monday.
II. Meera needed the cash for a medical emergency. [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusions I and II follow

868. Statement: "In the last quarter the number of customers using our mobile banking application rose by 30%, while the footfall at our branches fell by 12%," said the General Manager of Vaigai Bank.
Conclusions:

I. During the last quarter, mobile application usage and branch footfall moved in opposite directions.
II. The total number of customers of Vaigai Bank fell by 12% during the last quarter. [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusions I and II follow

869. Statement: A survey of 1,200 account holders of Nandini Bank found that 65% of the respondents below 35 years of age use UPI at least once a day, whereas only 18% of the respondents above 55 years do so.
Conclusions:
I. Among the surveyed account holders, daily use of UPI is more common in the below-35 group than in the above-55 group.
II. More than half of all the 1,200 surveyed account holders use UPI daily.
III. No surveyed account holder above 55 years of age uses UPI. [Moderate]

(A) Only conclusion I follows
(B) Only conclusions I and II follow
(C) Only conclusions I and III follow
(D) All the three conclusions follow
(E) None of the conclusions follows

870. Statement: The regulator has directed all banks to complete re-KYC of every account opened before 2018 by 31 March; accounts whose KYC is not updated by that date will be marked "inoperative".
Conclusions:
I. Some accounts opened before 2018 may be marked inoperative after 31 March.
II. Banks will have to reach out to the holders of accounts opened before 2018.
III. Every account opened before 2018 is at present inoperative. [Moderate]

(A) Only conclusion I follows
(B) Only conclusions I and II follow
(C) Only conclusion III follows
(D) Only conclusions II and III follow
(E) All the three conclusions follow

871. Statement: A circular of Cauvery Bank states — "With effect from 1 August, a cash deposit exceeding Rs. 2 lakh in a single day will be accepted only at the branch where the account is maintained; deposits of up to Rs. 2 lakh in a day may be made at any branch of the bank."
Conclusions:
I. On 10 August a customer wishing to deposit Rs. 3 lakh in cash in one day cannot do so at a branch other than the one where her account is maintained.
II. On 10 August a cash deposit of Rs. 50,000 may be made at a branch other than the account-holding branch.
III. From 1 August the bank will not accept any cash deposit exceeding Rs. 2 lakh. [Moderate]

(A) Only conclusion I follows
(B) Only conclusions I and II follow
(C) Only conclusions II and III follow
(D) Only conclusion III follows
(E) All the three conclusions follow

872. Statement: Bank of Coimbatore has waived the minimum-balance requirement on all salary

accounts, but at the same time has raised the annual debit-card fee from Rs. 150 to Rs. 250.
Which of the following can most reasonably be inferred from the statement? [Moderate]

(A) The bank expects to earn no revenue at all from salary accounts hereafter
(B) Every customer of the bank now pays Rs. 250 a year as debit-card fee
(C) Salary accounts of the bank earlier carried no charge of any kind
(D) The bank is willing to give up one source of income from account holders while increasing another
(E) None of these

873. Statement: The average monthly business handled per employee at the Erode branch was Rs. 40 lakh. Five new employees then joined the branch; the total monthly business handled by the branch remained unchanged, and the average per employee fell to Rs. 32 lakh.
Conclusions:
I. Before the new joinings, the branch had 20 employees.
II. The branch handles a total monthly business of Rs. 800 lakh. [Moderate]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either conclusion I or conclusion II follows
(D) Neither conclusion I nor conclusion II follows
(E) Both conclusions I and II follow

874. Statement: All the loan files cleared by the Nagpur branch last week were verified by the credit officer. Some of the files verified by the credit officer were rejected at the regional office.
Which of the following **definitely does NOT follow** from the statement? [Moderate]

(A) Every loan file cleared by the Nagpur branch last week passed through the credit officer
(B) At least one loan file was rejected at the regional office
(C) No loan file cleared by the Nagpur branch last week was verified by the credit officer
(D) Some files rejected at the regional office had been verified by the credit officer
(E) None of these

875. Statement: "Our new digital gold savings scheme has attracted two lakh investors in three months — far more than our physical gold-loan product ever managed in any comparable period," said the Chairman of Vaishnavi Bank.
Conclusions:
I. The digital gold savings scheme has been in the market for at least three months.
II. The physical gold-loan product of the bank has been discontinued.
III. In this bank's experience, a digital product has drawn investors faster than a physical one. [Moderate]

(A) Only conclusion I follows
(B) Only conclusions I and II follow
(C) Only conclusions I and III follow
(D) Only conclusion III follows
(E) All the three conclusions follow

876. Statement: Pallavi Bank claims that its newly installed AI-based fraud-detection system is highly effective, because in the six months since installation the number of fraud complaints received by the bank has fallen by 40%.
Which of the following, if true, would **most weaken** the bank's claim? [Difficult]

(A) The system was installed at all branches of the bank on the same day
(B) Two other large banks installed similar systems during the same six months

(C) During the same six months the bank's online complaint portal was shut for repairs, and complaints could be lodged only by post
(D) The total number of transactions handled by the bank rose during the same six months
(E) The system cost the bank Rs. 12 crore to install and configure

877. Statement: The management of Ganga Bank argues that its small-town branches are not viable and that they should be replaced by business correspondents operating in the same towns.
Which of the following, if true, **most strengthens** the management's argument? [Difficult]

(A) Business correspondents are paid a commission on every transaction they handle
(B) Customers in small towns say they prefer face-to-face banking at a branch
(C) The bank currently operates about 400 branches in small towns
(D) Over the last three years the average small-town branch of the bank has recorded operating costs exceeding its income, while business correspondents in the same towns have operated at a surplus
(E) None of these

878. Statement: To reduce long queues, Ambika Bank has decided to install token-dispensing machines at all its urban branches.
Which of the following is/are **implicit** in the statement?
I. Queues at the urban branches are long enough to call for action.
II. A token-dispensing machine can help regulate the flow of waiting customers.
III. The rural branches of the bank have no queues at all. [Difficult]

(A) Only I is implicit
(B) Only II is implicit
(C) Only I and II are implicit
(D) Only II and III are implicit
(E) All the three are implicit

879. Statement: A regulatory report notes: "Every bank that reported a rise in gross NPA also reported a fall in net profit. Some of the banks that reported a fall in net profit did not cut their dividend."
Conclusions:
I. Some banks that reported a rise in gross NPA did not cut their dividend.
II. Every bank that cut its dividend had reported a rise in gross NPA.
III. Some banks that did not cut their dividend had reported a fall in net profit. [Difficult]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Only conclusion III follows
(D) Only conclusions I and III follow
(E) None of the conclusions follows

880. Statement: Between April and June, the home-loan disbursements made by Shakti Bank grew by 18% over the previous quarter; yet the bank's total home-loan outstanding at the end of June was lower than it was at the end of March.
Which of the following, if true, best explains this apparent discrepancy? [Difficult]

(A) Interest rates on home loans were reduced in the month of May
(B) The bank opened 20 new branches during the quarter
(C) The number of home-loan applications received by the bank rose sharply during the quarter
(D) A large number of existing home-loan borrowers prepaid their loans or shifted them to other lenders during the quarter
(E) None of these

881. Statement: A study of 40,000 retail borrowers found that borrowers who were sent a single reminder SMS three days before the EMI date defaulted 22% less often than borrowers who were sent no reminder at all. However, borrowers who were sent a reminder SMS every day for a week before the EMI date defaulted at very nearly the same rate as those who were sent no reminder.
Which of the following can most reasonably be inferred from the study? [Difficult]

(A) Reminder messages have no effect at all on repayment behaviour
(B) Sending daily reminders causes borrowers to default on their EMIs
(C) Borrowers who default on EMIs do not read SMS messages
(D) How often a reminder is sent matters, not merely whether a reminder is sent
(E) Every borrower of the bank should be sent a reminder SMS every day

882. Statement: Policy of Vaigai Bank — "A safe-deposit locker will be allotted to an applicant **only if** the applicant maintains a fixed deposit of at least Rs. 1 lakh with the branch **and** has held an account with that branch for at least two years."
Conclusions:
I. Shalini, who has held an account with the branch for five years, will certainly be allotted a locker.
II. Prakash, who has held an account with the branch for one year, will not be allotted a locker.
III. Anyone maintaining a fixed deposit of Rs. 2 lakh with the branch is entitled to a locker. [Difficult]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Only conclusions I and III follow
(D) Only conclusions II and III follow
(E) None of these

2.11.4 Statement and course of action [checked, 1 flagged]

883. Statement: At the Sitapur branch of Ganga Bank, customers have to wait for more than an hour at the cash counters on the first three working days of every month, when salaries and pensions are credited.
Courses of action:
I. The branch should deploy additional counter staff during the first week of every month.
II. The branch should refuse to accept cash transactions during the first three working days of every month. [Easy]

(A) Only I follows
(B) Only II follows
(C) Either I or II follows
(D) Neither I nor II follows
(E) Both I and II follow

884. Statement: A large number of senior citizens in Ratnagiri district have complained that they are unable to operate the bank's mobile application to check whether their monthly pension has been credited.
Courses of action:
I. The bank should conduct simple, hands-on digital-banking sessions for senior citizens at its branches.
II. The bank should continue to provide passbook updation and counter enquiry facilities for customers who cannot use the application. [Easy]

(A) Only I follows
(B) Only II follows
(C) Either I or II follows
(D) Neither I nor II follows
(E) Both I and II follow

885. Statement: A review shows that 40 per cent of the education loans sanctioned by the Nagpur branch of a bank in the last two years have turned into non-performing assets, while the figure for the

bank as a whole is 6 per cent.
Courses of action:
I. The bank should stop sanctioning education loans at all its branches.
II. The bank should get the loan appraisal and follow-up process of the Nagpur branch independently reviewed. [Easy]

(A) Only I follows
(B) Only II follows
(C) Either I or II follows
(D) Neither I nor II follows
(E) Both I and II follow

886. Statement: A newspaper has reported that the retail price of onions in Pune has risen by Rs. 20 per kg in the last one week.
Courses of action:
I. The government should immediately ban the cultivation of onions in the state.
II. The people of Pune should stop buying any vegetables from retail shops. [Easy]

(A) Only I follows
(B) Only II follows
(C) Either I or II follows
(D) Neither I nor II follows
(E) Both I and II follow

887. Statement: Several cheque books despatched by ordinary post by a bank have been stolen in transit in the Salem region, and forged cheques drawn on those books have been presented at three branches.
Courses of action:
I. The bank should deliver cheque books only through a tracked courier with delivery confirmation, or across the counter against proof of identity.
II. The bank should stop issuing cheque books to all its customers in the Salem region. [Easy]

(A) Only I follows
(B) Only II follows
(C) Either I or II follows
(D) Neither I nor II follows
(E) Both I and II follow

888. Statement: Heavy rain has washed away the approach road to the Kalahandi branch of a bank, and neither the staff nor the customers are able to reach the branch premises. The road is expected to take about a month to repair.
Courses of action:
I. The bank should temporarily shift the branch's operations to suitable alternative premises that can be reached, until the road is repaired.
II. The bank should inform its customers of the temporary arrangement through SMS and through a notice displayed at the existing branch. [Easy]

(A) Only I follows
(B) Only II follows
(C) Either I or II follows
(D) Neither I nor II follows
(E) Both I and II follow

889. Statement: The lease of the building housing the main branch of a bank at Trichy expires next month. The owner has informed the bank that he will not extend the lease on any terms, but that he is willing to sell the building to the bank outright.
Courses of action:
I. The bank should negotiate with the owner and purchase the building.
II. The bank should shift the branch to other suitable rented premises in the same locality. [Easy]

(A) Only I follows
(B) Only II follows
(C) Either I or II follows
(D) Neither I nor II follows
(E) Both I and II follow

890. Statement: Over the last six months the Ludhiana branch of Chenab Bank has received 180 complaints that the customer's account was debited at the ATM but the cash was not dispensed.
Courses of action:
I. The bank should carry out a technical audit of the cash dispensing machines at the affected ATMs.
II. The bank should put in place a fast-track mechanism to reverse such failed transactions within the timeline prescribed by the regulator.
III. The bank should permanently shut down all its ATMs in Punjab. [Moderate]

(A) Only I and II follow
(B) Only II and III follow
(C) Only I and III follow
(D) All I, II and III follow
(E) Only I follows

891. Statement: A survey in a public sector bank shows that 45 per cent of the officers in its SME credit department will retire within the next three years, and that no fresh recruitment has been made to that department in the last six years.
Courses of action:
I. The bank should start a recruitment drive for credit officers without further delay.
II. The bank should design a structured training programme so that its existing junior officers can take up SME credit appraisal.
III. The bank should close down its SME credit department. [Moderate]

(A) Only II and III follow
(B) Only I follows
(C) Only I and II follow
(D) All I, II and III follow
(E) None of these

892. Statement: An internal check at the Chennai branch of a bank has revealed that a cashier has, over the last two years, withdrawn small sums from dormant accounts by using forged withdrawal slips, the total amount involved being Rs. 4,80,000.
Question: Which of the following would be the *most appropriate* immediate course of action for the bank? [Moderate]

(A) The branch manager should quietly ask the cashier to make good the amount and treat the matter as closed
(B) The bank should place the cashier under suspension, report the matter to the competent authority and the regulator, and order a formal internal investigation
(C) The bank should transfer the cashier to another branch and watch his conduct there
(D) The bank should immediately close all the dormant accounts maintained at the branch
(E) None of these

893. Statement: A rumour circulating on social media claims that a certain co-operative bank is about to be liquidated. Since yesterday morning, long queues of depositors have formed outside its branches to withdraw their deposits.
Courses of action:
I. The bank should keep all its branches closed for a fortnight so that the crowds disperse.
II. The bank should stop accepting fresh deposits until the rumour dies down. [Moderate]

(A) Only I follows
(B) Only II follows
(C) Either I or II follows
(D) Neither I nor II follows
(E) Both I and II follow

894. Statement: An internal review shows that in the last quarter, 22 per cent of the loan applications received at the rural branches of a bank were rejected solely because the applicants had submitted incomplete documents.
Courses of action:
I. The bank should display and distribute a simple checklist of the required documents at every rural branch.
II. The bank should train its front-desk staff to scrutinise every application for completeness at the time it is received.
III. The bank should send an SMS to the applicant stating exactly which document is missing. [Moderate]

(A) Only I and II follow
(B) Only I and III follow
(C) Only II and III follow
(D) All I, II and III follow
(E) Only I follows

895. Statement: The government has announced that from the next quarter all subsidy payments will be credited directly to the bank accounts of the beneficiaries. A survey in one district finds that about 30 per cent of the intended beneficiaries there do not hold a bank account.
Courses of action:
I. The announcement should be withdrawn until every beneficiary in the country holds a bank account.
II. Time-bound account-opening camps should be organised in the district, in coordination with the banks, before the scheme comes into force. [Moderate]

(A) Only I follows
(B) Only II follows
(C) Either I or II follows
(D) Neither I nor II follows
(E) Both I and II follow

896. Statement: Customers of a bank have complained that its telephone call centre keeps them on hold for an average of 12 minutes, and the bank's own data show that 35 per cent of the calls are abandoned by the caller before an agent answers.
Courses of action:
I. The bank should advise customers to visit the branch instead of telephoning the call centre.
II. The bank should reduce the number of services handled by the call centre so that fewer customers call it.
III. The bank should increase the number of agents during peak hours and introduce a call-back facility for waiting callers. [Moderate]

(A) Only I follows
(B) Only I and II follow
(C) Only III follows
(D) Only II and III follow
(E) All I, II and III follow

897. Statement: A study within a large bank finds that the twenty branches which recorded the highest growth in low-cost deposits last year are also the twenty branches which recorded the highest number of customer-service complaints.
Courses of action:
I. The bank should stop giving deposit growth targets to its branches altogether.
II. The bank should include a service-quality score alongside the business target in the performance appraisal of every branch.
III. The bank should examine whether aggressive selling practices at these twenty branches are the cause of the complaints. [Difficult]

(A) Only I and II follow
(B) Only II and III follow
(C) Only I follows
(D) All I, II and III follow
(E) Only III follows

898. Statement: The fraud-monitoring unit of a bank finds that in 70 per cent of the successful phishing frauds reported last year, the victim had clicked on a link contained in an SMS which claimed that his KYC had expired and would be blocked the same day.
Which of the following can be regarded as an appropriate course of action for the bank?
I. Customers are unable to distinguish a genuine message of the bank from a fraudulent one.
II. The bank should send all its genuine messages only from its registered sender identity, and should repeatedly tell customers that it never sends a KYC link by SMS.
III. The bank should do away with the requirement of periodic KYC updation. [Difficult]

(A) Only II
(B) Only I
(C) Only I and II
(D) Only II and III
(E) All I, II and III

899. Statement: A bank's home-loan disbursement in Bengaluru has fallen by 30 per cent over the last year, while a competitor bank operating in the same city has grown by 15 per cent in the same period. Both banks quote the same rate of interest and the same processing fee, but the competitor sanctions a home loan within 5 working days whereas this bank takes 21 working days.
Question: Which of the following would be the *most appropriate* course of action for the bank?[Difficult]

(A) The bank should reduce its home-loan interest rate to a level below the competitor's
(B) The bank should re-engineer its sanction process so as to cut down the time taken to sanction a home loan
(C) The bank should withdraw from the home-loan business in Bengaluru
(D) The bank should substantially increase its advertising budget for home loans in Bengaluru
(E) None of these

900. Statement: A regional rural bank finds that recovery in its crop-loan portfolio in one district, which has been officially declared drought-affected this season, has fallen to 38 per cent, as against 91 per cent in the rest of its area of operation.
Courses of action:
I. The bank should immediately initiate coercive recovery proceedings against every defaulting farmer in that district.
II. The bank should stop all fresh crop lending in that district.
III. The bank should examine restructuring of the crop loans of the affected district in terms of the regulator's guidelines for areas hit by a natural calamity. [Difficult]

(A) Only I and II follow
(B) Only I follows
(C) Only II follows
(D) Only III follows
(E) All I, II and III follow

901. Statement: The board of a bank notes that its cost-to-income ratio has risen from 48 per cent to 57 per cent over two years. The rise is entirely attributable to an increase in operating expenses, the total income having remained flat over the period.
Question: Which of the following would be the *most appropriate* course of action for the bank?[Difficult]

(A) The bank should retrench 20 per cent of its workforce with immediate effect
(B) The bank should close down every branch whose individual profit is below the bank's average
(C) The bank should sharply raise the service charges levied on all savings bank accounts

(D) The bank should carry out a line-item analysis of the increase in operating expenses and simultaneously draw up a plan to raise its income
(E) None of these

902. Statement: The licence for the core banking software used by a mid-sized bank expires in four months, and the vendor has demanded a three-fold increase in the annual fee for renewal. The bank's technology team estimates that migrating to any alternative vendor's system would take about nine months.
Courses of action:
I. The bank should terminate the present contract at once and switch over to an alternative vendor's system before the licence expires.
II. The bank should negotiate a short extension with the present vendor while simultaneously beginning the migration to an alternative system.
III. The bank should carry on its operations manually until the new system is in place. [Difficult]

(A) Only I and III follow
(B) Only I follows
(C) Only II follows
(D) Only III follows
(E) None of these

903. Statement: An inspection of the Kanpur branch of a bank reveals that the same officer creates new customer identities, appraises and sanctions small personal loans, and authorises their disbursement, with no second person checking any part of the process. No irregularity in any particular loan has so far been established.
Courses of action:
I. The officer should be dismissed from service with immediate effect.
II. The branch should stop sanctioning personal loans. [Difficult]

(A) Only I follows
(B) Only II follows
(C) Either I or II follows
(D) Both I and II follow
(E) None of these

2.11.5 Cause and effect [checked, 1 flagged]

904. Two statements numbered I and II are given below. There may be a cause-and-effect relationship between them, or they may be the effects of independent causes or of a common cause. Read both statements and mark the correct option.
I. The Reserve Bank of India reduced the repo rate by 50 basis points in its April review.
II. Most public sector banks announced a cut in their home loan interest rates in May. [Easy]

(A) Statement I is the cause and statement II is its effect
(B) Statement II is the cause and statement I is its effect
(C) Both statements I and II are independent causes
(D) Both statements I and II are effects of independent causes
(E) Both statements I and II are effects of a common cause

905. Two statements numbered I and II are given below. There may be a cause-and-effect relationship between them, or they may be the effects of independent causes or of a common cause. Read both statements and mark the correct option.
I. All bank branches in Chennai remained closed on Tuesday.
II. The State Government declared Tuesday a public holiday in view of a severe cyclone warning. [Easy]

(A) Statement I is the cause and statement II is its effect
(B) Statement II is the cause and statement I is its effect

(C) Both statements I and II are independent causes
(D) Both statements I and II are effects of independent causes
(E) Both statements I and II are effects of a common cause

906. Two statements numbered I and II are given below. There may be a cause-and-effect relationship between them, or they may be the effects of independent causes or of a common cause. Read both statements and mark the correct option.
I. All schools and colleges in Kolhapur district were shut on Monday.
II. All bank branches in Kolhapur district remained closed on Monday. [Easy]

(A) Statement I is the cause and statement II is its effect
(B) Statement II is the cause and statement I is its effect
(C) Both statements I and II are independent causes
(D) Both statements I and II are effects of independent causes
(E) Both statements I and II are effects of a common cause

907. Statement: The number of customers using the automated cash-deposit machine at the Nashik branch of Godavari Bank has nearly doubled in the past two months.
Which of the following can be a **possible cause** of the above situation? [Easy]

(A) The bank has closed two of its four manual cash-deposit counters at that branch.
(B) Customers of the branch have begun complaining of long waiting time at the machine.
(C) The bank proposes to install a similar machine at its Pune branch next year.
(D) The total deposits of the bank fell during the last financial year.
(E) None of these

908. Statement: The Reserve Bank of India has directed all commercial banks to open at least one branch in every village with a population above 5,000 within the next two years.
Which of the following can be a **possible effect** of the above directive? [Easy]

(A) A large number of villages in the country still do not have access to formal banking services.
(B) The Reserve Bank of India had earlier eased the norms for opening branches without prior approval.
(C) Banks may have to redeploy a part of their urban staff to rural locations in the coming months.
(D) The rural literacy rate in the country has been rising steadily over the last decade.
(E) None of these

909. Two statements numbered I and II are given below. There may be a cause-and-effect relationship between them, or they may be the effects of independent causes or of a common cause. Read both statements and mark the correct option.
I. Kaveri Bank, a private bank, announced 8% annual interest on savings bank deposits, the highest rate offered in the market.
II. The number of new savings accounts opened at Kaveri Bank rose sharply during the next three months. [Easy]

(A) Statement I is the cause and statement II is its effect
(B) Statement II is the cause and statement I is its effect
(C) Both statements I and II are independent causes
(D) Both statements I and II are effects of independent causes
(E) Both statements I and II are effects of a common cause

910. Two statements numbered I and II are given below. There may be a cause-and-effect relationship between them, or they may be the effects of independent causes or of a common cause. Read both statements and mark the correct option.

I. Yamuna Bank installed a diesel generator set at its Bhilwara branch last month.
II. Frequent and prolonged power cuts had been disrupting counter work at the Bhilwara branch for the past one year. [Easy]

(A) Statement I is the cause and statement II is its effect
(B) Statement II is the cause and statement I is its effect
(C) Both statements I and II are independent causes
(D) Both statements I and II are effects of independent causes
(E) Both statements I and II are effects of a common cause

911. Two statements numbered I and II are given below. There may be a cause-and-effect relationship between them, or they may be the effects of independent causes or of a common cause. Read both statements and mark the correct option.
I. The State Government announced a waiver of crop loans up to Rs. 1,00,000 for small and marginal farmers.
II. Recovery of agricultural loans by banks in the State fell sharply in the quarter following the announcement. [Moderate]

(A) Statement I is the cause and statement II is its effect
(B) Statement II is the cause and statement I is its effect
(C) Both statements I and II are independent causes
(D) Both statements I and II are effects of independent causes
(E) Both statements I and II are effects of a common cause

912. Two statements numbered I and II are given below. There may be a cause-and-effect relationship between them, or they may be the effects of independent causes or of a common cause. Read both statements and mark the correct option.
I. Domestic airlines announced a reduction in ticket fares on most of their routes this month.
II. The Central Government's expenditure on fuel subsidy fell substantially this month. [Moderate]

(A) Statement I is the cause and statement II is its effect
(B) Statement II is the cause and statement I is its effect
(C) Both statements I and II are independent causes
(D) Both statements I and II are effects of independent causes
(E) Both statements I and II are effects of a common cause

913. Two statements numbered I and II are given below. There may be a cause-and-effect relationship between them, or they may be the effects of independent causes or of a common cause. Read both statements and mark the correct option.
I. The number of road accidents on the national highway near the town rose sharply during December.
II. Fixed deposit collections at the town's bank branches rose sharply during December. [Moderate]

(A) Statement I is the cause and statement II is its effect
(B) Statement II is the cause and statement I is its effect
(C) Both statements I and II are independent causes
(D) Both statements I and II are effects of independent causes
(E) Both statements I and II are effects of a common cause

914. The regional manager of Chenab Bank claims that launching the bank's new mobile banking app in the Indore region caused the 30% rise in the number of transactions recorded there during the last quarter. Which of the following, if true, would **most weaken** this claim? [Moderate]

(A) The app received an average user rating of 4.2 out of 5 on app stores.
(B) The bank spent nearly Rs. 2 crore on developing and testing the app.

(C) In the Kanpur region, where the app has not yet been launched, the number of transactions rose by 31% during the same quarter.
(D) The bank plans to launch the app in two more regions next year.
(E) None of these

915. A survey found that districts in which bank branches conducted financial-literacy camps showed a much higher rate of new account openings than districts in which no camps were held. The surveyors concluded that the camps caused the higher rate. Which of the following, if true, would **most strengthen** the conclusion? [Moderate]

(A) In districts chosen *at random* for the camps, new account openings rose by 22%, while in otherwise comparable districts without camps they rose by only 3%.
(B) Banks generally choose to hold such camps in districts where people are already eager to open bank accounts.
(C) The camps were conducted mostly on weekends so that villagers could attend them easily.
(D) The total number of bank branches in the country has been increasing every year.
(E) None of these

916. Statement: Sutlej Bank has decided to keep its Vashi branch open to customers on all Sundays with effect from next month.
Which of the following can be a **possible cause** of this decision? [Moderate]

(A) Customers of the Vashi branch will now be able to complete their banking work on holidays.
(B) The employees' union of the bank has objected to the decision.
(C) The bank will have to pay overtime allowance to the staff posted at that branch.
(D) Other banks in Vashi may also start opening their branches on Sundays.
(E) None of these

917. Two statements numbered I and II are given below. There may be a cause-and-effect relationship between them, or they may be the effects of independent causes or of a common cause. Read both statements and mark the correct option.
I. The total operating expenditure of Narmada Bank for the year fell by 7% compared with the previous year.
II. During the year the bank closed 12 of its loss-making branches in the region. [Moderate]

(A) Statement I is the cause and statement II is its effect
(B) Statement II is the cause and statement I is its effect
(C) Both statements I and II are independent causes
(D) Both statements I and II are effects of independent causes
(E) Both statements I and II are effects of a common cause

918. Three statements relating to the same district are given below. One of them is the cause and the other two are its effects. Read all three and mark the correct option.
I. Sugarcane growers in the district have not been paid by the sugar mills for the last eight months.
II. Farmers of the district blocked the national highway for two days last week.
III. Applications for gold loans at bank branches in the district rose by 40% this quarter. [Difficult]

(A) Statement I is the cause, and statements II and III are its effects.
(B) Statement II is the cause, and statements I and III are its effects.
(C) Statement III is the cause, and statements I and II are its effects.
(D) Statements I and II are independent causes and statement III is their common effect.
(E) None of these

919. A study by Ravi Bank found that customers holding its Platinum credit card maintain, on

average, fixed deposit balances four times larger than those of customers without the card. The bank concluded that issuing Platinum cards to many more customers would raise its deposit base. Which of the following, if true, exposes the **most serious flaw** in this conclusion? [Difficult]

(A) The Platinum credit card carries an annual fee of Rs. 2,500.
(B) Some Platinum card holders use the card mainly for online shopping.
(C) The bank's total deposit base grew by 9% during the last financial year.
(D) The bank issues the Platinum card only to those customers who already maintain fixed deposits of more than Rs. 5,00,000.
(E) None of these

920. Two statements numbered I and II are given below. There may be a cause-and-effect relationship between them, or they may be the effects of independent causes or of a common cause. Read both statements and mark the correct option.
I. Tapti Bank's net profit for the second quarter fell by 18% compared with the same quarter of the previous year.
II. During the second quarter the bank set aside an additional provision of Rs. 450 crore against bad loans. [Difficult]

(A) Statement I is the cause and statement II is its effect
(B) Statement II is the cause and statement I is its effect
(C) Both statements I and II are independent causes
(D) Both statements I and II are effects of independent causes
(E) Both statements I and II are effects of a common cause

921. During the last financial year Kosi Bank increased the number of its ATMs in Ranchi city by 25%, yet the total number of cash withdrawals made at the bank's ATMs in that city fell by 12% over the same period. Which of the following, if true, **best explains** this apparent contradiction? [Difficult]

(A) The bank spent about Rs. 40 lakh on installing the new ATMs.
(B) The bank does not charge any fee for the first five ATM withdrawals in a month.
(C) During the year a large majority of the bank's customers in Ranchi shifted to UPI-based payments, which sharply reduced their need to hold cash.
(D) The new ATMs were installed mainly on the outskirts of the city.
(E) None of these

922. Officials of Betwa Bank state that installing CCTV cameras at 50 of its branches last year caused the fall in cash-handling errors reported at those branches. Which of the following, if true, would **most support** this statement? [Difficult]

(A) Cash-handling errors fell by about the same proportion during the year at the bank's branches that have no CCTV cameras.
(B) The 50 branches were selected for cameras because they had recorded the highest error rates in the preceding year.
(C) At the bank's branches without cameras the error rate remained unchanged during the year, and no change was made in cash-handling procedure or staffing at the 50 branches.
(D) Each CCTV camera cost the bank about Rs. 15,000 to install and maintain.
(E) None of these

923. The marketing head of Bhima Bank argues: *'Ever since we began sending an SMS reminder three days before every EMI due date, our EMI default rate has fallen from* 6% *to* 4%*. The SMS reminders are therefore the reason for the fall.'* The argument depends on which of the following assumptions? [Difficult]

(A) Every borrower of the bank owns a mobile phone.
(B) Sending SMS reminders costs the bank less than making reminder telephone calls.
(C) The bank's default rate will fall further, to 2%, during the coming year.
(D) No other factor capable of reducing the EMI default rate changed during the same period.
(E) None of these

924. Two statements numbered I and II are given below. There may be a cause-and-effect relationship between them, or they may be the effects of independent causes or of a common cause. Read both statements and mark the correct option.
I. Shares of several public sector banks fell sharply on the stock exchange on Monday.
II. The Government announced on Sunday that it would infuse fresh capital into public sector banks by issuing new shares to itself at a concessional price. [Difficult]

(A) Statement I is the cause and statement II is its effect
(B) Statement II is the cause and statement I is its effect
(C) Both statements I and II are independent causes
(D) Both statements I and II are effects of independent causes
(E) Both statements I and II are effects of a common cause

2.11.6 Passage-based conclusions [checked, 1 flagged]

925. Read the passage and decide which of the conclusions follows.
Passage: The mobile application of Meghdoot Bank recorded 2 crore transactions in June, up from 1.5 crore in May. The bank attributes the rise to the UPI-linked credit facility that it launched in May.
Conclusion I: The number of transactions on the bank's application in June was higher than in May.
Conclusion II: The UPI-linked credit facility is the only reason for the rise in transactions. [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Either I or II follows
(D) Neither I nor II follows
(E) Both I and II follow

926. Read the passage and decide which of the conclusions follows.
Passage: Only those employees of Sunrise Bank who have completed five years of continuous service are eligible for the staff housing loan scheme. Ramesh joined Sunrise Bank three years ago and has been in continuous service since then.
Conclusion I: Ramesh will definitely become eligible for the staff housing loan scheme after two more years.
Conclusion II: Ramesh is not eligible for the staff housing loan scheme at present. [Easy]

(A) Both I and II follow
(B) Only conclusion II follows
(C) Only conclusion I follows
(D) Either I or II follows
(E) Neither I nor II follows

927. Read the passage and decide which of the conclusions follows.
Passage: In a survey of 1,200 customers of Pragati Bank, 780 said they preferred internet banking to visiting a branch, and the remaining customers said they preferred visiting a branch.
Conclusion I: Fewer than half of the surveyed customers preferred visiting a branch.
Conclusion II: All the 1,200 surveyed customers have internet access at home. [Easy]

(A) Neither I nor II follows
(B) Either I or II follows
(C) Only conclusion I follows
(D) Only conclusion II follows
(E) Both I and II follow

928. Read the passage and decide which of the conclusions follows.
Passage: Owing to a server upgrade, the ATM services of Nirman Bank will remain unavailable from 11 pm on Saturday to 4 am on Sunday. Customers are advised to use branch counters during working hours or to plan their withdrawals in advance.
Conclusion I: All customers of Nirman Bank will face difficulty on Saturday night.
Conclusion II: The ATM services of Nirman Bank will be unavailable for a stretch of five hours.[Easy]

(A) Only conclusion I follows
(B) Both I and II follow
(C) Neither I nor II follows
(D) Only conclusion II follows
(E) Either I or II follows

929. Read the passage and decide which of the conclusions follows.
Passage: In the last quarter, Vaibhav Finance disbursed education loans worth Rs. 250 crore, which was 25% of its total loan disbursal for that quarter. The company disburses only education loans and non-education loans.
Conclusion I: The total loan disbursal of the company in that quarter was Rs. 1,000 crore.
Conclusion II: Non-education loans worth Rs. 750 crore were disbursed in that quarter. [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Neither I nor II follows
(D) Either I or II follows
(E) Both I and II follow

930. Read the passage and decide which of the conclusions follows.
Passage: The recruitment notice of Konark Bank states that to apply for the post of Junior Officer a candidate must either be a graduate in commerce or hold a diploma in banking. Sneha's application for the post has been scrutinised and accepted as valid.
Conclusion I: Sneha is a graduate in commerce.
Conclusion II: Sneha holds a diploma in banking. [Easy]

(A) Only conclusion I follows
(B) Either I or II follows
(C) Only conclusion II follows
(D) Both I and II follow
(E) Neither I nor II follows

931. Read the passage and decide which of the conclusions follows.
Passage: A notice displayed at the cash counter of Girija Bank reads: 'Cash deposits above Rs. 50,000 require the depositor to furnish PAN.' Mr. Iyer deposited Rs. 35,000 in cash at this counter today.
Conclusion I: Mr. Iyer had to furnish his PAN for today's deposit.
Conclusion II: Mr. Iyer does not possess a PAN. [Easy]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Both I and II follow
(D) Neither I nor II follows
(E) Either I or II follows

932. Read the passage and decide which of the conclusions follows.
Passage: Between April and September, the number of Jan Dhan accounts at Sahyadri Bank rose from 4.8 lakh to 6.0 lakh. Over the same period the average balance per Jan Dhan account fell from Rs. 2,500 to Rs. 2,200. The bank explains that most newly opened accounts begin with a zero or minimal balance.
Conclusion I: The total money held in Jan Dhan accounts at the bank fell between April and September.
Conclusion II: The number of Jan Dhan accounts at the bank rose by 25% over the period.[Moderate]

(A) Only conclusion I follows
(B) Neither I nor II follows
(C) Only conclusion II follows
(D) Both I and II follow
(E) Either I or II follows

933. Read the passage and decide which of the conclusions follows.
Passage: At the Nashik branch of Ambika Bank, all the cashiers are trained in fake-note detection. Some of the clerks at this branch are also trained in fake-note detection. No trainee at this branch is trained in fake-note detection.
Conclusion I: No trainee at the Nashik branch is a cashier.
Conclusion II: Some clerks at the Nashik branch are not trainees. [Moderate]

(A) Both I and II follow
(B) Only conclusion I follows
(C) Only conclusion II follows
(D) Neither I nor II follows
(E) Either I or II follows

934. Read the passage and decide which of the three conclusions follow.
Passage: Since Kaveri Bank introduced a charge of Rs. 20 on every branch cash withdrawal below Rs. 5,000, the number of such withdrawals at its branches has fallen by 38%, while withdrawals at its ATMs have risen by 30%.
I: Branch cash withdrawals below Rs. 5,000 have become costlier for the customers of Kaveri Bank.
II: The total number of cash withdrawals at Kaveri Bank, counting branches and ATMs together, has declined.
III: Kaveri Bank earns a fee from every branch withdrawal that it processes. [Moderate]

(A) Only I follows
(B) Only II follows
(C) Only I and III follow
(D) Only II and III follow
(E) All three follow

935. Read the passage and decide which of the three conclusions follow.
Passage: The second-quarter results of Ujjwal Bank show total income of Rs. 840 crore, of which interest income is Rs. 630 crore. Operating expenses for the quarter were Rs. 500 crore and provisions were Rs. 220 crore.
I: Interest income formed 75% of the bank's total income in the quarter.
II: The bank's non-interest income in the quarter was Rs. 210 crore.
III: Provisions in the quarter exceeded 30% of total income. [Moderate]

(A) Only I follows
(B) Only I and II follow
(C) Only II and III follow
(D) All three follow
(E) None of these

936. Read the passage and decide which of the three conclusions follow.
Passage: Rekha, Suman and Tarun are the three officers of the Salem branch who are in the promotion list this year. The bank's rule is that an officer is promoted only if the officer has cleared the JAIIB examination and has no pending audit objection. Rekha has cleared JAIIB but has one pending audit objection. Suman has no pending audit objection but has never appeared for JAIIB. Tarun has cleared JAIIB and has no pending audit objection.
I: Tarun will definitely be promoted this year.
II: Rekha will not be promoted this year.
III: Suman will not be promoted this year. [Moderate]

(A) Only I follows
(B) Only II follows
(C) Only II and III follow
(D) Only I and III follow
(E) All three follow

937. A report classifies every branch of the public sector banks as either rural or urban. It notes that rural branches form 33% of the total branch network of these banks but account for only 11% of their total deposits. It further notes that the average staff strength of a rural branch is less than half that of an urban branch.
Which of the following can be *inferred* from the report? [Moderate]

(A) The rural branches of public sector banks are running at a loss.
(B) Rural customers of public sector banks do not trust the banking system.
(C) The average deposit held per rural branch is lower than the average deposit held per urban branch.
(D) Public sector banks intend to reduce the number of their rural branches.
(E) Rural branches attract only small-value deposits.

938. Read the passage and decide which of the conclusions follows.
Passage: The number of complaints about ATM transactions received by the banking ombudsman fell from 24,000 in 2022-23 to 18,000 in 2023-24. Over the same two years, the total number of complaints of all types received rose from 80,000 to 1,20,000.
Conclusion I: ATM complaints as a share of total complaints fell by more than half between the two years.
Conclusion II: The number of non-ATM complaints rose by more than 80% between the two years. [Moderate]

(A) Only conclusion I follows
(B) Only conclusion II follows
(C) Both I and II follow
(D) Neither I nor II follows
(E) Either I or II follows

939. Read the passage and decide which of the three conclusions follow.
Passage: At a press briefing, the Managing Director of Sampark Bank said, 'Every loan account that our field officers flagged in the first quarter as showing early stress was placed under monthly monitoring. Not one account placed under monthly monitoring has slipped into the non-performing category so far. However, three accounts that our field officers did not flag have slipped into the non-performing category this year.'
I: Some accounts that slipped into the non-performing category this year were not under monthly monitoring.
II: The field officers failed to flag every stressed account in the first quarter.
III: Monthly monitoring is what prevented the flagged accounts from becoming non-performing. [Difficult]

(A) Only I follows
(B) Only I and II follow
(C) Only III follows
(D) Only II and III follow
(E) None of these

940. Read the passage and decide which of the three conclusions follow.
Passage: In 2023-24 the retail loan book of Trishul Bank stood at Rs. 9,600 crore, made up of home loans of Rs. 4,800 crore, vehicle loans of Rs. 2,400 crore and personal loans, which formed the remainder. In 2024-25 the retail loan book grew by 25%, home loans grew by 20% and vehicle loans grew by 50%; the personal loan book made up the balance.
I: Personal loans grew by 10% in 2024-25.
II: In 2024-25, home loans formed less than 48% of the retail loan book.
III: Vehicle loans grew faster than the retail loan book as a whole. [Difficult]

(A) Only I follows
(B) Only I and II follow
(C) Only I and III follow
(D) Only III follows
(E) All three follow

941. A study of 5,000 borrowers of Nandan Bank found that borrowers who were given a financial-literacy module before disbursal defaulted at a rate of 4%, while those who were not given the module defaulted at 9%. The bank concluded that the module halves the risk of default.
Which of the following, if true, most seriously *weakens* the bank's conclusion? [Difficult]

(A) The financial-literacy module ran for 90 minutes and was delivered in the local language.
(B) The study covered borrowers spread across 14 states of the country.
(C) Several borrowers who attended the module told the surveyors that they found it useful.
(D) The module was offered only to borrowers whose credit score was already above 750, and was not offered to the rest.
(E) Industry-wide default rates remained broadly unchanged over the period of the study.

942. Ashoka Bank has decided to shut 40 of its low-footfall branches and to redeploy the staff of those branches to its digital-service centres. The bank has stated that this step will not reduce the quality of service available to the customers of the branches being shut.
Which of the following is an *assumption* implicit in the bank's statement? [Difficult]

(A) All the 40 branches being shut are located in rural areas.
(B) Digital-service centres cost less to operate than physical branches.
(C) The customers of the branches being shut can obtain the same services through digital or other alternative channels.
(D) The staff being redeployed will require no retraining of any kind.
(E) No other bank in the country is shutting any of its branches.

943. Read the passage and decide which of the three conclusions follow.
Passage: A circular of Ashoka Bank states: 'A branch is rated Grade A if and only if it meets both its deposit target and its CASA target. Any branch that misses its deposit target is placed under the Regional Manager's review.' In the last cycle the Trichy branch was not placed under the Regional Manager's review and was not rated Grade A.
I: The Trichy branch met its deposit target in the last cycle.
II: The Trichy branch missed its CASA target in the last cycle.
III: Every branch placed under the Regional Manager's review had missed its deposit target. [Difficult]

(A) Only I follows
(B) Only I and II follow
(C) Only II and III follow
(D) Only I and III follow
(E) All three follow

944. Despite raising the interest rate on its savings accounts from 3% to 4% in April, Nandan Bank found that its total savings deposits in September were lower than in March.
Which of the following, if true, best *explains* this outcome? [Difficult]

(A) The competitors of Nandan Bank continued to offer 3% on savings accounts throughout the period.
(B) Nandan Bank opened 30 new branches between April and September.
(C) The fixed deposit rates of Nandan Bank remained unchanged at 6.5% through the period.
(D) The mobile application of Nandan Bank was rated highly by its customers during the period.
(E) In July the bank introduced a monthly penalty of Rs. 500 on accounts falling below the minimum balance, after which a very large number of small savings accounts were closed.

945. Read the passage and decide which of the three conclusions follow.
Passage: A branch of Konark Bank has 62 employees, and every employee is attached to exactly one of three desks: deposits, loans or remittances. The number of employees at the deposits desk is twice the number at the remittances desk, and the loans desk has 6 employees more than the remittances desk. Every employee at the loans desk has cleared the CAIIB examination and no employee at the remittances desk has cleared it. Nothing is stated about the deposits desk.
I: At least 20 employees of the branch have cleared CAIIB.
II: Exactly 20 employees of the branch have cleared CAIIB.
III: More than 45% of the employees of the branch are at the deposits desk. [Difficult]

(A) Only I follows
(B) Only I and II follow
(C) Only II and III follow
(D) Only I and III follow
(E) All three follow

2.11.7 Decision making and eligibility criteria [checked]

946. Criteria for recruitment as Clerk at Sampada Bank. The candidate must:
(i) be a graduate with at least 60% marks;
(ii) be aged between 21 and 28 years as on 01.01.2024;
(iii) have scored at least 50% in the written test.
Case: Anjali Deshmukh was born on 14 March 1999. She is a graduate with 68% marks and has scored 57% in the written test. [Easy]

(A) The candidate is to be selected
(B) The candidate is not to be selected
(C) The case is to be referred to the General Manager
(D) The case is to be referred to the Chairman
(E) The data provided are inadequate to decide

947. Criteria for a personal loan at Konark Bank. The applicant must:
(i) be a salaried person with a net monthly income of at least Rs. 30,000;
(ii) have been in continuous employment with the present employer for at least 2 years;
(iii) not be more than 55 years of age.
Case: Ramesh Iyer is 47 years old and is a salaried employee drawing a net monthly income of Rs. 42,000. He joined his present employer 11 months ago. [Easy]

(A) The loan is to be sanctioned
(B) The loan is not to be sanctioned
(C) The case is to be referred to the Regional Manager
(D) The case is to be referred to the Chairman
(E) The data provided are inadequate to decide

948. Criteria for an education loan at Purvanchal Bank. The application is to be sanctioned if:
(i) the student has secured admission to a recognised institute;
(ii) a parent or guardian joins as co-applicant and has an annual income of at least Rs. 3,00,000;
(iii) the loan sought does not exceed Rs. 10,00,000.
Case: Farhan Qureshi has secured admission to a recognised engineering college and requires a loan of Rs. 7,50,000. His father is willing to join as co-applicant. [Easy]

(A) The loan is to be sanctioned
(B) The loan is not to be sanctioned
(C) The case is to be referred to the Zonal Head
(D) The case is to be referred to the Chairman

(E) The data provided are inadequate to decide

949. Statement: A branch of a private bank at Nashik has been receiving repeated complaints that customers have to wait for more than 45 minutes at its single cash counter during the first week of every month.
Courses of action:
I. The branch should open additional cash counters during the first week of every month.
II. The branch should stop accepting cash transactions during the first week of every month. [Easy]

(A) Only I follows
(B) Only II follows
(C) Either I or II follows
(D) Neither I nor II follows
(E) Both I and II follow

950. Criteria for selection as Probationary Officer at Trimurti Bank. The candidate must:
(i) be a post-graduate in any discipline with at least 55% marks;
(ii) be aged between 22 and 30 years as on 01.07.2024;
(iii) have cleared both the written test and the interview.
However, if a candidate satisfies all conditions except (i) but is a graduate with at least 70% marks, the case is to be referred to the General Manager.
Case: Sneha Kulkarni was born on 09 February 1997. She is a graduate with 74% marks and is not a post-graduate. She has cleared both the written test and the interview. [Easy]

(A) The candidate is to be selected
(B) The candidate is not to be selected
(C) The case is to be referred to the General Manager
(D) The case is to be referred to the Chairman
(E) The data provided are inadequate to decide

951. Criteria for a housing loan at Shalimar Bank. The loan may be sanctioned if:
(i) the applicant's net monthly income is at least Rs. 25,000;
(ii) the proposed EMI does not exceed 40% of the applicant's net monthly income.
Case: Vikram Rao has a net monthly income of Rs. 60,000 and the EMI on the loan he has applied for works out to Rs. 26,500. [Easy]

(A) The loan is to be sanctioned
(B) The loan is not to be sanctioned
(C) The case is to be referred to the Regional Manager
(D) The case is to be referred to the Chairman
(E) The data provided are inadequate to decide

952. Criteria for opening a Senior Citizen Term Deposit account at Suvarna Bank. A person may open the account if he or she
(i) has attained the age of 60 years on the date of application, **or**
(ii) is aged between 55 and 60 years, has retired under a Voluntary Retirement Scheme, and applies within one month of the date of retirement;
and **in either case** produces a PAN card.
Which one of the following persons is eligible? [Easy]

(A) Mr. Suresh Nair, aged 58 years, who retired under a Voluntary Retirement Scheme four months ago and holds a PAN card
(B) Mrs. Latika Bose, aged 61 years, who does not hold a PAN card
(C) Mr. Arvind Pillai, aged 63 years, who holds a PAN card
(D) Mr. Deepak Jain, aged 54 years, who retired under a Voluntary Retirement Scheme ten days ago and holds a PAN card

(E) None of these

953. Criteria for an agricultural term loan at Godavari Gramin Bank. The loan may be sanctioned if the applicant:
(i) owns at least 2 acres of irrigated land;
(ii) is aged between 21 and 60 years as on 01.04.2024;
(iii) has no outstanding default with any bank;
(iv) seeks a loan not exceeding Rs. 5,00,000.
However:
(a) if all conditions except (i) are satisfied but the applicant owns at least 4 acres of unirrigated land, the case is to be referred to the Regional Manager;
(b) if all conditions except (iv) are satisfied but the applicant offers collateral worth at least twice the loan amount, the case is to be referred to the General Manager.
Case: Balwant Singh is 44 years old, owns 5 acres of unirrigated land and no irrigated land, has no outstanding default with any bank, and seeks a loan of Rs. 4,20,000. [Moderate]

(A) The loan is to be sanctioned
(B) The loan is not to be sanctioned
(C) The case is to be referred to the Regional Manager
(D) The case is to be referred to the General Manager
(E) The data provided are inadequate to decide

954. Criteria for a working-capital limit to an MSME unit at Vindhya Bank. The limit may be sanctioned if the firm:
(i) has been in operation for at least 3 years;
(ii) had an annual turnover of at least Rs. 50 lakh in the last financial year;
(iii) earned a net profit in each of the last two financial years;
(iv) has existing borrowings from other banks not exceeding Rs. 20 lakh.
However, if all conditions except (iii) are satisfied but the firm earned a profit in the latest financial year and its loss in the earlier year was less than Rs. 2 lakh, the case is to be referred to the Credit Committee.
Case: Mahalaxmi Traders has been in operation for 6 years. Its turnover in the last financial year was Rs. 72 lakh. It earned a net profit of Rs. 3.5 lakh in the last financial year and incurred a loss of Rs. 1.4 lakh in the year before that. It has existing borrowings of Rs. 26 lakh from another bank. [Moderate]

(A) The limit is to be sanctioned
(B) The limit is not to be sanctioned
(C) The case is to be referred to the Credit Committee
(D) The case is to be referred to the Chairman
(E) The data provided are inadequate to decide

955. Neha Agarwal has applied to Kalinga Bank for a housing loan for a term of 20 years. The bank's rules are:
(i) the total of all EMIs, including the proposed one, must not exceed 45% of the applicant's net monthly income;
(ii) the EMI works out to Rs. 900 per month for every Rs. 1 lakh of loan for a 20-year term;
(iii) the loan must not exceed 80% of the value of the property;
(iv) the loan must not exceed Rs. 40 lakh.
Her net monthly income is Rs. 80,000, she already pays an EMI of Rs. 9,000 on a car loan, and the property is valued at Rs. 50 lakh. What is the maximum housing loan she can be sanctioned? [Moderate]

(A) Rs. 25 lakh
(B) Rs. 30 lakh
(C) Rs. 36 lakh
(D) Rs. 40 lakh
(E) None of these

956. Statement: Several ATMs of a public sector bank in a district have been found dispensing soiled and torn notes, and a number of customers have posted complaints about this on social media.
Courses of action:
I. The bank should instruct the agency that loads cash into these ATMs to load only sorted, machine-fit notes.
II. The bank should carry out surprise inspections of ATM cash loading in the district. [Moderate]

(A) Only I follows
(B) Only II follows
(C) Either I or II follows
(D) Neither I nor II follows
(E) Both I and II follow

957. Criteria for the post of Assistant Manager (Rural Development) at Chambal Bank, to be applied as on 01.09.2024**.** The candidate must:
(i) be a graduate in Agriculture or Agricultural Engineering with at least 60% marks;
(ii) be aged between 21 and 32 years;
(iii) be willing to serve at rural branches for at least 3 years;
(iv) have passed the bank's computer proficiency test.
Which one of the following candidates is **NOT** eligible? [Moderate]

(A) Rajat Tiwari, aged 26, B.Sc. (Agriculture) with 64%, willing to serve 4 years at rural branches, has passed the computer proficiency test
(B) Meenakshi Yadav, aged 31, B.Tech (Agricultural Engineering) with 61%, willing to serve 3 years at rural branches, has passed the computer proficiency test
(C) Sandeep Mahto, aged 23, B.Sc. (Agriculture) with 72%, willing to serve 5 years at rural branches, has passed the computer proficiency test
(D) Kavita Sahu, aged 29, B.Sc. (Agriculture) with 68%, willing to serve 3 years at rural branches, has not appeared for the computer proficiency test
(E) All of them are eligible

958. Criteria for promotion to Scale II at Kaveri Bank, to be applied as on 01.01.2025**.** The officer must:
(i) have completed at least 5 years of service in Scale I;
(ii) have been rated 'Good' or better in each of the last three annual appraisals;
(iii) have completed at least one rural or semi-urban posting of 2 years.
However, an officer with at least 8 years of service in Scale I may be considered even if one of the last three appraisals is rated 'Average', provided the latest appraisal is rated 'Very Good'; such a case is to be referred to the Promotion Board.
Case: Mr. Ashok Bhatt joined Scale I on 15 June 2018. His appraisals for 2022, 2023 and 2024 were rated 'Very Good', 'Average' and 'Very Good' respectively. He has served for 2 years at a semi-urban branch. [Moderate]

(A) The officer is to be promoted
(B) The officer is not to be promoted
(C) The case is to be referred to the Promotion Board
(D) The case is to be referred to the Chairman
(E) The data provided are inadequate to decide

959. Statement: The number of customers hiring lockers at an old branch of a bank has fallen sharply after a newer branch of the same bank, three kilometres away in the same city, began offering

lockers at a much lower annual rent.

Courses of action:

I. The old branch should immediately cut its locker rent to below that of the new branch.

II. The bank should review its locker rent policy so as to keep it consistent across branches in the same city.

III. The bank should ascertain whether the difference in rent is justified by a difference in the facilities offered at the two branches. [Moderate]

(A) Only I and II follow
(B) Only II follows
(C) Only II and III follow
(D) Only I and III follow
(E) All of I, II and III follow

960. Criteria for selection as Specialist Officer (IT) at Narmada Bank, to be applied as on 01.08.2024**.** The candidate must:

(i) hold a B.E. or B.Tech in Computer Science or Information Technology with at least 60% aggregate;
(ii) have at least 2 years of post-qualification experience in the IT department of a scheduled commercial bank;
(iii) be aged between 23 and 32 years;
(iv) have scored at least 70 marks in the online examination.

However:

(a) if all conditions except (ii) are satisfied but the candidate holds an M.Tech in Computer Science or Information Technology with at least 65%, the case is to be referred to the Deputy General Manager;
(b) if all conditions except (iv) are satisfied but the candidate has scored at least 60 marks and has more than 5 years of experience of the kind described in (ii), the case is to be referred to the General Manager.

Case: Mr. Pranav Shetty was born on 12 November 1993. He holds a B.Tech (Information Technology) with 63%, has worked for 6 years in the IT department of a scheduled commercial bank after obtaining that degree, and scored 66 marks in the online examination. [Difficult]

(A) The candidate is to be selected
(B) The candidate is not to be selected
(C) The case is to be referred to the Deputy General Manager
(D) The case is to be referred to the General Manager
(E) The data provided are inadequate to decide

961. Criteria for a car loan at Sahyadri Bank. The loan may be sanctioned if the applicant:

(i) has a net annual income of at least Rs. 6,00,000;
(ii) has total EMI obligations, including the proposed EMI, not exceeding 50% of net monthly income;
(iii) will not be more than 60 years of age when the loan matures;
(iv) has a credit score of at least 700.

However, if all conditions except (iv) are satisfied but the credit score is between 650 and 699 and the applicant maintains a fixed deposit with the bank of at least 25% of the loan amount, the case is to be referred to the Regional Head.

Case: Ms. Ritika Sharma is 52 years old with a net annual income of Rs. 9,60,000. She seeks a car loan of Rs. 6,00,000 for 7 years, on which the EMI is Rs. 9,600. She already pays EMIs of Rs. 24,000 per month on other loans. Her credit score is 672 and she maintains a fixed deposit of Rs. 1,35,000 with the bank. [Difficult]

(A) The loan is to be sanctioned
(B) The loan is not to be sanctioned
(C) The case is to be referred to the Regional Head
(D) The case is to be referred to the Chairman
(E) The data provided are inadequate to decide

962. Vaibhav Chauhan needs a loan of Rs. 8,00,000 for 3 years and is comparing three schemes.
Scheme P: interest at a flat rate of 8% per annum on the full amount for the whole term, plus a processing fee of Rs. 5,000.
Scheme Q: total interest over the term works out to Rs. 1,28,000, plus a processing fee of 1% of the loan amount.
Scheme R: interest at a flat rate of 7.5% per annum on the full amount for the whole term, with no processing fee but a one-time insurance premium of Rs. 12,000.
Which scheme should he choose, and what will his total cost of borrowing be? [Difficult]

(A) Scheme P, Rs. 1,97,000
(B) Scheme Q, Rs. 1,36,000
(C) Scheme R, Rs. 1,92,000
(D) Scheme Q, Rs. 1,28,000
(E) None of these

963. Criteria for allotment of staff quarters at a bank's centre. Quarters may be allotted if the employee:
(i) is a confirmed employee with at least 3 years of service at the present centre;
(ii) does not own a house within 25 km of the centre;
(iii) draws a basic pay of not more than Rs. 65,000 per month.
However:
(a) if all conditions except (i) are satisfied but the employee has been transferred to the centre on promotion within the last six months, the case is to be referred to the Chief Manager;
(b) if all conditions except (ii) are satisfied but the house owned is let out on a registered lease of at least 2 years, the case is to be referred to the Welfare Committee.
Which one of the following cases is to be referred to the **Welfare Committee**? [Difficult]

(A) Mr. Nitin Kale, confirmed, 5 years at the present centre, owns a flat 12 km away which is let out on a registered 3-year lease, basic pay Rs. 58,000
(B) Ms. Reena Thomas, confirmed, 4 years at the present centre, owns a house 40 km away, basic pay Rs. 62,000
(C) Mr. Jaideep Roy, confirmed, transferred to the centre on promotion 4 months ago, owns no house near the centre, basic pay Rs. 70,000
(D) Ms. Anita Gowda, confirmed, 2 years at the present centre, owns a flat 8 km away which is let out on a registered 3-year lease, basic pay Rs. 55,000
(E) None of these

964. Rules for fixing a Kisan Credit Card limit at Tungabhadra Gramin Bank. The limit is built up as follows:
(i) crop-cultivation component = scale of finance per acre × area cultivated;
(ii) add 10% of component (i) towards post-harvest and household expenses;
(iii) add 20% of component (i) towards farm-asset maintenance and crop insurance;
(iv) if the resulting limit exceeds Rs. 3,00,000, collateral security must be obtained; otherwise the limit is sanctioned collateral-free.
The scale of finance for the crop grown is Rs. 32,000 per acre, and Shivappa Hugar cultivates 6.5 acres. What is his limit, and is collateral required? [Difficult]

(A) Rs. 2,70,400, and it is collateral-free
(B) Rs. 2,70,400, and collateral security is required
(C) Rs. 2,49,600, and it is collateral-free
(D) Rs. 3,00,000, and collateral security is required
(E) None of these

965. Statement: During an internal check, the manager of a bank branch finds that a cashier has on several occasions taken cash from the counter overnight and replaced it the next morning. The cash

balance has never remained short beyond a single day and no customer has suffered any loss. Which of the following should be the **FIRST** course of action for the Branch Manager? [Difficult]

(A) Ignore the matter, since the cash was always replaced and no customer suffered any loss
(B) Report the matter to the controlling office and act on the bank's staff conduct rules, placing the cashier under suspension pending an inquiry
(C) Warn the cashier orally and move him to a non-cash counter
(D) Recover an equivalent amount from the cashier's salary and treat the matter as closed
(E) Wait until a customer complaint is received before taking any step

966. Rules of the Awas Sahayata interest subsidy scheme at Sarayu Bank. A borrower is eligible for the subsidy only if:
(i) the household's annual income is not more than Rs. 12,00,000;
(ii) neither the applicant nor any member of the household already owns a pucca house anywhere in India;
(iii) the carpet area of the new dwelling does not exceed 160 square metres;
(iv) the adult woman of the household is an owner or a co-owner of the dwelling, this requirement being waived only where the household has no adult female member.
Where eligible, the subsidy is granted on a loan of up to Rs. 9,00,000 for a term of 20 years, and any loan amount above that limit carries the normal rate of interest.
Case: Mr. Om Prakash Dubey has a household annual income of Rs. 10,80,000. He is buying a flat of carpet area 148 square metres, registered jointly in his name and his wife's, for which he is taking a loan of Rs. 14,00,000. Neither he nor any member of his household owns a pucca house. Which of the following is correct? [Difficult]

(A) He is not eligible, because the loan of Rs. 14,00,000 exceeds the limit of Rs. 9,00,000
(B) He is eligible; the subsidy will be worked out on Rs. 9,00,000 and the balance of Rs. 5,00,000 will carry the normal rate of interest
(C) He is not eligible, because the carpet area of the flat exceeds the prescribed limit
(D) He is not eligible, because the household's annual income exceeds the prescribed limit
(E) He is eligible; the subsidy will be worked out on the whole of Rs. 14,00,000

2.11.8 Assertion and reason [checked, 2 flagged]

967. In the question below, two statements are given – one labelled Assertion (A) and the other labelled Reason (R). Read both statements and mark the option that correctly describes them.
Assertion (A): Before opening a new savings account, Kaveri Bank asks Sunita Rao to submit proof of her identity and proof of her address.
Reason (R): KYC (Know Your Customer) norms require a bank to satisfy itself about the identity and address of every person it accepts as a customer. [Easy]

(A) Both A and R are true, and R is the correct explanation of A
(B) Both A and R are true, but R is not the correct explanation of A
(C) A is true, but R is false
(D) A is false, but R is true
(E) Both A and R are false

968. In the question below, two statements are given – one labelled Assertion (A) and the other labelled Reason (R). Read both statements and mark the option that correctly describes them.
Assertion (A): A cheque dated 4 January that is presented at the bank counter on 20 May of the same year is returned unpaid.
Reason (R): A cheque becomes stale, and is no longer honoured, once three months have passed from the date written on it. [Easy]

(A) A is true, but R is false

(B) Both A and R are true, and R is the correct explanation of A
(C) A is false, but R is true
(D) Both A and R are true, but R is not the correct explanation of A
(E) Both A and R are false

969. In the question below, two statements are given – one labelled Assertion (A) and the other labelled Reason (R). Read both statements and mark the option that correctly describes them.
Assertion (A): The State Bank of India is the largest public sector bank in India.
Reason (R): Every commercial bank operating in India is regulated by the Reserve Bank of India. [Easy]

(A) Both A and R are true, and R is the correct explanation of A
(B) Both A and R are true, but R is not the correct explanation of A
(C) A is true, but R is false
(D) A is false, but R is true
(E) Both A and R are false

970. In the question below, two statements are given – one labelled Assertion (A) and the other labelled Reason (R). Read both statements and mark the option that correctly describes them.
Assertion (A): A cheque is crossed with two parallel transverse lines at the top left corner to make it safer for the payee.
Reason (R): A crossed cheque can be encashed for cash across the counter by whoever is holding it. [Easy]

(A) Both A and R are true, and R is the correct explanation of A
(B) Both A and R are true, but R is not the correct explanation of A
(C) A is true, but R is false
(D) A is false, but R is true
(E) Both A and R are false

971. In the question below, two statements are given – one labelled Assertion (A) and the other labelled Reason (R). Read both statements and mark the option that correctly describes them.
Assertion (A): A demand draft issued by a bank can be dishonoured on the ground of insufficient balance in the purchaser's account.
Reason (R): The amount of a demand draft is collected by the issuing bank from the purchaser before the draft is issued. [Easy]

(A) Both A and R are true, and R is the correct explanation of A
(B) Both A and R are true, but R is not the correct explanation of A
(C) A is true, but R is false
(D) A is false, but R is true
(E) Both A and R are false

972. In the question below, two statements are given – one labelled Assertion (A) and the other labelled Reason (R). Read both statements and mark the option that correctly describes them.
Assertion (A): One-rupee currency notes in India are issued by the Reserve Bank of India.
Reason (R): The Reserve Bank of India is a commercial bank that accepts deposits from the general public and pays them interest. [Easy]

(A) Both A and R are true, and R is the correct explanation of A
(B) Both A and R are true, but R is not the correct explanation of A
(C) A is true, but R is false
(D) A is false, but R is true
(E) Both A and R are false

973. In the question below, two statements are given – one labelled Assertion (A) and the other labelled Reason (R). Read both statements and mark the option that correctly describes them.
Assertion (A): A customer is advised never to write the PIN on the ATM card or hand the card and PIN together to any other person.
Reason (R): Anyone in possession of both the card and its PIN can withdraw money from the account without the account holder's knowledge. [Easy]

(A) Both A and R are true, and R is the correct explanation of A
(B) Both A and R are true, but R is not the correct explanation of A
(C) A is true, but R is false
(D) A is false, but R is true
(E) Both A and R are false

974. In the question below, two statements are given – one labelled Assertion (A) and the other labelled Reason (R). Read both statements and mark the option that correctly describes them.
Assertion (A): In a certain code language 'BANK' is written as 'CBOL', and in the same language 'LOAN' is written as 'MPBO'.
Reason (R): In this code language every letter of the word is replaced by the letter that immediately follows it in the English alphabet. [Moderate]

(A) Both A and R are true, and R is the correct explanation of A
(B) Both A and R are true, but R is not the correct explanation of A
(C) A is true, but R is false
(D) A is false, but R is true
(E) Both A and R are false

975. In the question below, two statements are given – one labelled Assertion (A) and the other labelled Reason (R). Read both statements and mark the option that correctly describes them.
Assertion (A): If Rs. 7,200 is divided among Amit, Bina and Chetan in the ratio $2 : 3 : 4$, then Bina receives Rs. 2,700.
Reason (R): The sum of the terms of the ratio is 9, so one part of the division is worth Rs. 800. [Moderate]

(A) Both A and R are true, and R is the correct explanation of A
(B) Both A and R are true, but R is not the correct explanation of A
(C) A is true, but R is false
(D) A is false, but R is true
(E) Both A and R are false

976. In the question below, two statements are given – one labelled Assertion (A) and the other labelled Reason (R). Read both statements and mark the option that correctly describes them.
Assertion (A): A deposit of Rs. 10,000 placed for 2 years at 10% per annum compounded annually grows to Rs. 12,100.
Reason (R): For the same principal, rate and period of more than one year, compound interest is always greater than simple interest. [Moderate]

(A) Both A and R are true, and R is the correct explanation of A
(B) Both A and R are true, but R is not the correct explanation of A
(C) A is true, but R is false
(D) A is false, but R is true
(E) Both A and R are false

977. In the question below, two statements are given – one labelled Assertion (A) and the other labelled Reason (R). Read both statements and mark the option that correctly describes them.

Assertion (A): Ravi walks 6 km due north from his office and then turns right and walks 8 km. He is now 10 km from his office.
Reason (R): The shortest distance between the starting point and the final position is obtained by adding the two distances walked, i.e. $6 + 8 = 14$ km. [Moderate]

(A) Both A and R are true, and R is the correct explanation of A
(B) Both A and R are true, but R is not the correct explanation of A
(C) A is true, but R is false
(D) A is false, but R is true
(E) Both A and R are false

978. In the question below, two statements are given – one labelled Assertion (A) and the other labelled Reason (R). Read both statements and mark the option that correctly describes them.
Assertion (A): Pointing to a man in a photograph, Sita said, 'He is the son of the only son of my mother.' The man in the photograph is Sita's nephew.
Reason (R): The son of one's brother is one's nephew. [Moderate]

(A) A is true, but R is false
(B) Both A and R are false
(C) A is false, but R is true
(D) Both A and R are true, and R is the correct explanation of A
(E) Both A and R are true, but R is not the correct explanation of A

979. In the question below, two statements are given – one labelled Assertion (A) and the other labelled Reason (R). Read both statements and mark the option that correctly describes them.
Assertion (A): In a queue of 40 customers at a bank counter, Anil is 12th from the front; therefore he is 29th from the back.
Reason (R): In a row of n persons, the position of a person from the front and the position from the back always add up to n. [Moderate]

(A) Both A and R are true, and R is the correct explanation of A
(B) Both A and R are true, but R is not the correct explanation of A
(C) A is true, but R is false
(D) A is false, but R is true
(E) Both A and R are false

980. In the question below, two statements are given – one labelled Assertion (A) and the other labelled Reason (R). Read both statements and mark the option that correctly describes them.
Assertion (A): Meera invests Rs. 20,000 at 8% per annum simple interest and earns Rs. 4,000 as interest at the end of 2 years.
Reason (R): Under simple interest the interest of every year is computed on the original principal alone and never on the interest already earned. [Moderate]

(A) Both A and R are true, and R is the correct explanation of A
(B) Both A and R are true, but R is not the correct explanation of A
(C) A is true, but R is false
(D) Both A and R are false
(E) None of these

981. In the question below, two statements are given – one labelled Assertion (A) and the other labelled Reason (R). Read both statements and mark the option that correctly describes them.
Assertion (A): In a family, P is the father of Q, Q is the sister of R, and R is the son of S. Then S is the mother of Q.

Reason (R): Q and R have the same two parents, and since P is stated to be the father, the other parent S must be the mother. [Difficult]

(A) Both A and R are true, and R is the correct explanation of A
(B) Both A and R are true, but R is not the correct explanation of A
(C) A is true, but R is false
(D) A is false, but R is true
(E) Both A and R are false

982. In the question below, two statements are given – one labelled Assertion (A) and the other labelled Reason (R). Read both statements and mark the option that correctly describes them.
Assertion (A): A shopkeeper allows a discount of 10% on the marked price of a wall clock, sells it for Rs. 1,080 and still gains 20%; the cost price of the clock is Rs. 900.
Reason (R): The marked price of the wall clock is Rs. 1,200. [Difficult]

(A) Both A and R are true, and R is the correct explanation of A
(B) Both A and R are true, but R is not the correct explanation of A
(C) A is true, but R is false
(D) A is false, but R is true
(E) Both A and R are false

983. In the question below, two statements are given – one labelled Assertion (A) and the other labelled Reason (R). Read both statements and mark the option that correctly describes them.
Assertion (A): Nikhil alone can complete an audit in 12 days and Farida alone in 18 days; working together they complete it in 7.2 days.
Reason (R): When two persons work together on the same job, the time they take is the average of the times they would take individually. [Difficult]

(A) Both A and R are true, and R is the correct explanation of A
(B) Both A and R are true, but R is not the correct explanation of A
(C) A is true, but R is false
(D) A is false, but R is true
(E) Both A and R are false

984. In the question below, two statements are given – one labelled Assertion (A) and the other labelled Reason (R). Read both statements and mark the option that correctly describes them.
Assertion (A): The ages of Ramesh and Suresh are in the ratio $3 : 4$ and the sum of their ages is 42 years; hence Ramesh is 24 years old.
Reason (R): For the same two persons the difference between their ages is 12 years. [Difficult]

(A) Both A and R are true, and R is the correct explanation of A
(B) Both A and R are true, but R is not the correct explanation of A
(C) A is true, but R is false
(D) A is false, but R is true
(E) Both A and R are false

985. In the question below, two statements are given – one labelled Assertion (A) and the other labelled Reason (R). Read both statements and mark the option that correctly describes them.
Assertion (A): A train 180 m long running at 54 km/h crosses a platform 240 m long in 24 seconds.
Reason (R): To cross a platform, a train must cover a distance equal to the sum of its own length and the length of the platform. [Difficult]

(A) Both A and R are true, and R is the correct explanation of A
(B) Both A and R are true, but R is not the correct explanation of A

(C) A is true, but R is false
(D) A is false, but R is true
(E) Both A and R are false

986. In the question below, two statements are given – one labelled Assertion (A) and the other labelled Reason (R). Read both statements and mark the option that correctly describes them.
Assertion (A): The difference between the compound interest and the simple interest on Rs. 15,000 for 2 years at 10% per annum, compounded annually, is Rs. 150.
Reason (R): Over two years the excess of compound interest over simple interest is exactly one year's interest on the first year's interest. [Difficult]

(A) Both A and R are true, and R is the correct explanation of A
(B) Both A and R are true, but R is not the correct explanation of A
(C) A is true, but R is false
(D) A is false, but R is true
(E) Both A and R are false

987. In the question below, two statements are given – one labelled Assertion (A) and the other labelled Reason (R). Read both statements and mark the option that correctly describes them.
Assertion (A): A sum of money lent at simple interest doubles itself in 8 years; at the same rate it will become four times itself in 24 years.
Reason (R): Under simple interest, if a sum doubles itself in n years, then it becomes four times itself in $2n$ years. [Difficult]

(A) Both A and R are true, and R is the correct explanation of A
(B) Both A and R are true, but R is not the correct explanation of A
(C) A is true, but R is false
(D) A is false, but R is true
(E) Both A and R are false

Section 2.12

2.12.1 Odd one out / classification [checked, 2 flagged]

988. Four of the following five numbers are alike in a certain way and so form a group. Which is the one that does NOT belong to that group? [Easy]

(A) 43
(B) 61
(C) 51
(D) 37
(E) 79

989. Four of the following five letter-pairs are alike in a certain way and so form a group. Which is the one that does NOT belong to that group? [Easy]

(A) RU
(B) BD
(C) FH
(D) JL
(E) NP

990. Four of the following five items are alike in a certain way and so form a group. Which is the one that does NOT belong to that group? [Easy]

(A) Savings Account
(B) Current Account
(C) Fixed Deposit Account
(D) Recurring Deposit Account
(E) Debit Card

991. Four of the following five numbers are alike in a certain way and so form a group. Which is the one that does NOT belong to that group? [Easy]

(A) 121
(B) 144
(C) 169
(D) 180
(E) 196

992. Four of the following five are alike in a certain way and so form a group. Which is the one that does NOT belong to that group? [Easy]

(A) State Bank of India
(B) Reserve Bank of India
(C) Punjab National Bank
(D) Canara Bank
(E) Bank of Baroda

993. Four of the following five numbers are alike in a certain way and so form a group. Which is the one that does NOT belong to that group? [Easy]

(A) 63
(B) 77
(C) 91
(D) 105
(E) 116

994. Four of the following five are alike in a certain way and so form a group. Which is the one that does NOT belong to that group? [Easy]

(A) Ledger
(B) Rupee
(C) Dollar
(D) Euro
(E) Yen

995. Four of the following five number-pairs are alike in a certain way and so form a group. Which is the one that does NOT belong to that group? [Moderate]

(A) 21 : 431
(B) 11 : 121
(C) 13 : 169
(D) 17 : 289
(E) 19 : 361

996. Four of the following five numbers are alike in a certain way and so form a group. Which is the one that does NOT belong to that group? [Moderate]

(A) 4832
(B) 6320
(C) 6742
(D) 9872
(E) 5735

997. Four of the following five letter-groups are alike in a certain way and so form a group. Which is the one that does NOT belong to that group? [Moderate]

(A) BEG
(B) DHL
(C) CFJ
(D) EIN
(E) FKQ

998. Four of the following five investment plans earn exactly the same simple interest. Which one does NOT belong to that group? [Moderate]

(A) Rs. 5,000 at 8% per annum for 3 years
(B) Rs. 6,000 at 5% per annum for 4 years
(C) Rs. 9,000 at 4% per annum for 3 years
(D) Rs. 4,000 at 10% per annum for 3 years
(E) Rs. 3,000 at 8% per annum for 5 years

999. Four of the following five are alike in a certain way and so form a group. Which is the one that does NOT belong to that group? [Moderate]

(A) Cheque
(B) Demand Draft
(C) Pay Order
(D) Passbook
(E) Bill of Exchange

1000. Four of the following five numbers are alike in a certain way and so form a group. Which is the one that does NOT belong to that group? [Moderate]

(A) 289
(B) 361
(C) 529
(D) 625
(E) 841

1001. Four of the following five number-pairs are alike in a certain way and so form a group. Which is the one that does NOT belong to that group? [Moderate]

(A) 8 : 512
(B) 7 : 343
(C) 6 : 216
(D) 5 : 125
(E) 4 : 60

1002. Four of the following five numbers are alike in a certain way and so form a group. Which is the one that does NOT belong to that group? [Difficult]

(A) 132
(B) 156
(C) 171
(D) 182
(E) 195

1003. Four of the following five letter-groups are alike in a certain way and so form a group. Which is the one that does NOT belong to that group? [Difficult]

(A) BCF
(B) CDL
(C) BEK
(D) BDH
(E) CEO

1004. Four of the following five fractions are alike in a certain way and so form a group. Which is the one that does NOT belong to that group? [Difficult]

(A) $\frac{91}{143}$
(B) $\frac{119}{175}$
(C) $\frac{63}{99}$
(D) $\frac{105}{165}$
(E) $\frac{84}{132}$

1005. Four of the following five numbers are alike in a certain way and so form a group. Which is the one that does NOT belong to that group? [Difficult]

(A) 15
(B) 35
(C) 187
(D) 77
(E) 143

1006. Four of the following five numbers are alike in a certain way and so form a group. Which is the one that does NOT belong to that group? [Difficult]

(A) 728
(B) 342
(C) 215
(D) 124
(E) 500

1007. Four of the following five are alike in a certain way and so form a group. Which is the one that does NOT belong to that group? [Difficult]

(A) KYC
(B) NEFT
(C) RTGS
(D) IMPS
(E) UPI

1008. Four of the following five numbers are alike in a certain way and so form a group. Which is the one that does NOT belong to that group? [Difficult]

(A) 7525
(B) 4815
(C) 6321
(D) 5418
(E) 3612

2.12.2 Analogy

[checked, 3 flagged]

1009. Select the number that will replace the question mark: 7 : 49 :: 11 :? [Easy]

(A) 111
(B) 121
(C) 132
(D) 144
(E) None of these

1010. Select the pair of letters that will replace the question mark: BD : FH :: JL : ? [Easy]

(A) MO
(B) NP
(C) KM
(D) OQ
(E) None of these

1011. Cashier : Bank :: Teacher : ? [Easy]

(A) Book
(B) School
(C) Student
(D) Chalk
(E) None of these

1012. CAT : DBU :: DOG : ? [Easy]

(A) EPH
(B) EPI
(C) FQI
(D) DPH
(E) None of these

1013. Select the number that will replace the question mark: 6 : 42 :: 9 :? [Easy]

(A) 72
(B) 81
(C) 99
(D) 108
(E) None of these

1014. Pen : Write :: Knife : ? [Easy]

(A) Sharp
(B) Cut
(C) Kitchen
(D) Steel
(E) None of these

1015. Rupee : India :: Yen : ? [Easy]

(A) China
(B) Japan
(C) South Korea
(D) Thailand
(E) None of these

1016. Select the pair of letters that will replace the question mark: AZ : BY :: CX : ? [Moderate]

(A) DV
(B) DW
(C) EW
(D) BW
(E) None of these

1017. Select the number that will replace the question mark: 12 : 66 :: 15 :? [Moderate]

(A) 90
(B) 105
(C) 120
(D) 135
(E) None of these

1018. Select the group of letters that will replace the question mark: FLOWER : REWOLF :: GARDEN : ? [Moderate]

(A) NEDRAG
(B) NEDARG
(C) NDERAG
(D) GNEDAR
(E) None of these

1019. Select the number that will replace the question mark: 125 : 6 :: 216 :? [Moderate]

(A) 7
(B) 8
(C) 9
(D) 12
(E) None of these

1020. Select the group of letters that will replace the question mark: ACE : GIK :: MOQ : ? [Moderate]

(A) RTV
(B) SUW
(C) NPR
(D) TVX
(E) None of these

1021. In the language of a bank's balance sheet, Debit : Credit :: Asset : ? [Moderate]

(A) Expense
(B) Liability
(C) Revenue
(D) Capital Adequacy
(E) None of these

1022. In each pair below the second number is obtained from the first by the same rule. Select the number that will replace the question mark: $3 : 10 :: 5 : 26 :: 7 :?$ [Moderate]

(A) 48
(B) 49
(C) 50
(D) 52
(E) None of these

1023. Select the group of letters that will replace the question mark: BDGK : CFJO :: DFIM : ? [Difficult]

(A) EHLQ
(B) EGKP
(C) FHLQ
(D) EHKP
(E) None of these

1024. Select the number that will replace the question mark: $7 : 350 :: 9 :?$ [Difficult]

(A) 729
(B) 738
(C) 810
(D) 820
(E) None of these

1025. In each triplet below the third number is obtained from the first two by the same rule. Select the number that will replace the question mark: $(6, 5, 61) :: (9, 7, ?)$ [Difficult]

(A) 112
(B) 121
(C) 130
(D) 144
(E) None of these

1026. Select the term that will replace the question mark: A4C : E16G :: I36K : ? [Difficult]

(A) M49O
(B) M64O
(C) N64P
(D) M64P
(E) None of these

1027. Doctor : Stethoscope :: Surveyor : ? [Difficult]

(A) Scalpel
(B) Theodolite
(C) Telescope
(D) Microscope
(E) None of these

1028. In a certain code DELHI is written as EDMGJ. How will MUMBAI be written in that same code? [Difficult]

(A) NTNABH
(B) NVNCBJ
(C) NTNCBH
(D) LVLCZJ
(E) None of these

1029. The pair of amounts below is linked by a fixed banking relation. Select the amount that will replace the question mark: Rs. 2,000 : Rs. 2,205 :: Rs. 4,000 : ? [Difficult]

(A) Rs. 4,400
(B) Rs. 4,410
(C) Rs. 4,420
(D) Rs. 4,500
(E) None of these

2.12.3 Coded binary logic

[checked, 2 flagged]

1030. In the token system of Sunrise Bank, every token number is displayed to the counter staff in binary form. Ms. Kavita is holding token number 25. What is displayed on the counter screen? [Easy]

(A) 10011
(B) 11001
(C) 11010
(D) 10101
(E) 11100

1031. A locker in a bank vault carries the coded number 101101, which is the binary form of the actual locker number. What is the actual locker number? [Easy]

(A) 43
(B) 47
(C) 45
(D) 53
(E) None of these

1032. Every branch of Deccan Bank is described by a 4-bit code in which the bits stand, in order, for (i) ATM, (ii) Locker, (iii) Forex desk, (iv) Loan desk. A bit of 1 means the facility is available and 0 means it is not. The Salem branch has the code 1011. Which facility is NOT available at the Salem branch? [Easy]

(A) ATM
(B) Forex desk
(C) Loan desk
(D) Locker
(E) None of these

1033. In the security software of a bank, two 4-bit codes are merged by the following rule: the merged bit is 1 if exactly one of the two corresponding bits is 1, otherwise the merged bit is 0. What is the merged code of 1010 and 1100? [Easy]

(A) 1001
(B) 0110
(C) 1110
(D) 0101
(E) 0011

1034. A verification machine compares two 4-bit customer codes and prints 1 in a position only when BOTH codes carry 1 in that position; otherwise it prints 0. What does the machine print for the codes 1101 and 1011? [Easy]

(A) 1111
(B) 0110
(C) 1011
(D) 1001
(E) 1101

1035. In an internal code of a bank, a message is disguised by changing every 0 of the original binary string to 1 and every 1 to 0. If the original string is 10110, what is the disguised string? [Easy]

(A) 01001
(B) 10001
(C) 01101
(D) 00101
(E) None of these

1036. Five cash bundles in a currency chest are labelled with binary codes: 10011, 1101, 11000, 10101 and 1111. Which bundle carries the largest number? [Easy]

(A) 10011
(B) 1101
(C) 11000
(D) 10101
(E) 1111

1037. A bank's software first merges two 4-bit codes by writing 1 in a position if AT LEAST ONE of the two bits there is 1, and then reverses every digit of the merged code (0 becomes 1 and 1 becomes 0). If the input codes are 1010 and 0011, what is the decimal value of the final code? [Moderate]

(A) 11
(B) 5
(C) 12
(D) 4
(E) None of these

1038. In a core banking system, the 'check digit' of a branch is defined as the number of 1s appearing in the binary form of the branch number. What is the check digit of branch number 92? [Moderate]

(A) 3
(B) 5
(C) 4
(D) 6
(E) None of these

1039. Two deposit slips carry the binary codes 110110 and 10111. The difference between the two amounts is again written in the same binary code. What is that code? [Moderate]

(A) 11101
(B) 11111
(C) 101111
(D) 10111
(E) None of these

1040. A password machine in a bank takes the 5-bit code of a customer, writes the same digits in reverse order to form a second code, and then adds the values of the two codes. If the customer's code is 10110, what is the binary form of the sum? [Moderate]

(A) 100011
(B) 101011
(C) 100111
(D) 11111
(E) None of these

1041. In a coding machine used for password generation, each letter is replaced by the binary form of its position in the English alphabet, and the blocks are joined by hyphens. Thus BAD is written as 10-1-100. How will FADE be written? [Moderate]

(A) 110-1-100-101
(B) 110-1-101-100
(C) 101-1-100-110
(D) 110-10-100-101
(E) None of these

1042. Every account code transmitted by a bank server consists of 7 data bits followed by one extra bit, chosen so that the total number of 1s in the complete 8-bit code is even. If the data bits are 1101011, what is the complete transmitted code? [Moderate]

(A) 11010110
(B) 11010111
(C) 01101011
(D) 11101011
(E) None of these

1043. A machine stores an amount as its binary code. The stored code of a certain amount is 10110. The amount is doubled, and the result is doubled again. The original code is then subtracted from the code of this final amount. What is the code of the answer? [Moderate]

(A) 1000010
(B) 1011000
(C) 110110
(D) 1000110
(E) None of these

1044. A bank's fraud filter uses three 6-bit codes $P = 110101$, $Q = 101011$ and $R = 011110$. It first combines P and Q by writing 1 only where BOTH have 1, and then combines that result with R by writing 1 only where EXACTLY ONE of the two has 1. What is the decimal value of the final code? [Difficult]

(A) 31
(B) 47
(C) 63
(D) 62
(E) None of these

1045. Two 6-bit branch codes are merged by a rule that writes 1 in a position when EXACTLY ONE of the two bits there is 1, and 0 otherwise. The merged code is 101101 and one of the two branch codes is 110011. What is the decimal value of the other branch code? [Difficult]

(A) 30
(B) 28
(C) 22
(D) 62
(E) None of these

1046. A bank server transmits 8-bit codes in which the number of 1s must always be even; a code with an odd number of 1s means the message was corrupted in transmission. Exactly one of the following received codes is corrupted. Which one is it? [Difficult]

(A) 10110100
(B) 11010110
(C) 01101001
(D) 11110000
(E) 00111100

1047. A cashier records the number of notes of each denomination in binary code. She records 1101 notes of Rs. 500, 101 notes of Rs. 2,000 and 1010 notes of Rs. 100. If the total number of notes with her is written in the same binary code, what is that code? [Difficult]

(A) 11010
(B) 10111
(C) 11100
(D) 11110
(E) None of these

1048. In a coding system each letter is first replaced by the 5-digit binary form of its position in the alphabet (A = 00001, B = 00010, and so on), and then the five digits of each block are written in reverse order. Which word is coded as 00110-11110-10000-01110? [Difficult]

(A) LOAD
(B) LEAN
(C) LION
(D) LOAN
(E) None of these

1049. A housing-loan desk stores every applicant as a 5-bit code $b_1b_2b_3b_4b_5$, where $b_1 = 1$ means salaried, $b_2 = 1$ means credit score above 750, $b_3 = 1$ means no existing loan, $b_4 = 1$ means property papers submitted and $b_5 = 1$ means age below 50 years. A loan is sanctioned only if ALL of the following hold: (i) $b_2 = 1$; (ii) at least three of the five bits are 1; (iii) it is not the case that b_1 and b_3 are both 0. Which applicant gets the loan? [Difficult]

(A) 10111
(B) 01110
(C) 01011
(D) 11000
(E) 00110

1050. A regional office reports that each of its branches opened the same number of new accounts last month. The number of accounts per branch is coded as 11011 and the number of branches is coded as 1011, both in binary. The total number of accounts opened in the region, written in the same binary code, is [Difficult]

(A) 100101001
(B) 100110001
(C) 101101001
(D) 100101011
(E) None of these

2.12.4 Miscellaneous one-liners (digit rearrangement, meaningful words) [checked, 1 flagged]

1051. The token number issued to Ramesh at a bank counter is 57249. If all the digits of this number are arranged in ascending order from left to right, which digit will be third from the left end? [Easy]

(A) 2
(B) 4
(C) 5
(D) 7
(E) 9

1052. If a meaningful English word can be formed using the second, third, fifth and sixth letters of the word BANKERS (each letter used only once), what will be the third letter of that word? If more than one such word can be formed, mark M as the answer, and if no such word can be formed, mark X as the answer. [Easy]

(A) A
(B) R
(C) M
(D) X
(E) N

1053. Using each of the digits 3, 8, 1 and 6 exactly once, a four-digit number is formed. What is the difference between the largest and the smallest such number? [Easy]

(A) 7263
(B) 7623
(C) 6273
(D) 7236
(E) None of these

1054. In the number 593648, if the first and the second digits are interchanged, the third and the fourth digits are interchanged, and so on, then which digit will be third from the right end in the new number? [Easy]

(A) 6
(B) 3
(C) 8
(D) 5
(E) 9

1055. The digits of the number 825914 are arranged in descending order from left to right. Which digit will then be fourth from the right end? [Easy]

(A) 4
(B) 8
(C) 5
(D) 2
(E) 9

1056. If the following five words are arranged as in a dictionary, which word will occupy the third position? Banker, Bandit, Banner, Bank, Banish [Easy]

(A) Banish
(B) Bank
(C) Banker
(D) Banner
(E) Bandit

1057. If the letters of the word RESPONSIBLE are written in the reverse order, which letter will be fifth from the left end of the new arrangement? [Easy]

(A) I
(B) S
(C) B
(D) N
(E) O

1058. How many meaningful English words can be formed using all the letters D, E, A, R, each letter being used exactly once in a word? [Moderate]

(A) One
(B) Two
(C) Three
(D) More than three
(E) None

1059. The digits of the number 7392648 are first arranged in descending order from left to right. In the number so obtained, the positions of the first and the seventh digits are interchanged, the positions of the second and the sixth digits are interchanged, and the positions of the third and the fifth digits are interchanged, the fourth digit remaining unchanged. Which digit will then be fourth from the left end? [Moderate]

(A) 4
(B) 6
(C) 7
(D) 3
(E) 8

1060. In the number 18375926, if all the digits are rearranged in ascending order from left to right, how many digits will remain at the same position as they were in the original number? [Moderate]

(A) None
(B) One
(C) Two
(D) Three
(E) More than three

1061. The digits of each of the following numbers are written in the reverse order, and the numbers so obtained are then arranged in descending order from left to right. Which of the original numbers will be fourth from the left end in this arrangement? 487, 632, 215, 794, 358 [Moderate]

(A) 487
(B) 632
(C) 215
(D) 794
(E) 358

1062. If the first half of the letters of the word DEPARTMENTAL is written in the reverse order and the second half is also written separately in the reverse order, which letter will be sixth from the right end of the new arrangement? [Moderate]

(A) A
(B) T
(C) L
(D) N
(E) E

1063. In the number 8463927, if 1 is subtracted from each digit which is greater than 5 and 1 is added to each digit which is less than 5, then how many digits in the new number appear more than once? [Moderate]

(A) None
(B) One
(C) Two
(D) Three
(E) More than three

1064. Four of the following five numbers are alike in a certain way with respect to the rearrangement of their digits, and hence form a group. Which one does NOT belong to that group? [Moderate]

(A) 132
(B) 546
(C) 879
(D) 968
(E) 213

1065. In the number 539168274, all the digits are first arranged in ascending order from left to right. From the number so formed, every alternate digit starting with the leftmost one is then deleted. Which digit will be third from the right end of the resulting number? [Difficult]

(A) 2
(B) 4
(C) 6
(D) 8
(E) None of these

1066. In each of the following words, the letters are first rearranged alphabetically within the word. The five letter-groups so obtained are then arranged as in a dictionary. Which of the original words will occupy the third position in that arrangement? BANKING, MONITOR, PROFITS, LEDGERS, CASHIER [Difficult]

(A) BANKING
(B) MONITOR
(C) PROFITS
(D) LEDGERS
(E) CASHIER

1067. A cheque of a certain three-digit amount in rupees was written by Suresh. When the digits of this amount are written in the reverse order, the amount becomes Rs. 396 more than the original amount. If the sum of the three digits is 12 and the tens digit is 4, what was the original amount? [Difficult]

(A) Rs. 246
(B) Rs. 264
(C) Rs. 426
(D) Rs. 228
(E) None of these

1068. In the number 471952863, the positions of the first and the fifth digits are interchanged, similarly the positions of the second and the sixth digits, the third and the seventh digits, and the fourth and the eighth digits are interchanged, the ninth digit remaining unchanged. Which digit will then be fourth to the right of the third digit from the left end? [Difficult]

(A) 4
(B) 7
(C) 1
(D) 9
(E) None of these

1069. In the word PRODUCTIVE, each vowel is replaced by the letter that immediately follows it in the English alphabet and each consonant is replaced by the letter that immediately precedes it. The ten letters so obtained are then arranged in alphabetical order from left to right. Which letter will be fourth from the left end? [Difficult]

(A) B
(B) C
(C) J
(D) O
(E) P

1070. How many pairs of digits are there in the number 7492638, each of which has as many digits between them in the number as they have between them when all the digits of the number are arranged in ascending order (counting in both forward and backward directions)? [Difficult]

(A) One
(B) Two
(C) Three
(D) Four
(E) More than four

1071. A clerk had to enter an amount of Rs. 5,832 in the ledger, but by mistake he interchanged the digits in the hundreds place and the units place. How does the amount actually entered compare with the correct amount? [Difficult]

(A) Less by Rs. 594
(B) More by Rs. 594
(C) Less by Rs. 540
(D) More by Rs. 486
(E) None of these

Answer Key

1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
C	B	A	B	B	A	B	B	C	B
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
B	D	B	B	A	E	C	A	D	C
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
B	C	C	A	A	D	B	E	C	B
31	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
A	D	C	E	B	B	E	C	E	C
41	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
C	A	B	C	D	C	D	A	D	B
51	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**
B	B	C	B	D	C	B	E	D	B
61	**62**	**63**	**64**	**65**	**66**	**67**	**68**	**69**	**70**
B	A	E	B	C	D	B	E	B	C
71	**72**	**73**	**74**	**75**	**76**	**77**	**78**	**79**	**80**
C	B	A	C	C	A	B	C	D	B
81	**82**	**83**	**84**	**85**	**86**	**87**	**88**	**89**	**90**
A	C	C	E	C	C	C	B	C	D
91	**92**	**93**	**94**	**95**	**96**	**97**	**98**	**99**	**100**
E	C	D	B	E	B	C	C	B	E
101	**102**	**103**	**104**	**105**	**106**	**107**	**108**	**109**	**110**
A	B	E	B	B	D	D	C	A	B
111	**112**	**113**	**114**	**115**	**116**	**117**	**118**	**119**	**120**
B	B	A	C	C	A	B	B	B	A
121	**122**	**123**	**124**	**125**	**126**	**127**	**128**	**129**	**130**
B	C	C	A	D	B	E	C	A	A
131	**132**	**133**	**134**	**135**	**136**	**137**	**138**	**139**	**140**
E	B	D	E	B	A	D	D	C	B
141	**142**	**143**	**144**	**145**	**146**	**147**	**148**	**149**	**150**
B	D	A	E	B	A	C	D	E	A
151	**152**	**153**	**154**	**155**	**156**	**157**	**158**	**159**	**160**
B	B	C	C	B	D	C	C	E	C
161	**162**	**163**	**164**	**165**	**166**	**167**	**168**	**169**	**170**
D	B	B	C	D	C	C	D	C	D
171	**172**	**173**	**174**	**175**	**176**	**177**	**178**	**179**	**180**
B	C	A	E	B	B	A	B	C	A
181	**182**	**183**	**184**	**185**	**186**	**187**	**188**	**189**	**190**
C	D	B	C	C	D	D	B	C	E
191	**192**	**193**	**194**	**195**	**196**	**197**	**198**	**199**	**200**
A	C	D	B	D	A	B	A	C	E
201	**202**	**203**	**204**	**205**	**206**	**207**	**208**	**209**	**210**
D	D	B	A	B	B	D	E	C	C
211	**212**	**213**	**214**	**215**	**216**	**217**	**218**	**219**	**220**
B	A	E	C	D	A	B	B	A	E
221	**222**	**223**	**224**	**225**	**226**	**227**	**228**	**229**	**230**
B	D	D	C	B	A	E	C	A	E
231	**232**	**233**	**234**	**235**	**236**	**237**	**238**	**239**	**240**
B	C	B	E	C	A	D	C	C	D
241	**242**	**243**	**244**	**245**	**246**	**247**	**248**	**249**	**250**
B	B	C	E	C	C	A	C	C	C
251	**252**	**253**	**254**	**255**	**256**	**257**	**258**	**259**	**260**
A	A	B	A	B	C	D	E	A	B
261	**262**	**263**	**264**	**265**	**266**	**267**	**268**	**269**	**270**
A	D	E	A	E	C	E	A	B	D
271	**272**	**273**	**274**	**275**	**276**	**277**	**278**	**279**	**280**
C	E	B	C	B	A	B	C	D	E
281	**282**	**283**	**284**	**285**	**286**	**287**	**288**	**289**	**290**

C	B	D	D	C	D	E	D	A	C
291	**292**	**293**	**294**	**295**	**296**	**297**	**298**	**299**	**300**
C	E	D	B	A	E	B	D	A	D
301	**302**	**303**	**304**	**305**	**306**	**307**	**308**	**309**	**310**
B	C	E	B	A	E	D	D	C	B
311	**312**	**313**	**314**	**315**	**316**	**317**	**318**	**319**	**320**
A	D	E	C	B	C	D	A	C	D
321	**322**	**323**	**324**	**325**	**326**	**327**	**328**	**329**	**330**
B	E	C	A	B	D	C	B	A	B
331	**332**	**333**	**334**	**335**	**336**	**337**	**338**	**339**	**340**
D	A	C	B	D	A	A	A	A	A
341	**342**	**343**	**344**	**345**	**346**	**347**	**348**	**349**	**350**
A	A	D	A	A	A	A	A	A	A
351	**352**	**353**	**354**	**355**	**356**	**357**	**358**	**359**	**360**
A	A	A	A	A	A	E	B	C	B
361	**362**	**363**	**364**	**365**	**366**	**367**	**368**	**369**	**370**
B	E	C	C	A	A	E	A	A	A
371	**372**	**373**	**374**	**375**	**376**	**377**	**378**	**379**	**380**
A	A	B	D	C	A	D	E	A	A
381	**382**	**383**	**384**	**385**	**386**	**387**	**388**	**389**	**390**
A	C	B	A	A	A	A	C	A	B
391	**392**	**393**	**394**	**395**	**396**	**397**	**398**	**399**	**400**
A	C	A	A	B	B	A	E	A	A
401	**402**	**403**	**404**	**405**	**406**	**407**	**408**	**409**	**410**
D	B	C	A	D	C	B	A	D	A
411	**412**	**413**	**414**	**415**	**416**	**417**	**418**	**419**	**420**
C	E	D	A	C	D	B	D	A	C
421	**422**	**423**	**424**	**425**	**426**	**427**	**428**	**429**	**430**
B	C	D	C	D	E	A	A	B	C
431	**432**	**433**	**434**	**435**	**436**	**437**	**438**	**439**	**440**
C	D	A	B	E	C	B	D	E	D
441	**442**	**443**	**444**	**445**	**446**	**447**	**448**	**449**	**450**
E	B	D	A	D	B	D	C	B	C
451	**452**	**453**	**454**	**455**	**456**	**457**	**458**	**459**	**460**
B	C	D	A	C	C	C	A	D	E
461	**462**	**463**	**464**	**465**	**466**	**467**	**468**	**469**	**470**
A	D	B	B	B	A	A	A	C	B
471	**472**	**473**	**474**	**475**	**476**	**477**	**478**	**479**	**480**
A	C	B	B	A	C	A	B	B	C
481	**482**	**483**	**484**	**485**	**486**	**487**	**488**	**489**	**490**
B	B	A	A	B	D	D	C	C	A
491	**492**	**493**	**494**	**495**	**496**	**497**	**498**	**499**	**500**
B	C	D	C	C	D	C	A	A	E
501	**502**	**503**	**504**	**505**	**506**	**507**	**508**	**509**	**510**
C	D	A	D	A	D	B	C	C	C
511	**512**	**513**	**514**	**515**	**516**	**517**	**518**	**519**	**520**
E	A	D	A	B	D	E	D	B	B
521	**522**	**523**	**524**	**525**	**526**	**527**	**528**	**529**	**530**
C	A	B	C	A	A	C	C	C	B
531	**532**	**533**	**534**	**535**	**536**	**537**	**538**	**539**	**540**
C	A	B	A	B	B	C	B	B	A
541	**542**	**543**	**544**	**545**	**546**	**547**	**548**	**549**	**550**
B	E	A	C	A	B	B	D	A	C
551	**552**	**553**	**554**	**555**	**556**	**557**	**558**	**559**	**560**
D	C	D	B	A	C	A	C	B	D
561	**562**	**563**	**564**	**565**	**566**	**567**	**568**	**569**	**570**
C	B	D	B	C	A	E	C	B	A
571	**572**	**573**	**574**	**575**	**576**	**577**	**578**	**579**	**580**
C	E	B	A	A	B	C	A	B	A
581	**582**	**583**	**584**	**585**	**586**	**587**	**588**	**589**	**590**

D	D	B	C	A	B	D	A	D	D
591	**592**	**593**	**594**	**595**	**596**	**597**	**598**	**599**	**600**
B	C	C	B	E	C	A	B	C	C
601	**602**	**603**	**604**	**605**	**606**	**607**	**608**	**609**	**610**
E	A	D	C	B	B	A	C	C	A
611	**612**	**613**	**614**	**615**	**616**	**617**	**618**	**619**	**620**
C	D	B	D	A	B	C	A	E	B
621	**622**	**623**	**624**	**625**	**626**	**627**	**628**	**629**	**630**
D	B	C	C	B	A	E	C	B	B
631	**632**	**633**	**634**	**635**	**636**	**637**	**638**	**639**	**640**
C	A	B	A	C	E	C	D	D	B
641	**642**	**643**	**644**	**645**	**646**	**647**	**648**	**649**	**650**
A	C	D	B	D	B	E	A	C	B
651	**652**	**653**	**654**	**655**	**656**	**657**	**658**	**659**	**660**
A	B	C	E	D	B	A	D	C	D
661	**662**	**663**	**664**	**665**	**666**	**667**	**668**	**669**	**670**
E	B	C	D	B	B	D	C	D	A
671	**672**	**673**	**674**	**675**	**676**	**677**	**678**	**679**	**680**
A	A	C	B	C	B	C	D	B	B
681	**682**	**683**	**684**	**685**	**686**	**687**	**688**	**689**	**690**
D	A	B	B	D	C	C	B	B	A
691	**692**	**693**	**694**	**695**	**696**	**697**	**698**	**699**	**700**
B	B	E	B	C	B	D	B	D	A
701	**702**	**703**	**704**	**705**	**706**	**707**	**708**	**709**	**710**
B	D	E	E	D	C	B	D	B	E
711	**712**	**713**	**714**	**715**	**716**	**717**	**718**	**719**	**720**
C	C	D	B	B	D	B	A	C	D
721	**722**	**723**	**724**	**725**	**726**	**727**	**728**	**729**	**730**
C	C	B	B	E	C	B	C	D	C
731	**732**	**733**	**734**	**735**	**736**	**737**	**738**	**739**	**740**
A	C	C	B	B	A	C	D	C	C
741	**742**	**743**	**744**	**745**	**746**	**747**	**748**	**749**	**750**
A	B	A	C	B	D	A	D	B	B
751	**752**	**753**	**754**	**755**	**756**	**757**	**758**	**759**	**760**
B	B	C	C	B	B	C	C	B	C
761	**762**	**763**	**764**	**765**	**766**	**767**	**768**	**769**	**770**
D	C	D	C	C	C	D	C	C	B
771	**772**	**773**	**774**	**775**	**776**	**777**	**778**	**779**	**780**
B	B	C	C	C	C	C	C	A	D
781	**782**	**783**	**784**	**785**	**786**	**787**	**788**	**789**	**790**
B	A	C	E	B	B	D	C	B	A
791	**792**	**793**	**794**	**795**	**796**	**797**	**798**	**799**	**800**
B	C	B	B	D	B	D	C	C	A
801	**802**	**803**	**804**	**805**	**806**	**807**	**808**	**809**	**810**
D	C	E	A	E	B	D	A	C	E
811	**812**	**813**	**814**	**815**	**816**	**817**	**818**	**819**	**820**
A	D	E	B	C	A	D	C	B	A
821	**822**	**823**	**824**	**825**	**826**	**827**	**828**	**829**	**830**
E	A	E	B	D	C	A	B	D	E
831	**832**	**833**	**834**	**835**	**836**	**837**	**838**	**839**	**840**
E	C	B	D	B	C	A	C	D	E
841	**842**	**843**	**844**	**845**	**846**	**847**	**848**	**849**	**850**
A	B	B	D	A	D	B	E	B	A
851	**852**	**853**	**854**	**855**	**856**	**857**	**858**	**859**	**860**
D	B	A	E	A	B	D	A	C	B
861	**862**	**863**	**864**	**865**	**866**	**867**	**868**	**869**	**870**
C	A	A	B	E	C	D	A	A	B
871	**872**	**873**	**874**	**875**	**876**	**877**	**878**	**879**	**880**
B	D	E	C	C	C	D	C	C	D
881	**882**	**883**	**884**	**885**	**886**	**887**	**888**	**889**	**890**

D	B	A	E	B	D	A	E	C	A
891 C	**892** B	**893** D	**894** D	**895** B	**896** C	**897** B	**898** A	**899** B	**900** D
901 D	**902** C	**903** E	**904** A	**905** B	**906** E	**907** A	**908** C	**909** A	**910** B
911 A	**912** E	**913** D	**914** C	**915** A	**916** E	**917** B	**918** A	**919** D	**920** B
921 C	**922** C	**923** D	**924** B	**925** A	**926** B	**927** C	**928** D	**929** E	**930** B
931 D	**932** C	**933** A	**934** A	**935** B	**936** C	**937** C	**938** B	**939** A	**940** C
941 D	**942** C	**943** B	**944** E	**945** D	**946** A	**947** B	**948** E	**949** A	**950** C
951 B	**952** C	**953** C	**954** B	**955** B	**956** E	**957** D	**958** B	**959** C	**960** D
961 B	**962** B	**963** A	**964** A	**965** B	**966** B	**967** A	**968** B	**969** B	**970** C
971 D	**972** E	**973** A	**974** A	**975** D	**976** B	**977** C	**978** D	**979** C	**980** E
981 A	**982** B	**983** C	**984** E	**985** D	**986** A	**987** C	**988** C	**989** A	**990** E
991 D	**992** B	**993** E	**994** A	**995** A	**996** B	**997** C	**998** C	**999** D	**1000** D
1001 E	**1002** D	**1003** C	**1004** B	**1005** C	**1006** E	**1007** A	**1008** B	**1009** B	**1010** B
1011 B	**1012** A	**1013** E	**1014** B	**1015** B	**1016** B	**1017** B	**1018** A	**1019** A	**1020** B
1021 B	**1022** C	**1023** A	**1024** B	**1025** C	**1026** B	**1027** B	**1028** A	**1029** B	**1030** B
1031 C	**1032** D	**1033** B	**1034** D	**1035** A	**1036** C	**1037** D	**1038** C	**1039** B	**1040** A
1041 A	**1042** B	**1043** A	**1044** C	**1045** A	**1046** B	**1047** C	**1048** D	**1049** B	**1050** A
1051 C	**1052** C	**1053** A	**1054** B	**1055** C	**1056** B	**1057** B	**1058** C	**1059** B	**1060** C
1061 D	**1062** C	**1063** B	**1064** D	**1065** B	**1066** D	**1067** A	**1068** C	**1069** C	**1070** C
1071 A									

Worked Solutions

Subtopic 2.1.1

1. Number the seats 1 to 7 from the left; since all face north, "right" means a higher seat number. Q sits third from the left, so Q is at seat 3. R is immediately to the right of Q, so R is at seat 4. S is at the extreme right end, seat 7. P is second to the left of Q, so P is at seat $3 - 2 = 1$. T is immediately to the left of S, so T is at seat 6. U is immediately to the right of R, so U is at seat 5. Only seat 2 remains, so V sits at seat 2. The final row (left to right) is P, V, Q, R, U, T, S. Second to the right of V (seat 2) is seat $2 + 2 = 4$, which is R. Hence option C. P is to V's left, Q is only first to the right, and T is four seats away, so no other option works.

2. Label the seats 1 to 6 from the left. Deepa is at seat 1. Amit is third to the right of Deepa, so Amit is at seat $1 + 3 = 4$. Esha is immediately to the left of Amit, so Esha is at seat 3. Farhan is at the extreme right end, seat 6. Bhavna is immediately to the right of Amit, so Bhavna is at seat 5. The only vacant seat is 2, so Chirag sits at seat 2. The row is Deepa, Chirag, Esha, Amit, Bhavna, Farhan. Between Chirag (seat 2) and Bhavna (seat 5) lie seats 3 and 4, i.e. Esha and Amit — exactly 2 persons. Hence option B.

3. Convert both positions to positions from the left end. Rakesh is third from the left, so Rakesh is at seat 3. For a row of n persons, position from left $= n -$ (position from right) $+ 1$. So Suresh is at seat $8 - 4 + 1 = 5$. The seats strictly between seat 3 and seat 5 are just seat 4, so exactly one trainee sits between them. Hence option A. Note that the total is given, so the answer is fully determined and option E is wrong.

4. When one person's position is counted from both ends, that person is counted twice. So total = (position from left) + (position from right) -1. Here total $= 11 + 9 - 1 = 19$. A quick check: 10 children stand to Nisha's left and 8 to her right, giving $10 + 8 + 1 = 19$. Hence option B. Choosing 20 is the classic error of forgetting to subtract the double count.

5. Seats are 1 to 5 from the left. Chetan is at seat 1 or seat 5.
Case I: Chetan at seat 1. Two persons between Chetan and Divya puts Divya at seat 4, so Ajay (immediately to Divya's right) is at seat 5. Bhanu and Eshan take seats 2 and 3. Bhanu cannot neighbour Chetan, so Bhanu is not at seat 2; hence Bhanu is at seat 3 and Eshan at seat 2. Eshan is then to the left of Bhanu, which is required. This case works: Chetan, Eshan, Bhanu, Divya, Ajay.
Case II: Chetan at seat 5. Then Divya is at seat 2 and Ajay at seat 3. Bhanu and Eshan take seats 1 and 4; Bhanu cannot be at seat 4 (neighbour of Chetan), so Bhanu is at seat 1 and Eshan at seat 4. But then Eshan is to the right of Bhanu, contradicting the last clue. Case II fails.
So the arrangement is Chetan, Eshan, Bhanu, Divya, Ajay, and the middle seat 3 is occupied by Bhanu. Hence option B.

6. Seats run 1 to 7 from the left. Rohit is at seat 4. Mohit is second to the right of Rohit, so Mohit is at seat $4 + 2 = 6$. Sohit is at the extreme right end, seat 7. Seats 6 and 7 are adjacent, so there is no seat between them and hence no student sits between Mohit and Sohit. Hence option A. A common slip is to read "second to the right" as "second place away counting Rohit himself", which would wrongly place Mohit at seat 5 and give one student in between.

7. Kavita's position from the left is 12. Manish stands 5 places to her right, so Manish's position from the left is $12 + 5 = 17$. For a row of $n = 25$, position from right $= n -$ (position from left) $+ 1 = 25 - 17 + 1 = 9$. So Manish is 9th from the right end. Hence option B.

8. Seats are 1 to 8 from the left. Anil is at seat 1. Anil is third to the left of Bina, so Bina is at seat $1 + 3 = 4$. Bina is second to the right of Dev, so Dev is at seat $4 - 2 = 2$ (not an extreme end, as required). Dev is fourth to the left of Harsh, so Harsh is at seat $2 + 4 = 6$ (also not an extreme end). Gita is immediately to the right of Harsh, so Gita is at seat 7. Farid sits between Dev (seat 2) and Bina (seat 4), so Farid is at seat 3. Seats 5 and 8 remain for Ekta and Charu; since Ekta is to the left of Charu, Ekta is at seat 5 and Charu at seat 8. The row is Anil, Dev, Farid, Bina, Ekta, Harsh, Gita,

Charu. Between Farid (seat 3) and Gita (seat 7) lie seats 4, 5 and 6 — that is Bina, Ekta and Harsh, i.e. 3 persons. Hence option B.

9. Seats run 1 to 9 from the left. Vikas is at seat 4. "Only two persons between Vikas and Nitin" means the gap in seat numbers is 3; since Nitin is to Vikas's right, Nitin is at seat $4 + 3 = 7$. "Only three persons between Nitin and Om" means a gap of 4, so Om is at seat $7 - 4 = 3$ or seat $7 + 4 = 11$. Seat 11 does not exist in a row of nine, so Om is at seat 3. Om's position from the right end is $9 - 3 + 1 = 7$. Hence option C.

10. Seats are 1 to 7 from the left. Lalit is at seat 1 and Jatin at seat 2. Meena is third from an end, so Meena is at seat 3 or seat 5.
If Meena were at seat 5, then two persons between Meena and Kiran forces Kiran to seat 2 or seat 8; seat 2 is Jatin and seat 8 does not exist, so this fails.
Hence Meena is at seat 3, and Kiran is at seat $3 + 3 = 6$ (seat 0 is impossible). Naveen, immediately to Kiran's left, is at seat 5. Seats 4 and 7 remain for Ojas and Payal. Payal cannot neighbour Meena (seat 3), so Payal is not at seat 4; thus Payal is at seat 7 and Ojas at seat 4.
The row is Lalit, Jatin, Meena, Ojas, Naveen, Kiran, Payal. Second to the right of Ojas (seat 4) is seat 6, which is Kiran. Hence option B.

11. After the interchange Suresh occupies exactly the seat Ganesh was in. So Ganesh's original seat is 12th from the left. But Ganesh's seat was also 5th from the right end. A single seat counted from both ends gives total = (position from left) + (position from right) $- 1 = 12 + 5 - 1 = 16$. So there are 16 students. Check: in a row of 16, the 12th from the left is $16 - 12 + 1 = 5$th from the right, which matches, and Suresh's original seat 4 is distinct from seat 12. Hence option B. Suresh's original position of 4 is extra information used only to confirm the swap is genuine.

12. Positions are 1 to 5 from the left. Chandni is at position 1 with Rs. 12,000 and Bhaskar at position 2 with Rs. 8,000. Aarti is at position 5. So Dinesh and Eshwar occupy positions 3 and 4 in some order. The middle position, 3, belongs to the person depositing Rs. 20,000. Eshwar deposits Rs. 15,000, so Eshwar is not at position 3; therefore Dinesh is at position 3 with Rs. 20,000 and Eshwar is at position 4. This is consistent with "Dinesh deposits more than Eshwar" since Rs. 20,000 > Rs. 15,000. The only amount left, Rs. 5,000, goes to Aarti at position 5. The queue is Chandni (12,000), Bhaskar (8,000), Dinesh (20,000), Eshwar (15,000), Aarti (5,000). Second to the left of Aarti (position 5) is position 3, i.e. Dinesh. Hence option D.

13. Seats run 1 to 6 from the left. Sonal is at seat 6, so Tarun is at seat 5. Uma is at an extreme end; seat 6 is taken, so Uma is at seat 1. Ravi is not at an extreme end and Vinay = Ravi +2, so Ravi can only be at seat 2, 3 or 4, giving Vinay at seat 4, 5 or 6. Seats 5 and 6 are occupied, so Vinay is at seat 4 and Ravi at seat 2. Waseem takes the remaining seat 3. Uma (seat 1) is not adjacent to Vinay (seat 4), as required. The row is Uma, Ravi, Waseem, Vinay, Tarun, Sonal.
Now test the statements: Tarun is at seat 5, not an end, so A is false. Between Uma (seat 1) and Vinay (seat 4) lie seats 2 and 3 — exactly two persons, so B is TRUE. Waseem is at seat 3, which is to Vinay's left, so C is false. Ravi (seat 2) and Sonal (seat 6) are far apart, so D is false. Hence option B.

14. Work entirely in positions from the left, with $n = 26$. Deepak is at position 5. Ekta is 14th from the right, so Ekta's position from the left is $26 - 14 + 1 = 13$. Exactly three people stand between Ekta and Farhan, so the gap in positions is 4; as Farhan is to Ekta's left, Farhan is at position $13 - 4 = 9$. Between Deepak (position 5) and Farhan (position 9) lie positions 6, 7 and 8 — exactly 3 people. Hence option B.

15. Seats are 1 to 8 from the left. Gagan is at seat 1, so Ankit is at seat 2 or later; since Chirag = Ankit +5 and Chirag is not at seat 8, Ankit must be at seat 2 and Chirag at seat 7 (Ankit at seat 3 would push Chirag to seat 8, an end). Bhumi is third to the left of Chirag, so Bhumi is at seat 4; Divya is second to the right of Bhumi, so Divya is at seat 6. Esha is at an extreme end; seat 1 is Gagan's and would also make Esha adjacent to Ankit, so Esha is at seat 8. Seats 3 and 5 remain for Harpreet and Ishan. Only one person sits between Gagan (seat 1) and Ishan, so Ishan is at seat 3;

Harpreet takes seat 5, which is indeed to the right of Gagan.
Original row: Gagan, Ankit, Ishan, Bhumi, Harpreet, Divya, Chirag, Esha.
Alphabetical row: Ankit, Bhumi, Chirag, Divya, Esha, Gagan, Harpreet, Ishan.
Compare seat by seat: 1 Gagan/Ankit, 2 Ankit/Bhumi, 3 Ishan/Chirag, 4 Bhumi/Divya, 5 Harpreet/Esha, 6 Divya/Gagan, 7 Chirag/Harpreet, 8 Esha/Ishan. No seat holds the same person in both rows, so the count is zero. Hence option A.

16. Seats are 1 to 9 from the left. Only two persons sit to Manish's right, so Manish is at seat 7. Nikhil is third to Manish's left, at seat 4. Two persons between Nikhil and Pooja means a gap of 3, so Pooja is at seat 1 or seat 7; seat 7 is Manish, so Pooja is at seat 1. Ritu is second to Pooja's right, at seat 3, and Sameer, immediately to Ritu's left, is at seat 2. Yash is at seat 9. Seats 5, 6 and 8 remain for Tanya, Umesh and Varun. Only one person sits between Tanya and Umesh, i.e. a gap of 2; among $\{5, 6, 8\}$ the only such pair is $(6, 8)$. Umesh is to the right of Manish (seat 7), so Umesh is at seat 8 and Tanya at seat 6; Varun takes seat 5.
Final row: Pooja, Sameer, Ritu, Nikhil, Varun, Tanya, Manish, Umesh, Yash.
The hidden pattern is "the second person sits second to the right of the first". Pooja (1) $\rightarrow$ seat 3 is Ritu; Sameer (2) $\rightarrow$ seat 4 is Nikhil; Ritu (3) $\rightarrow$ seat 5 is Varun; Nikhil (4) $\rightarrow$ seat 6 is Tanya — all four fit. But Varun (5) $\rightarrow$ seat 7 is Manish, not Umesh (who is three seats away). Hence the odd pair is Varun, Umesh, option E.

17. Seats run 1 to 7 from the left. Chandan is at seat 4. Two persons between Chandan and Bhavna gives a gap of 3; Bhavna is to the right, so Bhavna is at seat 7. Ajay is second to Chandan's left, at seat 2, and Deepika is immediately to Chandan's right, at seat 5. Girish earns Rs. 55,000 and therefore sits at the extreme left end, seat 1. Farah neighbours Ajay (seat 2), so Farah is at seat 1 or seat 3; seat 1 is Girish, and Farah must not be at an extreme end anyway, so Farah is at seat 3. The last officer, Ehsaan, takes the remaining seat 6.
Row: Girish, Ajay, Farah, Chandan, Deepika, Ehsaan, Bhavna. (Salaries known: Girish Rs. 55,000, Ajay Rs. 40,000, Deepika Rs. 35,000 and hence Bhavna Rs. 45,000; the rest are not needed.)
The officer earning Rs. 40,000 is Ajay, at seat 2. Third to his right is seat $2 + 3 = 5$, which is Deepika. Hence option C. Chandan is only second to Ajay's right and Ehsaan is fourth, so no other option fits.

18. Ramesh is at seat 8 from the left. Sarita is five seats to his right, so Sarita is at seat $8 + 5 = 13$. Only four persons sit to Sarita's right, so those occupy seats 14 to 17 and the row has $n = 17$ persons. Since 17 is odd, there is a unique middle seat, namely $\dfrac{17+1}{2} = 9$, so Tanvi is at seat 9. Ramesh is at seat 8 and Tanvi at seat 9; these are adjacent, so no one sits between them. Hence option A. Because the total 17 is forced by the clues, the answer is determined and option E is wrong.

19. Seats are 1 to 7 from the left. Mohit is at seat 1 and Lata at seat 7. Two persons between Lata and Jai means a gap of 3, so Jai is at seat $7 - 3 = 4$. Mohit is immediately to Ishita's left, so Ishita is at seat 2, and Kunal, third to her right, is at seat 5. Seats 3 and 6 remain for Neha and Om; Neha is to Om's left, so Neha is at seat 3 and Om at seat 6.
Original row: Mohit, Ishita, Neha, Jai, Kunal, Om, Lata.
Now swap Mohit (seat 1) with Kunal (seat 5): seat 1 becomes Kunal, seat 5 becomes Mohit. Swap Ishita (seat 2) with Om (seat 6): seat 2 becomes Om, seat 6 becomes Ishita.
New row: Kunal, Om, Neha, Jai, Mohit, Ishita, Lata. Jai has not moved and is still at seat 4; second to his right is seat 6, now occupied by Ishita. Hence option D. Mohit is only first to Jai's right and Lata is third, so no other option works.

20. Seats are 1 to 6 from the left. Praveen, Tejas and Qadir must occupy three consecutive seats in that order, because Qadir is two seats to Praveen's right and Tejas fills the seat in between.
Case I: Rajan at seat 1. One person between Rajan and Sneha puts Sneha at seat 3. The free seats are $2, 4, 5, 6$, and the only run of three consecutive free seats is $4, 5, 6$. So Praveen = 4, Tejas = 5, Qadir = 6, and Uday takes seat 2. Row: Rajan, Uday, Sneha, Praveen, Tejas, Qadir.
Case II: Rajan at seat 6. Then Sneha is at seat 4. Free seats are $1, 2, 3, 5$, and the only consecutive run of three is $1, 2, 3$. So Praveen = 1, Tejas = 2, Qadir = 3, and Uday takes seat 5. Row: Praveen, Tejas, Qadir, Sneha, Uday, Rajan.

Both cases survive, so only a statement true in both is "definitely true". Uday is at seat 2 in Case I, not an end, so A fails. Between Sneha and Qadir there are two persons in Case I (seats $4, 5$) but none in Case II (seats 4 and 3 are adjacent), so B fails. Praveen is at seat 4 in Case I, not an end, so D fails. Rajan and Uday are at seats 1 and 2 in Case I and at seats 6 and 5 in Case II — adjacent in both. Hence option C.

21. Let the row hold n persons. Alok is at seat 7 from the left. Bharti is fifth from the right, so Bharti is at seat $n-5+1 = n-4$ from the left. Exactly three persons sit between them, so $|(n-4)-7| = 4$, i.e. $|n-11| = 4$, giving $n = 15$ or $n = 7$. Since $n > 12$, we take $n = 15$, so Bharti is at seat 11 and Alok at seat 7; the persons between them occupy seats 8, 9 and 10. Chetan is one of these, with exactly two persons between Chetan and Bharti, i.e. a gap of 3 from seat 11: $11 - 3 = 8$. So Chetan is at seat 8, that is 8th from the left end. Hence option B. (Seat 14 also has a gap of 3 from Bharti but lies outside the Alok–Bharti stretch, so it is ruled out.)

Subtopic 2.1.2

22. Number the seats 1 (west) to 3 (east). Row 1 faces south, so for them right is west and left is east; Row 2 faces north, so for them right is east and left is west. Tarun sits at the extreme right end of Row 1, which is the west end, so Tarun is at seat 1. Sanjay is immediately to the right of Rahul, i.e. one seat west of Rahul, and only seats 2 and 3 remain, so Sanjay is at seat 2 and Rahul at seat 3. Row 1 is Tarun, Sanjay, Rahul. Vidya sits at the extreme east end of Row 2, so Vidya is at seat 3. Uma sits to the left of Waheeda, and left is west for a north-facing row, so Uma sits west of Waheeda; the free seats are 1 and 2, giving Uma at seat 1 and Waheeda at seat 2. Row 2 is Uma, Waheeda, Vidya. Sanjay sits at seat 2, so the person opposite him is Waheeda.

23. Number seats 1 (west) to 4 (east). Row 1 faces north: their right is east. Row 2 faces south: their right is west. Y is second to the right of W means Y sits two seats west of W, so either W at 3 and Y at 1, or W at 4 and Y at 2. Q occupies seat 1 of Row 1, and R faces Y, so R cannot be at seat 1; therefore Y is not at seat 1. Hence W is at 4, Y at 2, and R at seat 2. P and S take seats 3 and 4 with P immediately to the left (west) of S, giving P at 3 and S at 4. X and Z fill seats 1 and 3 of Row 2; W is at 4, whose only immediate neighbour is seat 3, and Z is not next to W, so Z is at 1 and X at 3. Facing pairs are Q-Z, R-Y, P-X and S-W. Only P and X face each other.

24. Number seats 1 (west) to 3 (east). Row 1 faces south, so for them right is west and left is east. Row 2 faces north, so for them right is east and left is west. Latha is second to the right of Kavya, i.e. two seats west of Kavya, which is possible only with Kavya at 3 and Latha at 1; Meena then takes seat 2. Om faces Meena, so Om is at seat 2. Nitin is to the left of Om, and left for a north-facing person is west, so Nitin is at seat 1 and Pranav at seat 3. Kavya at seat 3 is therefore faced by Pranav.

25. Number seats 1 (west) to 4 (east). Row 2 faces south, so their right is west: the extreme right end of Row 2 is seat 1. Hence Q sits at seat 1, and C, who faces Q, sits at seat 1 of Row 1. B is second to the right of C, and Row 1 faces north so right is east; B is at seat 3. In Row 2, P sits at an extreme end; seat 1 is taken by Q, so P is at seat 4. That leaves seats 2 and 3 for R and S with S immediately to the left of R; for a south-facing person left is east, so S sits one seat east of R, giving R at 2 and S at 3. B at seat 3 is therefore faced by S.

26. Number seats 1 (west) to 5 (east). C is in the middle, so C is at seat 3; A is at seat 1. E is immediately to the left of C and Row 1 faces north, where left is west, so E is at seat 2. B is at the east end, seat 5, leaving D at seat 4. T faces D, so T is at seat 4 of Row 2. Row 2 faces south, so their right is west; Q third to the right of T means $4 - 3 = 1$, so Q is at seat 1. Seats 2, 3 and 5 remain for P, R and S with R immediately to the right of S, i.e. one seat west of S: this gives S at 3 and R at 2, and P at 5. R is at seat 2 and Q at seat 1, which are adjacent, so no one sits between them.

27. Number seats 1 (west) to 4 (east). Row 2 faces south, so right is west: X second to the right of V means X sits two seats west of V, giving V at 3 with X at 1, or V at 4 with X at 2. K faces X and K is not at an extreme end, so K is at seat 2 or 3; therefore X is at seat 2 and V at seat 4, and K is at seat 2. M occupies seat 1. J is immediately to the right of K, and Row 1 faces north where right is

east, so J is at seat 3 and L at seat 4. W and Y take seats 1 and 3; Y must be at an extreme end, so Y is at seat 1 and W at seat 3. Now, second to the left of J (seat 3) means two seats west, i.e. seat 1, which is M. The person facing seat 1 in Row 2 is Y.

28. Number seats 1 (west) to 3 (east). Row 1 faces south, so for them left is east and right is west; the extreme left end of Row 1 is therefore seat 3, where Bimal sits. Ashok and Chirag occupy seats 1 and 2. Row 2 faces north, so their right is east: Divya immediately to the right of Eshan means Divya sits one seat east of Eshan, so Divya is at seat 2 or 3. Ashok faces Divya and Ashok is at seat 1 or 2, so Divya is at seat 2, Eshan at seat 1 and Falguni at seat 3. Then Ashok is at seat 2 and Chirag at seat 1. The extreme right end of Row 1 is the west end, seat 1, occupied by Chirag. Chirag is not listed among the first four options, so the correct choice is None of these.

29. Number seats 1 (west) to 6 (east). Row 1 faces north (left is west, right is east) and Row 2 faces south (left is east, right is west). D and E are at the ends with D west of E, so D is at 1 and E at 6. A is third to the left of B, i.e. $A = B - 3$; with neither at an end, the only fit inside seats 2 to 5 is A at 2 and B at 5. F is immediately east of A, so F is at 3, and C is immediately west of B, so C is at 4. Row 1 is D, A, F, C, B, E. In Row 2, R faces C so R is at 4; T faces D so T is at 1; S faces B so S is at 5. P is second to the right of R, and right is west for Row 2, so P is at $4 - 2 = 2$. U sits between P and R, i.e. at seat 3, leaving Q at seat 6. U at seat 3 faces F. Second to the left of F means two seats west of seat 3, i.e. seat 1, which is D.

30. Number seats 1 (west) to 4 (east). Row 1 faces south, so for them left is east and right is west; Row 2 faces north, so for them left is west and right is east. O at the extreme left end of Row 1 means the east end, seat 4. N is second to the right of L, i.e. two seats west of L, so L at 3 with N at 1 is the only fit, since L at 4 is already O's seat. M then takes seat 2, giving Row 1 as N, M, L, O. Y faces M, so Y sits at seat 2 of Row 2, leaving seats 1, 3 and 4 for W, X and Z. Only one person sits between W and Z, so their seat numbers differ by 2; among 1, 3 and 4 the only such pair is 1 and 3. Since W is to the left of Z and left is west for a north-facing row, W is at seat 1 and Z at seat 3, so X takes seat 4. Row 2 is W, Y, Z, X. L sits at seat 3, and immediately to L's left means one seat east, seat 4, which is O. The person facing seat 4 is X.

31. Number seats 1 (west) to 5 (east). Row 1 faces north; Row 2 faces south, so for Row 2 left is east and right is west. B is at seat 5; two persons between B and D puts D at seat 2. X is third to the left of Z means X sits three seats east of Z, so Z at 1 with X at 4, or Z at 2 with X at 5. A faces X, and A is not an immediate neighbour of D (seat 2), so A is not at seat 1 or 3; A must be at seat 4. Hence X is at seat 4 and Z at seat 1. C and E fill seats 1 and 3 with C to the west, so C is at 1 and E at 3. W faces D, so W is at seat 2; V is not at an end, so V is at seat 3 and Y at seat 5. Rows: Row 1 is C, D, E, A, B; Row 2 is Z, W, V, X, Y. Checking the options: E and V are both at seat 3, so E faces V, which is true. Y at seat 5 faces B, not D. Second to the right of D means seat 4, which is A, not C. The extreme left end of Row 2 is the east end, seat 5, which is Y, not Z.

32. Number seats 1 (west) to 4 (east). Row 1 faces north (right is east); Row 2 faces south (right is west). Chandra is two seats east of Anil, so Anil at 1 with Chandra at 3, or Anil at 2 with Chandra at 4. Hema faces Anil and sits at an extreme end, so Anil is at seat 1 or 4; combining, Anil is at seat 1 and Chandra at seat 3, with Hema at seat 1. Bhavna is immediately west of Chandra, so Bhavna is at 2 and Dinesh at 4. In Row 2, Jatin is second to the right of Indu, i.e. two seats west, so from the free seats 2, 3, 4 we need Indu at 4 and Jatin at 2, leaving Gopal at 3. Now, immediately to the right of Jatin means one seat west of seat 2, i.e. seat 1, which is Hema. The person facing seat 1 in Row 1 is Anil.

33. Number seats 1 (west) to 5 (east). Row 1 faces north (left is west); Row 2 faces south (left is east, right is west). Tarun is at seat 3, so Neha is at seat 3. Ojas is second to the left of Neha, i.e. two seats east, so Ojas is at seat 5. Pallavi is immediately to the right of Ojas, i.e. one seat west, so Pallavi is at seat 4. Qadir is not at an end, so from the free seats 1 and 2, Qadir takes seat 2 and Ritu seat 1. Rakesh faces Ritu, so Rakesh is at seat 1. Vikas is second to the left (west) of Umesh, so from the free seats 2, 4, 5 the only fit is Vikas at 2 and Umesh at 4, leaving Suresh at seat 5. The facing pairs are

Rakesh-Ritu, Vikas-Qadir, Tarun-Neha, Umesh-Pallavi and Suresh-Ojas. Four of the given options are facing pairs; Suresh-Pallavi is not, since Suresh faces Ojas.

34. Number seats 1 (west) to 4 (east). Row 1 faces south, so their right is west and left is east; Row 2 faces north, so their right is east and left is west. Manoj at the extreme right of Row 1 means the west end, seat 1. Lalit is second to the left of Manoj, i.e. two seats east, so Lalit is at seat 3; Kiran and Nisha take seats 2 and 4. Pooja is immediately to the left (west) of Rohit, so Pooja is one seat west of Rohit. Kiran faces Pooja, so Pooja is at seat 2 or 4; seat 4 would force Rohit to seat 5, which does not exist, so Pooja is at seat 2 and Rohit at seat 3. Then Kiran is at seat 2 and Nisha at seat 4. Tanvi is not adjacent to Rohit, so Tanvi avoids seat 4 and takes seat 1, with Sonal at seat 4. Now Nisha sits at seat 4, the east end, and for a south-facing person left is east, so the seats to Nisha's left lie beyond the east end of the row. No one sits second to her left.

35. Number seats 1 (west) to 5 (east). Row 1 faces north (right is east); Row 2 faces south (right is west). D is at seat 1, so the person facing D sits at seat 1 of Row 2, and that person is R. That same person is third to the right of Q, i.e. three seats west of Q, so $Q - 3 = 1$ and Q is at seat 4. T is immediately to the right of Q, one seat west, so T is at seat 3. B is second to the east of D, so B is at seat 3 of Row 1. E is at an extreme end and seat 1 is D's, so E is at seat 5; A and C take seats 2 and 4. In Row 2 the free seats are 2 and 5 for P and S. P faces A, and A is at seat 2 or 4, so P is at seat 2 and A at seat 2, leaving C at seat 4 and S at seat 5. S at seat 5 faces E at seat 5. Between B at seat 3 and E at seat 5 lies only seat 4, occupied by C, so exactly one person sits between them.

36. Number seats 1 (west) to 6 (east). Row 1 faces north (left is west); Row 2 faces south (left is east, right is west). A is at seat 6 and B at seat 5. With two persons between C and F and C to the west, the possibilities are $(1, 4)$, $(2, 5)$ and $(3, 6)$; seats 5 and 6 are occupied, so C is at 1 and F at 4. D and E fill seats 2 and 3; D is not adjacent to C (seat 1), so D avoids seat 2, giving D at 3 and E at 2. Row 1 is C, E, D, F, B, A. Now Q faces F, so Q is at seat 4. One person between Q and S with S to the west puts S at seat 2. T is third to the left of S, i.e. three seats east, so T is at seat 5. P faces the person immediately west of F, that is seat 3 (D), so P is at seat 3. U is at an extreme end, so U is at seat 1 or 6; R must avoid the neighbours of S (seats 1 and 3), and seat 3 is taken, so R is at seat 6 and U at seat 1. Row 2 is U, S, P, Q, T, R. The person exactly between S (seat 2) and Q (seat 4) is P at seat 3, who faces D.

37. Number seats 1 (west) to 6 (east). Row 1 faces north (left is west, right is east); Row 2 faces south (right is west). Girish is at seat 1 or 6, and two persons sit between Hina and Girish, so Girish at 1 gives Hina at 4, while Girish at 6 gives Hina at 3. Hina faces Deepa, so Deepa takes the same seat. Two persons between Deepa and Farhan means their seats differ by 3, and Ankit sits two seats east of Farhan. If Deepa is at 3 then Farhan is at 6 and Ankit would be at seat 8, impossible. So Girish is at 1, Hina at 4, Deepa at 4, Farhan at 1 and Ankit at 3. Chirag is at seat 6; Bhola is not adjacent to Deepa (seats 3 and 5), so from the free seats 2 and 5 Bhola takes seat 2 and Ekta seat 5. Row 1 is Farhan, Bhola, Ankit, Deepa, Ekta, Chirag. In Row 2, Jyoti is second to the right of Hina, i.e. two seats west, so Jyoti is at seat 2. Seats 3, 5, 6 remain; Lata and Kamal must be adjacent with Kamal east, so Lata is at 5 and Kamal at 6, leaving Ishan at seat 3. Row 2 is Girish, Jyoti, Ishan, Hina, Lata, Kamal. Checking: Ishan and Ankit are both at seat 3, true; Girish at 1 and Hina at 4 have seats 2 and 3 between them, true; Ekta and Lata are both at seat 5, true; second to the left of Deepa is seat 2, which is Bhola, true. Row 1 faces north, so its extreme left end is the west end, seat 1, which is Farhan, not Chirag. That statement is false.

38. Number seats 1 (west) to 5 (east). Row 1 faces south, so left is east and right is west; Row 2 faces north, so left is west and right is east. C is third to the left of E means C sits three seats east of E, so E at 1 with C at 4, or E at 2 with C at 5. R faces E, so R takes E's seat number. R is second to the left of P, i.e. two seats west, so $P = R + 2$. Q occupies seat 1, so R cannot be at seat 1; hence E is at seat 2, C at seat 5, R at seat 2 and P at seat 4. A is at the extreme right of Row 1, which for a south-facing row is the west end, seat 1. B and D take seats 3 and 4; B is not adjacent to C (seat 5), so B avoids seat 4, giving B at 3 and D at 4. T faces B, so T is at seat 3, leaving S at seat 5. Original Row 1 is A, E, B, D, C. Rearranged alphabetically from the west end, Row 1 becomes A, B, C, D, E

at seats 1 to 5. P sits at seat 4 of Row 2, so P will face whoever is at seat 4, namely D.

39. Number seats 1 (west) to 6 (east). Row 1 faces south (left is east, right is west); Row 2 faces north (left is west, right is east). Dhruv at the extreme left of Row 1 is the east end, seat 6. Two persons between Dhruv and Ajay places Ajay at seat 3. Chetan is immediately to the right of Ajay, one seat west, so Chetan is at seat 2. Bipin is second to the left of Chetan, two seats east, so Bipin is at seat 4. Ganesh is not adjacent to Bipin, so from the free seats 1 and 5 Ganesh takes seat 1 and Eknath seat 5. Row 1 is Ganesh, Chetan, Ajay, Bipin, Eknath, Dhruv. Kavita faces Bipin, so Kavita is at seat 4. Two persons between Kavita and Hema gives Hema at seat 1 or seat 7; only seat 1 is valid. Juhi is second to the right of Hema, two seats east, so Juhi is at seat 3. Seats 2, 5 and 6 remain; Latika and Meera must be adjacent with Meera east, so Latika is at 5 and Meera at 6, leaving Indira at seat 2. Row 2 is Hema, Indira, Juhi, Kavita, Latika, Meera. If Chetan and Eknath swap, Chetan moves to seat 5 and will be faced by Latika, who is not among the first four options.

40. Number seats 1 (west) to 4 (east). Row 1 faces north, so their right is east and left is west; Row 2 faces south, so their left is east and right is west. Hansa is second to the left of Farid, and left is east for Row 2, so Hansa sits two seats east of Farid: either Farid at 1 with Hansa at 3, or Farid at 2 with Hansa at 4. Chitra occupies seat 1 of Row 1, and Arjun faces Hansa, so Arjun sits at Hansa's seat number, which is 3 or 4. Divya sits immediately west of Bhavesh, so they occupy consecutive seats. If Arjun were at seat 3, Divya and Bhavesh would have to take seats 2 and 4, which are not consecutive; so Arjun is at seat 4, Hansa at seat 4 and Farid at seat 2. Then Divya is at seat 2 and Bhavesh at seat 3. Gaurav is at an extreme end, and seat 4 is Hansa's, so Gaurav is at seat 1 and Ekta at seat 3. Row 1 is Chitra, Divya, Bhavesh, Arjun; Row 2 is Gaurav, Farid, Ekta, Hansa. Ekta at seat 3 is faced by Bhavesh, so Bhavesh deposited Rs. 20,000. From Arjun more than Divya more than Chitra, the remaining amounts give Arjun Rs. 80,000, Divya Rs. 60,000 and Chitra Rs. 40,000. In Row 2, Ekta deposited Rs. 90,000 and Hansa Rs. 30,000; from the remaining Rs. 50,000 and Rs. 70,000, Farid is Rs. 20,000 less than Gaurav, so Gaurav deposited Rs. 70,000 and Farid Rs. 50,000. Bhavesh at seat 3 is faced by Ekta, who deposited Rs. 90,000. Immediately to the right of Chitra means one seat east, seat 2, which is Divya, who deposited Rs. 60,000. The total is $90000 + 60000 = 150000$, that is Rs. 1,50,000.

41. Number seats 1 (west) to 6 (east). Row 1 faces south (left is east, right is west); Row 2 faces north (left is west, right is east). Rishi third to the right of Pallav means Rishi sits three seats west of Pallav, so the options are Pallav at 4, 5 or 6 with Rishi at 1, 2 or 3. Neither may be at an end, so Pallav is at 5 and Rishi at 2. Yamini faces Pallav, so Yamini is at seat 5. One person between Yamini and Zoya gives Zoya at seat 3 or 7, so Zoya is at seat 3. Waheeda at the extreme right of a north-facing row is the east end, seat 6. Vidya is fourth to the left of Waheeda, i.e. four seats west, so Vidya is at seat 2. Seats 1 and 4 remain for Anita and Bindu; Anita is not adjacent to Zoya (seats 2 and 4), so Anita is at seat 1 and Bindu at seat 4. Row 2 is Anita, Vidya, Zoya, Bindu, Yamini, Waheeda. Sahil faces Bindu, so Sahil is at seat 4. Tejas is immediately to the right of Sahil, one seat west, so Tejas is at seat 3. Uday and Qamar take seats 1 and 6 with Uday west, so Uday is at 1 and Qamar at 6. Row 1 is Uday, Rishi, Tejas, Sahil, Pallav, Qamar. Vidya at seat 2 is faced by Rishi. Between Qamar at seat 6 and Rishi at seat 2 lie seats 3, 4 and 5, that is three persons.

42. Number seats 1 (west) to 5 (east). Row 1 faces north (left is west); Row 2 faces south (left is east, right is west). Chirag is at seat 5, and Bina is third to the left, i.e. three seats west, so Bina is at seat 2. Ira faces Bina, so Ira is at seat 2. Hari is second to the left of Ira, and left is east for Row 2, so Hari is at seat 4. Farhan is at an extreme end, seat 1 or 5, and is not adjacent to Hari, whose neighbours are seats 3 and 5; hence Farhan is at seat 1. Gita and Jai take seats 3 and 5 with Gita to the west, so Gita is at 3 and Jai at 5. Row 2 is Farhan, Ira, Gita, Hari, Jai. Devi faces Gita, so Devi is at seat 3 of Row 1. Aman and Esha take seats 1 and 4; Esha is not adjacent to Devi (seats 2 and 4), so Esha is at seat 1 and Aman at seat 4. Row 1 is Esha, Bina, Devi, Aman, Chirag. After the cyclic shift one seat east, Esha moves to 2, Bina to 3, Devi to 4, Aman to 5 and Chirag to 1. Hari sits at seat 4, so Hari will now face Devi.

Subtopic 2.1.3

43. Recall the rule for circular tables: for a person facing the centre the immediate LEFT neighbour is the next seat in the clockwise direction and the immediate RIGHT neighbour is the next seat anticlockwise; for a person facing outward the two directions are interchanged. Number the seats 1 to 8 clockwise and place Anil at seat 1; all eight face the centre, so left means $+1$ and right means -1. Chetan is second to the left of Anil, so Chetan is at seat $1+2=3$, and Bhavna, sitting exactly between them, is at seat 2. Hema is immediately to the right of Anil, i.e. one seat anticlockwise, so Hema is at seat 8. Seats $4, 5, 6, 7$ remain for Divya, Esha, Farhan and Gaurav. Divya is third to the right of Gaurav, so seat of Divya = seat of Gaurav -3; among the free seats the only such pair is Gaurav at 7 and Divya at 4. Esha must be adjacent to Divya, so Esha is at seat 5, and Farhan, the other neighbour of Esha, takes seat 6. The clockwise order is Anil, Bhavna, Chetan, Divya, Esha, Farhan, Gaurav, Hema. Third to the right of Esha (seat 5) means three seats anticlockwise: $5-3=2$, which is Bhavna.

44. Recall the rule for circular tables: for a person facing the centre the immediate LEFT neighbour is the next seat in the clockwise direction and the immediate RIGHT neighbour is the next seat anticlockwise; for a person facing outward the two directions are interchanged. Here everybody faces outward, so for each person LEFT is one seat anticlockwise and RIGHT is one seat clockwise. Number the seats 1 to 6 clockwise with Rahul at seat 1. Tarun is second to the right of Rahul, i.e. two seats clockwise, so Tarun is at seat 3. Yash is to the immediate left of Rahul, i.e. one seat anticlockwise of seat 1, so Yash is at seat 6. Seema is adjacent to both Rahul (seat 1) and Tarun (seat 3), so Seema must be at seat 2. Seats 4 and 5 are left for Usha and Vikram; Usha is to the immediate left of Vikram, i.e. one seat anticlockwise of Vikram, which forces Usha at seat 4 and Vikram at seat 5. The clockwise order is Rahul, Seema, Tarun, Usha, Vikram, Yash. The immediate left of Tarun (seat 3) is one seat anticlockwise, seat 2, i.e. Seema.

45. Recall the rule for circular tables: for a person facing the centre the immediate LEFT neighbour is the next seat in the clockwise direction and the immediate RIGHT neighbour is the next seat anticlockwise; for a person facing outward the two directions are interchanged. All face the centre, so left is clockwise $(+1)$ and right is anticlockwise (-1); with 8 seats, "exactly opposite" means 4 seats away. Number the seats 1 to 8 clockwise, Ishan at seat 1. Jyoti, third to the left of Ishan, is at seat 4. Kamal is opposite Jyoti, so Kamal is at seat 8. Lata is to the immediate right of Kamal, i.e. one seat anticlockwise of seat 8, so Lata is at seat 7. Manish is to the immediate left of Ishan, so Manish is at seat 2. Neha is opposite Manish, so Neha is at seat 6. Omkar is to the immediate right of Neha, i.e. seat 5. The only seat left, seat 3, goes to Pooja. Opposite Ishan (seat 1) is seat 5, which is Omkar. Note that Neha is opposite Manish and Pooja is opposite Lata, so neither of them can be the answer.

46. Recall the rule for circular tables: for a person facing the centre the immediate LEFT neighbour is the next seat in the clockwise direction and the immediate RIGHT neighbour is the next seat anticlockwise; for a person facing outward the two directions are interchanged. Everyone faces the centre, so left is clockwise. Number the seats 1 to 7 clockwise with Ajay at seat 1. Deepa is to the immediate left of Ajay, so Deepa is at seat 2. Bindu is second to the left of Ajay, so Bindu is at seat 3. Firoz is second to the left of Bindu, so Firoz is at seat 5. Chirag is third to the right of Bindu, i.e. three seats anticlockwise from seat 3, which on a seven-seat circle is seat 7. Ekta is to the immediate right of Chirag, i.e. seat 6. The remaining seat 4 belongs to Girish. The clockwise order is Ajay, Deepa, Bindu, Girish, Firoz, Ekta, Chirag. Starting at Firoz (seat 5) and moving to his left (clockwise) we pass seat 6 Ekta, seat 7 Chirag and seat 1 Ajay before reaching Deepa at seat 2. Hence 3 persons sit between them in that direction.

47. Recall the rule for circular tables: for a person facing the centre the immediate LEFT neighbour is the next seat in the clockwise direction and the immediate RIGHT neighbour is the next seat anticlockwise; for a person facing outward the two directions are interchanged. Number the seats 1 to 6 clockwise and put Naveen at seat 1. Naveen faces the centre, so his left is clockwise: Rekha, his immediate left, is at seat 2, and Priya, second to his left, is at seat 3. Priya faces outward, so HER right is clockwise; Qadir, to the immediate right of Priya, is therefore at seat 4. Sunil is exactly

opposite Priya, i.e. 3 seats away from seat 3, so Sunil is at seat 6. The only free seat, 5, is Tanvi's. The clockwise order is Naveen, Rekha, Priya, Qadir, Tanvi, Sunil. Tanvi faces outward, so her right is the clockwise direction: two seats clockwise from seat 5 gives seat 7, i.e. seat 1, which is Naveen. Moving anticlockwise instead would give Priya, which is the trap for students who forget that Tanvi faces outward.

48. Recall the rule for circular tables: for a person facing the centre the immediate LEFT neighbour is the next seat in the clockwise direction and the immediate RIGHT neighbour is the next seat anticlockwise; for a person facing outward the two directions are interchanged. All face outward, so for every person LEFT is anticlockwise and RIGHT is clockwise. Number the seats 1 to 8 clockwise, Amit at seat 1. Babita is third to the left of Amit, i.e. three seats anticlockwise, which is seat 6. Chandan is opposite Amit, so Chandan is at seat 5. Dolly is second to the right of Chandan, i.e. two seats clockwise: seat 7. Eshwar is second to the right of Babita: $6 + 2 = 8$. Farida is to the immediate right of Amit, i.e. seat 2. Gopal must be adjacent to Chandan (seat 5), so Gopal is at seat 4 or seat 6; seat 6 is Babita's, so Gopal is at seat 4, and Harsha takes the last free seat 3. The clockwise order is Amit, Farida, Harsha, Gopal, Chandan, Babita, Dolly, Eshwar. Dolly is at seat 7, so her neighbours are seat 6 (Babita) and seat 8 (Eshwar). Chandan, Amit and Gopal are not adjacent to Dolly at all, so no other pair works.

49. Recall the rule for circular tables: for a person facing the centre the immediate LEFT neighbour is the next seat in the clockwise direction and the immediate RIGHT neighbour is the next seat anticlockwise; for a person facing outward the two directions are interchanged. All five face the centre, so left is clockwise. Number the seats 1 to 5 clockwise with Kiran at seat 1. Lalit is second to the left of Kiran, so Lalit is at seat 3. Meena is to the immediate right of Kiran, i.e. one seat anticlockwise, so Meena is at seat 5. Nitin is to the immediate left of Lalit, so Nitin is at seat 4. The only seat left, seat 2, is Ojas's. The clockwise order is Kiran, Ojas, Lalit, Nitin, Meena. Second to the left of Ojas (seat 2) is seat $2 + 2 = 4$, which is Nitin. Lalit is only first to Ojas's left, so he is not the answer.

50. Recall the rule for circular tables: for a person facing the centre the immediate LEFT neighbour is the next seat in the clockwise direction and the immediate RIGHT neighbour is the next seat anticlockwise; for a person facing outward the two directions are interchanged. Number the seats 1 to 8 clockwise and place Aarti at seat 1. Aarti faces the centre, so her left is clockwise: Bikram is at seat 2, and Hitesh, to her immediate right, is at seat 8. Bikram also faces the centre, so Chhaya, to his immediate left, is at seat 3. Ekansh is opposite Aarti, i.e. at seat 5. Ekansh faces outward, so HIS right is clockwise; Girdhar, second to Ekansh's right, is at seat 7. Seats 4 and 6 remain for Dhruv and Falguni. Falguni faces outward, so her left is anticlockwise, and Dhruv must sit two seats anticlockwise of Falguni; of the two free seats this works only with Falguni at seat 6 and Dhruv at seat 4. The clockwise order is Aarti, Bikram, Chhaya, Dhruv, Ekansh, Falguni, Girdhar, Hitesh. Third to the left of Falguni, who faces outward so that her left is anticlockwise, is seat $6 - 3 = 3$, which is Chhaya.

51. Recall the rule for circular tables: for a person facing the centre the immediate LEFT neighbour is the next seat in the clockwise direction and the immediate RIGHT neighbour is the next seat anticlockwise; for a person facing outward the two directions are interchanged. With 10 persons all facing the centre, left is clockwise and "exactly opposite" means 5 seats away. Number the seats 1 to 10 clockwise, Anup at seat 1. Bharti is second to his left, i.e. seat 3, and Gita, between them, is at seat 2. Hari is to the immediate left of Bharti, i.e. seat 4, and Chandra is second to Bharti's left, i.e. seat 5. Ira is opposite Anup, so Ira is at seat 6; Jatin is opposite Bharti, so Jatin is at seat 8; Fatima is opposite Chandra, so Fatima is at seat 10. Eshan is to the immediate right of Fatima, i.e. one seat anticlockwise: seat 9. Deep is third to the right of Fatima: $10 - 3 = 7$. The clockwise order is Anup, Gita, Bharti, Hari, Chandra, Ira, Deep, Jatin, Eshan, Fatima. Starting at Hari (seat 4) and moving to his left (clockwise) we pass Chandra (seat 5), Ira (seat 6) and Deep (seat 7) before reaching Jatin at seat 8. So 3 persons sit between them in that direction.

52. Recall the rule for circular tables: for a person facing the centre the immediate LEFT neighbour is the next seat in the clockwise direction and the immediate RIGHT neighbour is the next seat anti-clockwise; for a person facing outward the two directions are interchanged. First settle the directions.

Latika, Nandini and Qamar face the centre. Mohit and Pankaj face opposite to Latika, so both face outward; Ritu faces opposite to Qamar, so Ritu also faces outward. That already accounts for the three outward-facing persons, so Om (same direction as Nandini, i.e. the centre) and Sameer must face the centre. Now the seats: number them 1 to 8 clockwise with Latika at seat 1. Latika faces the centre, so her left is clockwise: Mohit is at seat 2 and Nandini at seat 3. Nandini also faces the centre, so Om, to her immediate left, is at seat 4. Pankaj is opposite Latika, i.e. seat 5. Pankaj faces outward, so HIS right is clockwise: Qamar is at seat 6 and Ritu, second to his right, is at seat 7. Sameer takes the remaining seat 8. Sameer faces the centre, so his right is anticlockwise: third to his right is seat $8 - 3 = 5$, which is Pankaj.

53. Recall the rule for circular tables: for a person facing the centre the immediate LEFT neighbour is the next seat in the clockwise direction and the immediate RIGHT neighbour is the next seat anticlockwise; for a person facing outward the two directions are interchanged. All seven face the centre, so left is clockwise. Number the seats 1 to 7 clockwise with Anjali at seat 1. Bhaskar is at seat 2 and Charulata at seat 3; Devraj, immediately to Charulata's left, is at seat 4. Gauri is third to Anjali's right, i.e. three seats anticlockwise of seat 1, which is seat 5. Jaya is second to Gauri's left, i.e. seat 7, leaving seat 6 for Imran. The clockwise order is Anjali, Bhaskar, Charulata, Devraj, Gauri, Imran, Jaya. Now the banks. Axis sits immediately left of SBI; SBI is Anjali at seat 1, so Axis is at seat 2, i.e. Bhaskar. HDFC sits immediately left of Gauri (seat 5), i.e. at seat 6: Imran. BOB sits immediately right of HDFC, i.e. one seat anticlockwise of seat 6, namely seat 5: Gauri. Devraj has ICICI, so only PNB and Canara remain, for Charulata and Jaya; since Jaya does not work in PNB, Jaya works in Canara and Charulata in PNB. Third to the left of Imran (seat 6) is seat $6 + 3 = 9$, i.e. seat 2 on a seven-seat circle, which is Bhaskar, who works in Axis.

54. Recall the rule for circular tables: for a person facing the centre the immediate LEFT neighbour is the next seat in the clockwise direction and the immediate RIGHT neighbour is the next seat anticlockwise; for a person facing outward the two directions are interchanged. Everybody faces outward, so for each of them LEFT is anticlockwise and RIGHT is clockwise. Number the seats 1 to 7 clockwise with Kavita at seat 1. Lokesh is to Kavita's immediate right, i.e. one seat clockwise: seat 2. Suresh has Kavita to his immediate right, so Suresh sits one seat anticlockwise of Kavita: seat 7. The free seats are $3, 4, 5, 6$. Mahesh is three seats anticlockwise of Rashmi and Nutan is one seat clockwise of Mahesh. Taking Rashmi at seat 6 gives Mahesh at seat 3 and Nutan at seat 4, and then Pravin at seat 5 is indeed adjacent to both Nutan (seat 4) and Rashmi (seat 6); no other placement of Rashmi satisfies every condition. The clockwise order is Kavita, Lokesh, Mahesh, Nutan, Pravin, Rashmi, Suresh. From Kavita (seat 1) moving to her left, i.e. anticlockwise, we pass Suresh (seat 7) and Rashmi (seat 6) before reaching Pravin at seat 5, so 2 persons sit between them in that direction.

55. Recall the rule for circular tables: for a person facing the centre the immediate LEFT neighbour is the next seat in the clockwise direction and the immediate RIGHT neighbour is the next seat anticlockwise; for a person facing outward the two directions are interchanged. Number the seats 1 to 8 clockwise with Bhavesh at seat 1. Bhavesh faces the centre, so Chitra, to his immediate left, is at seat 2. Chitra faces outward, so HER right is clockwise: Devika is at seat 3. Harpreet is opposite Bhavesh, i.e. seat 5; Harpreet faces the centre, so her right is anticlockwise and Gagan sits at seat 4, while Ishita, to her immediate left, sits at seat 6. Ishita faces the centre, so Jagdish, to her immediate left, is at seat 7, and Kamlesh takes seat 8. The clockwise order is Bhavesh, Chitra, Devika, Gagan, Harpreet, Ishita, Jagdish, Kamlesh. Now test each pair against the relation "the first person sits to the immediate left of the second": Chitra (seat 2) is immediately left of centre-facing Bhavesh (seat 1) – yes; Gagan (seat 4) is immediately left of centre-facing Devika (seat 3) – yes; Jagdish (seat 7) is immediately left of centre-facing Ishita (seat 6) – yes; Bhavesh (seat 1) is immediately left of centre-facing Kamlesh (seat 8) – yes. But Gagan faces outward, so his immediate left is seat 3, Devika, not Harpreet; Harpreet is in fact to Gagan's immediate RIGHT. Hence Harpreet - Gagan is the odd pair.

56. Recall the rule for circular tables: for a person facing the centre the immediate LEFT neighbour is the next seat in the clockwise direction and the immediate RIGHT neighbour is the next seat anticlockwise; for a person facing outward the two directions are interchanged. Number the seats 1 to 9 clockwise, Neeraj at seat 1. Neeraj faces the centre, so his left is clockwise: Omprakash is at

seat 2, Pallavi at seat 3 and Renu at seat 5; his right is anticlockwise, so Varsha is at seat 9. Varsha faces the centre too, so Umesh, to her immediate right, is at seat 8. Pallavi faces outward, so HER right is clockwise: Qasim is at seat 4. Renu also faces outward, so her right is clockwise: Sanjay is at seat 6 and Tulsi, second to Renu's right, is at seat 7. The clockwise order is Neeraj, Omprakash, Pallavi, Qasim, Renu, Sanjay, Tulsi, Umesh, Varsha. Tulsi faces outward, so her right is the clockwise direction: three seats clockwise from seat 7 gives $7 + 3 = 10$, i.e. seat 1 on a nine-seat circle, which is Neeraj. Counting anticlockwise would wrongly give Qasim.

57. Recall the rule for circular tables: for a person facing the centre the immediate LEFT neighbour is the next seat in the clockwise direction and the immediate RIGHT neighbour is the next seat anticlockwise; for a person facing outward the two directions are interchanged. Number the seats 1 to 8 clockwise with Ravindra at seat 1; he faces the centre, so his left is clockwise. Sushma, to his immediate left, is at seat 2 and faces outward. Since Sushma faces outward, HER right is clockwise: Tejas is at seat 3. Vaishali is opposite Ravindra, i.e. seat 5, and faces the centre. Vaishali faces the centre, so her right is anticlockwise – Uday is at seat 4 – and her left is clockwise – Wasim is at seat 6 and Yamini at seat 7. Zoya takes the remaining seat 8. Directions: Wasim faces the same way as Vaishali, i.e. the centre; Yamini faces opposite to Wasim, i.e. outward; Zoya faces the centre. The neighbours of Tejas are seats 2 and 4, i.e. Sushma and Uday, and both must face outward; this confirms Sushma's direction and tells us that Uday faces outward as well. So the clockwise order is Ravindra (in), Sushma (out), Tejas (in), Uday (out), Vaishali (in), Wasim (in), Yamini (out), Zoya (in). Yamini faces outward, so her left is anticlockwise: three seats anticlockwise from seat 7 is seat 4, which is Uday.

58. Recall the rule for circular tables: for a person facing the centre the immediate LEFT neighbour is the next seat in the clockwise direction and the immediate RIGHT neighbour is the next seat anticlockwise; for a person facing outward the two directions are interchanged. With 10 seats, "exactly opposite" means 5 seats away. Number the seats 1 to 10 clockwise with Ashwin at seat 1; he faces the centre, so Bhagya (his immediate left) is at seat 2 and Kalpana (his immediate right) is at seat 10. Bhagya faces outward, so her right is clockwise: Chetna is at seat 3. Ganpat is opposite Ashwin, i.e. seat 6; he faces the centre, so his right is anticlockwise – Eshwari at seat 5 and Dilip, second to his right, at seat 4 – and his left is clockwise – Harish at seat 7. Harish faces outward, so his right is clockwise: Indira is at seat 8. Jeevan is opposite Dilip (seat 4), i.e. seat 9. The clockwise order is Ashwin, Bhagya, Chetna, Dilip, Eshwari, Ganpat, Harish, Indira, Jeevan, Kalpana. Chetna faces the centre, so her left is clockwise: third to her left is seat $3+3 = 6$, which is Ganpat. Ganpat is not listed in the first four options – Dilip is only first to Chetna's left, Eshwari is second and Harish is fourth, while Indira is not on that side at all – so the correct response is "None of these".

59. Recall the rule for circular tables: for a person facing the centre the immediate LEFT neighbour is the next seat in the clockwise direction and the immediate RIGHT neighbour is the next seat anticlockwise; for a person facing outward the two directions are interchanged. Number the seats 1 to 7 clockwise with Bhanu at seat 1; Bhanu faces the centre, so Chandni (immediate left) is at seat 2 and Hemal (immediate right) is at seat 7. Chandni faces outward, so her right is clockwise: the Kochi officer is at seat 3. The officers still to be placed, in seats $3, 4, 5, 6$, are Dinkar, Ela, Faiz and Gopika. The seat-3 officer cannot be Ela (she sits to his or her left), cannot be Faiz – Faiz faces outward, so his left would be seat 2, Chandni, not Ela – and cannot be Gopika, who is from Indore, not Kochi. So Dinkar is at seat 3 and is from Kochi; being centre-facing, his left is seat 4, where Ela sits. The Surat officer sits to the immediate left of centre-facing Ela, i.e. at seat 5. Only seats 5 and 6 remain, for Faiz and Gopika, and Gopika sits to the immediate right of outward-facing Faiz, i.e. one seat clockwise of him; hence Faiz is at seat 5 and Gopika at seat 6, so Faiz is from Surat. The clockwise order is Bhanu (Pune), Chandni, Dinkar (Kochi), Ela, Faiz (Surat), Gopika (Indore), Hemal. Gopika faces the centre, so her right is anticlockwise: fourth to her right is seat $6 - 4 = 2$, i.e. Chandni, who is therefore from Jaipur. Only Nagpur and Bhopal are left, for Ela and Hemal; since Hemal is not from Nagpur, Hemal is from Bhopal and Ela from Nagpur. Ela faces the centre, so third to her left is seat $4 + 3 = 7$, which is Hemal, from Bhopal.

60. Recall the rule for circular tables: for a person facing the centre the immediate LEFT neighbour

is the next seat in the clockwise direction and the immediate RIGHT neighbour is the next seat anticlockwise; for a person facing outward the two directions are interchanged. Number the seats 1 to 8 clockwise with Anurag at seat 1; he faces the centre, so Bhavya (immediate left) is at seat 2 and Hasan (immediate right) is at seat 8. Bhavya faces outward, so HER right is clockwise: Chaitanya is at seat 3, and he too faces outward. Eesha is opposite Anurag, i.e. seat 5, facing the centre; so her right is anticlockwise (Damodar at seat 4) and her left is clockwise (Firdaus at seat 6, Gulab at seat 7). Directions: Firdaus faces opposite to Eesha, i.e. outward; Gulab faces opposite to Firdaus, i.e. the centre; Hasan faces opposite to Gulab, i.e. outward. The clockwise order is Anurag (in), Bhavya (out), Chaitanya (out), Damodar (in), Eesha (in), Firdaus (out), Gulab (in), Hasan (out). Now check each option. Damodar faces the centre, so second to his left is seat $4+2=6$, Firdaus, not Chaitanya – false. Gulab at seat 7 has Firdaus (seat 6) and Hasan (seat 8) as his two neighbours, so he sits exactly between them – TRUE. Between Bhavya (seat 2) and Damodar (seat 4) only one person, Chaitanya, sits on the shorter side, and five on the other – false. Anurag faces the centre – false. Eesha (seat 5) has Damodar and Firdaus as neighbours, not Gulab – false.

61. Recall the rule for circular tables: for a person facing the centre the immediate LEFT neighbour is the next seat in the clockwise direction and the immediate RIGHT neighbour is the next seat anticlockwise; for a person facing outward the two directions are interchanged. Number the seats 1 to 9 clockwise with Alka at seat 1; Alka faces the centre, so her left is clockwise and Fauzia is at seat 2. Fauzia faces outward, so her right is clockwise: Chetak is at seat 3. Chetak faces the centre, so Hiren, to his immediate left, is at seat 4. Devi is fourth to Alka's left, i.e. seat 5; Devi faces the centre, so Ismail, to her immediate left, is at seat 6. Bipin is third to Alka's right, i.e. three seats anticlockwise of seat 1, which is seat 7. Bipin faces the centre, so Gagandeep, to his immediate left, is at seat 8; Gagandeep faces outward, so HIS right is clockwise and Ehsaan is at seat 9. The present clockwise order from seat 1 is Alka, Fauzia, Chetak, Hiren, Devi, Ismail, Bipin, Gagandeep, Ehsaan. Seating them alphabetically clockwise from Alka fills seats 1 to 9 with Alka, Bipin, Chetak, Devi, Ehsaan, Fauzia, Gagandeep, Hiren, Ismail. Comparing seat by seat: seat 1 Alka is unchanged (but excluded); seat 2 Fauzia becomes Bipin; seat 3 Chetak stays Chetak; seat 4 Hiren becomes Devi; seat 5 Devi becomes Ehsaan; seat 6 Ismail becomes Fauzia; seat 7 Bipin becomes Gagandeep; seat 8 Gagandeep becomes Hiren; seat 9 Ehsaan becomes Ismail. Apart from Alka, only Chetak keeps his seat, so the answer is one.

62. Recall the rule for circular tables: for a person facing the centre the immediate LEFT neighbour is the next seat in the clockwise direction and the immediate RIGHT neighbour is the next seat anticlockwise; for a person facing outward the two directions are interchanged. Number the seats 1 to 8 clockwise with Ankit at seat 1, facing the centre; since adjacent persons face opposite ways, the odd-numbered seats face the centre and the even-numbered seats face outward. Ankit's left is clockwise, so Bijoy is at seat 2 and faces outward. Bijoy faces outward, so HIS right is clockwise: Chhavi is at seat 3. Chhavi faces the centre, so Dipali, to her immediate left, is at seat 4. Eresh is opposite Ankit, i.e. seat 5, facing the centre; his left is clockwise, so Farhat is at seat 6 and Gitanjali at seat 7, leaving seat 8 for Harnam. Now the branches. Ankit and Chhavi are Andheri. Chhavi (seat 3) has neighbours at seats 2 and 4, so Bijoy and Dipali are Borivali. Farhat is not Borivali, so Farhat is Andheri – three Andheri and two Borivali so far. Gitanjali works in the same branch as Eresh; if that branch were Andheri there would be five Andheri employees, which is impossible, so Eresh and Gitanjali are both Borivali, completing the four, and Harnam is the fourth Andheri employee. Finally, Bijoy faces outward, so his immediate left is one seat anticlockwise, seat 1, i.e. Ankit, who works in the Andheri branch. Ankit faces the centre, so his right is anticlockwise: second to his right is seat $1-2$, i.e. seat 7, which is Gitanjali.

63. Recall the rule for circular tables: for a person facing the centre the immediate LEFT neighbour is the next seat in the clockwise direction and the immediate RIGHT neighbour is the next seat anticlockwise; for a person facing outward the two directions are interchanged. First fix the directions: on a circle of eight, four persons no two of whom are adjacent must occupy alternate seats. Number the seats 1 to 8 clockwise with Prem at seat 1; since Prem faces the centre, all odd seats face the centre and all even seats face outward. Tanmay is opposite Prem, i.e. seat 5, facing the centre; so his left is

clockwise, giving Urvashi at seat 6 and Vishal at seat 7. Prem's right is anticlockwise, so Wahida is at seat 8. The free seats $2, 3, 4$ go to Qudsia, Rohit and Sonal, and since Rohit sits exactly between the other two he is at seat 3. Sonal must have Qudsia second to her left. Seat 4 faces outward, so a person there has her left anticlockwise and second to her left is seat 2 – exactly where Qudsia would sit. The alternative, Sonal at seat 2 (also outward-facing), would put second to her left at seat 8, already occupied by Wahida, so it fails. Hence Sonal is at seat 4 and Qudsia at seat 2. The clockwise order is Prem (in), Qudsia (out), Rohit (in), Sonal (out), Tanmay (in), Urvashi (out), Vishal (in), Wahida (out). Qudsia faces outward, so her right is the clockwise direction: three seats clockwise from seat 2 is seat 5, which is Tanmay. Tanmay does not appear among the first four options, so the answer is "None of these".

Subtopic 2.1.4

64. When a person faces the centre, his left hand points in the clockwise direction; so for all four persons here, "left" means the next seat clockwise and "right" means the next seat anti-clockwise. Fix Bhavna at the North corner. Second to her left means two seats clockwise: East, then South. So Anil sits at the South corner (diagonally opposite Bhavna). Chetan sits immediate left of Anil, i.e. one seat clockwise from South, which is West. The only corner left for Divya is East. Divya's immediate right is one seat anti-clockwise from East, which is North — Bhavna's corner. Hence Bhavna sits to the immediate right of Divya.

65. When a person faces away from the centre, his left hand points in the anti-clockwise direction; so here "left" means the next seat anti-clockwise and "right" means the next seat clockwise. Put Prakash at the North corner. Rekha, immediate left of Prakash, is one seat anti-clockwise from North, i.e. the West corner. Sunita is diagonally opposite Prakash, i.e. at the South corner. The remaining corner, East, goes to Qadir. Qadir's immediate right is one seat clockwise from East, which is South. Sunita sits there. Note that Rekha would have been the answer only if the four were facing the centre — the outward facing reverses the sense of left and right.

66. Number the six seats 1 to 6 clockwise, with corners at $1, 3, 5$ and the middles of the sides at $2, 4, 6$. Everyone faces the centre, so left means clockwise and right means anti-clockwise. Let Amit be at seat 1 (a corner). Bina is second to his right: anti-clockwise 6, then 5, so Bina is at 5. Chandan is third to Bina's left: clockwise from 5 we get $6, 1, 2$, so Chandan is at 2. Deepa is immediate right of Amit: anti-clockwise from 1 is 6, so Deepa is at 6. Seats 3 and 4 remain for Esha and Farhan. Chandan at 2 has neighbours 1 and 3; since Esha is not his neighbour, Esha cannot take seat 3, so Esha is at 4 and Farhan at 3. Now, third to the left of Deepa (seat 6) means three seats clockwise: 1 (Amit), 2 (Chandan), 3 (Farhan). Hence Farhan.

67. Number the eight seats 1 to 8 clockwise, corners at $1, 3, 5, 7$ (facing centre: left is clockwise) and middles of sides at $2, 4, 6, 8$ (facing outward: left is anti-clockwise, right is clockwise). Put Tarun at corner 1. Ravi is second to Tarun's left, i.e. two seats clockwise: 2, then 3; Ravi is at corner 3. Sonal sits between Ravi and Tarun, so Sonal is at 2. Usha is second to Sonal's right; Sonal faces outward so right is clockwise: 3, then 4; Usha is at 4. Vikas is immediate right of Usha, i.e. one seat clockwise from 4, so Vikas is at corner 5. The remaining corner 7 is Yamini's. Zoya is immediate right of Yamini; Yamini faces the centre, so right is anti-clockwise: seat 6. Zoya is at 6 and Wasim takes seat 8. Wasim faces outward, so his left is anti-clockwise: 7 (Yamini), 6 (Zoya), 5 (Vikas). Third to the left of Wasim is Vikas.

68. Number the seats 1 to 6 clockwise, corners at $1, 3, 5$ (facing outward: left is anti-clockwise, right is clockwise) and middles of sides at $2, 4, 6$ (facing the centre: left is clockwise, right is anti-clockwise). Put Ajay at corner 1. His immediate left is one seat anti-clockwise, i.e. seat 6, so Bimal is at 6, which is indeed the middle of a side. Charu is third to Bimal's left; Bimal faces the centre so left is clockwise: $1, 2, 3$; Charu is at corner 3. Dev is second to Charu's right; Charu faces outward so right is clockwise: 4, then 5; Dev is at corner 5. Ekta is an immediate neighbour of Ajay, whose neighbours are seats 2 and 6; seat 6 is Bimal's, so Ekta is at 2, leaving seat 4 for Farida. Farida faces the centre, so her right

is anti-clockwise: 3 (Charu), then 2 (Ekta). The answer is Ekta, who does not appear among options (A) to (D), so the correct choice is "None of these".

69. Number the six seats 1 to 6 clockwise, where seats 1 and 4 are the two shorter sides and seats $2, 3$ and $5, 6$ are the two longer sides. All face the centre, so left is clockwise and right is anti-clockwise. Put Harish at seat 1. Ishan is third to his right: anti-clockwise $6, 5, 4$, so Ishan is at seat 4 — the other shorter side. Jaya is immediate left of Ishan: clockwise from 4 gives seat 5. Kabir is second to Jaya's right: anti-clockwise from 5 gives 4 (Ishan), then 3; Kabir is at seat 3. Seats 2 and 6 remain for Lata and Manav. Kabir's neighbours are seats 2 and 4, and Lata is not his neighbour, so Lata cannot sit at 2; Lata is at 6 and Manav at 2. The shorter sides are seats 1 and 4, occupied by Harish and Ishan.

70. Number the eight seats 1 to 8 clockwise, with seats 1 and 5 on the two shorter sides and seats $2, 3, 4$ and $6, 7, 8$ on the two longer sides. All face the centre, so left is clockwise and right is anti-clockwise. Put Arun at seat 1. Bela is fourth to his left: $2, 3, 4, 5$, so Bela is at seat 5, the other shorter side. Chirag is second to Bela's right: anti-clockwise 4, then 3; Chirag is at 3. Disha is immediate left of Chirag: clockwise from 3 is 4. Eshan is third to Disha's left: clockwise from 4 gives 5 (Bela), 6, 7; Eshan is at 7. Gita is immediate right of Arun: anti-clockwise from 1 is 8. Seats 2 and 6 remain for Falak and Hemant; Eshan's neighbours are 6 and 8, and Falak is not his neighbour, so Falak takes seat 2 and Hemant seat 6. Counting from Chirag's right (anti-clockwise) from seat 3: 2 (Falak), 1 (Arun), 8 (Gita), then 7 (Eshan). So three persons sit between them.

71. Number the seats 1 to 8 clockwise, corners at $1, 3, 5, 7$ (facing outward: left is anti-clockwise, right is clockwise) and middles of the sides at $2, 4, 6, 8$ (facing the centre: left is clockwise, right is anti-clockwise). Put Ankit at seat 2. Bhoomi is third to his left: clockwise $3, 4, 5$, so Bhoomi is at corner 5. Chirag is second to Bhoomi's right; Bhoomi faces outward so right is clockwise: 6, then 7; Chirag is at corner 7. Deepak is immediate left of Chirag: anti-clockwise from 7 is seat 6, a middle seat facing the centre, which agrees with the clue. Esha is third to Deepak's right: anti-clockwise from 6 gives 5 (Bhoomi), 4, 3; Esha is at corner 3. Firoz avoids the neighbours of Ankit (seats $1, 3$) and of Esha (seats $2, 4$), so among the free seats $1, 4, 8$ he must take seat 8. Garima is immediate left of Firoz: clockwise from 8 is seat 1, a corner. Harsh takes seat 4. The corners are 1 Garima, 3 Esha, 5 Bhoomi, 7 Chirag, and the diagonal pairs are (Garima, Bhoomi) and (Esha, Chirag). Only option (C) names such a pair; Ankit and Deepak do sit opposite each other but at the middles of sides, not at corners.

72. Number the seats 1 to 6 clockwise, corners at $1, 3, 5$ (facing the centre: left is clockwise, right is anti-clockwise) and middles of the sides at $2, 4, 6$ (facing outward: left is anti-clockwise, right is clockwise). Put Neha at corner 1. The Manager is second to her right: anti-clockwise 6, then 5, so the Manager sits at corner 5. Pankaj is immediate left of the Manager: clockwise from 5 is seat 6, so Pankaj is at 6. Om is third to Pankaj's left; Pankaj faces outward so left is anti-clockwise: $5, 4, 3$; Om is at corner 3 and is the Cashier. Riya must occupy a middle seat, not seat 6 (Pankaj) and not a neighbour of Neha (seats 2 and 6), so Riya is at seat 4. Qamar, the Auditor, needs the remaining middle seat, so Qamar is at 2, and Suresh takes corner 5 and is therefore the Manager. The PO is second to Riya's right; Riya faces outward so right is clockwise: 5 (Suresh), then 6 (Pankaj); hence Pankaj is the PO. Clerk and Officer remain for Neha and Riya, and since Neha is not the Clerk, Neha is the Officer and Riya is the Clerk.

73. Number the eight seats 1 to 8 clockwise. All face the centre, so left is clockwise and right is anti-clockwise. Put Bharti at seat 3. Amar is second to her left: 4, then 5, so Amar is at seat 5. Chetan is immediate left of Amar, i.e. seat 6; since Chetan and Amar share a side, the pair $\{5, 6\}$ is one full side, which fixes the four sides as $\{5, 6\}$, $\{7, 8\}$, $\{1, 2\}$ and $\{3, 4\}$. Divya is third to Chetan's left: $7, 8, 1$, so Divya is at seat 1. Eklavya is second to Divya's right: anti-clockwise 8, then 7; Eklavya is at seat 7. Fiza shares Bharti's side $\{3, 4\}$, so Fiza is at seat 4. Hina is immediate left of Eklavya: clockwise from 7 is seat 8. The last free seat, 2, is Gopal's. Gopal at seat 2 shares the side $\{1, 2\}$ with Divya.

74. Number the seats 1 to 8 clockwise, corners at $1, 3, 5, 7$ (facing the centre: left is clockwise, right is anti-clockwise) and middles of the sides at $2, 4, 6, 8$ (facing outward: left is anti-clockwise, right is

clockwise). Put Kunal at corner 1. Jyoti is third to his right: anti-clockwise $8, 7, 6$, so Jyoti is at seat 6. Latika is second to Jyoti's left; Jyoti faces outward so left is anti-clockwise: 5, then 4; Latika is at seat 4. Mohit is second to Latika's left: anti-clockwise 3, then 2; Mohit is at seat 2. Nidhi is a neighbour of Kunal (seats 2 or 8) and faces outward, and seat 2 is taken, so Nidhi is at seat 8. Omkar is third to Nidhi's left: anti-clockwise 7, 6 (Jyoti), 5; Omkar is at corner 5. Seats 3 and 7 remain for Payal and Rajat; Mohit's neighbours are seats 1 and 3, and Payal is not his neighbour, so Payal takes seat 7 and Rajat seat 3. Rajat faces the centre, so his left is clockwise: 4 (Latika), 5 (Omkar), 6 (Jyoti), then 7 (Payal). Three persons sit between them.

75. Number the seats 1 to 6 clockwise, corners at $1, 3, 5$ and middles of the sides at $2, 4, 6$. All face the centre, so left is clockwise and right is anti-clockwise. Put Anju at corner 1. The Pune person is second to her right: 6, then 5; so seat 5 is the Pune person. Bikram is immediate left of that person: clockwise from 5 is seat 6. Charan is third to Bikram's left: clockwise $1, 2, 3$, so Charan is at corner 3 and is from Jaipur. Diya must be at a middle seat next to Charan, i.e. seat 2 or 4; she is not a neighbour of Anju (seats 2 and 6), so Diya is at seat 4. The Delhi person is second to Diya's left: clockwise 5, then 6; so Bikram is from Delhi. Eshwar occupies a middle seat, and only seat 2 is left among middles, so Eshwar is at 2 and Fatima at corner 5, from Pune. The Patna person sits at a corner; corners are Anju (1), Charan (3, Jaipur) and Fatima (5, Pune), so Anju is from Patna. Mumbai and Kochi remain for Eshwar and Diya; Eshwar is not from Mumbai, so Eshwar is from Kochi and Diya from Mumbai. Eshwar sits at seat 2; second to his right is anti-clockwise 1 (Anju), then 6 (Bikram).

76. Number the seats 1 to 8 clockwise, corners at $1, 3, 5, 7$ (facing outward: left is anti-clockwise, right is clockwise) and middles of the sides at $2, 4, 6, 8$ (facing the centre: left is clockwise, right is anti-clockwise). Put Sanjay at seat 2. Tulsi is fourth to his right: anti-clockwise $1, 8, 7, 6$, so Tulsi is at seat 6. Uday is second to Tulsi's left: clockwise 7, then 8; Uday is at seat 8. Veena is immediate right of Uday: anti-clockwise from 8 is corner 7. Wahid is third to Veena's left; Veena faces outward so left is anti-clockwise: 6 (Tulsi), 5, 4; Wahid is at seat 4. Yash is a neighbour of Sanjay, so seat 1 or 3. If Yash were at 1, second to his left (anti-clockwise) would be seat 7, already occupied by Veena; so Yash is at corner 3 and Zara at seat 1. Priya takes the last seat, corner 5. Checking the options: Priya at 5 lies exactly between Wahid (4) and Tulsi (6), so (A) is true. Zara sits at a corner and therefore faces outward, so (B) is false. Uday (8) and Yash (3) are far apart, so (C) is false. Between Sanjay (2) and Wahid (4) only one person sits on the shorter arc, so (D) is false. Third to Sanjay's left is clockwise $3, 4, 5$, i.e. Priya, not Veena, so (E) is false.

77. Number the eight seats 1 to 8 clockwise, with seats 1 and 5 on the two shorter sides and seats $2, 3, 4$ and $6, 7, 8$ forming the two longer sides. Everyone except Gaurav faces the centre (left clockwise, right anti-clockwise); Gaurav faces outward (left anti-clockwise). Put Gaurav at seat 1. Hina is third to his left: anti-clockwise $8, 7, 6$, so Hina is at seat 6. Imran is second to Hina's right: anti-clockwise 5, then 4; Imran is at seat 4. Deepa is immediate left of Imran: clockwise from 4 is seat 5. Jaya is third to Deepa's left: clockwise 6 (Hina), 7, 8; Jaya is at seat 8. Ehsan neighbours Gaurav, so seat 2 or 8; seat 8 is Jaya's, so Ehsan is at 2. Kiran is immediate left of Ehsan: clockwise from 2 is seat 3. Lokesh takes the last seat, 7. Jaya sits on the longer side $\{6, 7, 8\}$, whose middle seat is 7 — Lokesh.

78. Number the seats 1 to 8 clockwise, corners at $1, 3, 5, 7$ (facing the centre: left is clockwise, right is anti-clockwise) and middles of the sides at $2, 4, 6, 8$ (facing outward: left is anti-clockwise, right is clockwise). Put Aarti at corner 1. Counting to her left (clockwise), two persons at seats 2 and 3 lie between her and Bhavesh, so Bhavesh is at seat 4. The SBI person is immediate right of Bhavesh, i.e. clockwise from 4: seat 5. Chandni is third to the left of that person; the person at 5 faces the centre, so left is clockwise: $6, 7, 8$; Chandni is at seat 8. Dinesh (PNB) is a neighbour of Chandni, i.e. seat 7 or 1; seat 1 is Aarti's, so Dinesh is at corner 7. Ekta is second to Dinesh's right: anti-clockwise 6, then 5; Ekta is at seat 5 and is therefore from SBI. Girish neighbours Bhavesh, i.e. seat 3 or 5; seat 5 is Ekta's, so Girish is at corner 3. Seats 2 and 6 remain for Faizal and Hema; Aarti's neighbours are seats 2 and 8, and Faizal is not her neighbour, so Faizal is at seat 6 and Hema at seat 2. For the banks: the BOB person is second to Girish's right, i.e. anti-clockwise 2, then 1, so Aarti is from BOB. Bhavesh (4) is from ICICI, and the Axis person is second to his left; Bhavesh faces outward so left is anti-clockwise: 3, then 2; Hema is from Axis. HDFC and UCO remain for Chandni (8) and Faizal

(6); Chandni is not from UCO, so Faizal is from UCO and Chandni from HDFC. Faizal at seat 6 faces outward, so his left is anti-clockwise: 5 (Ekta), 4 (Bhavesh), 3 (Girish). Hence Girish.

79. Number the nine seats 1 to 9 clockwise, with corners at $1, 4, 7$ (facing the centre: left is clockwise) and side seats $2, 3$; $5, 6$; $8, 9$ (facing outward: left is anti-clockwise). Put Ashok at corner 1. Bindu is fourth to his left: clockwise $2, 3, 4, 5$, so Bindu is at seat 5. Chetna is third to Bindu's right; Bindu faces outward, so right is clockwise: $6, 7, 8$; Chetna is at seat 8. Devang is a corner neighbour of Chetna; Chetna's neighbours are 7 and 9, and 7 is a corner, so Devang is at corner 7. Esha is second to Devang's left: clockwise 8 (Chetna), then 9; Esha is at seat 9. Farooq is third to Esha's left; Esha faces outward, so left is anti-clockwise: $8, 7, 6$; Farooq is at seat 6. Gagan takes the remaining corner, seat 4. Seats 2 and 3 are left for Hitesh and Ira; Ashok's neighbours are seats 2 and 9, and Hitesh is not his neighbour, so Hitesh is at seat 3 and Ira at seat 2. Now test the pairs. Ashok (1, corner, left clockwise): immediate left is seat 2, Ira — correct. Gagan (4): immediate left is seat 5, Bindu — correct. Devang (7): immediate left is seat 8, Chetna — correct. Hitesh (3, faces outward, left anti-clockwise): immediate left is seat 2, Ira — correct. Farooq (6, faces outward): immediate left is anti-clockwise seat 5, which is Bindu, not Gagan. So the pair Farooq, Gagan breaks the pattern.

80. Number the ten seats 1 to 10 clockwise, with seats 1 and 6 on the two shorter sides and seats $2, 3, 4, 5$ and $7, 8, 9, 10$ on the two longer sides. All face the centre, so left is clockwise and right is anti-clockwise. Put Alok at seat 1. Bhumi is fifth to his left: $2, 3, 4, 5, 6$; Bhumi is at seat 6. Chirag is third to Bhumi's right: anti-clockwise $5, 4, 3$; Chirag is at seat 3. Deepti is immediate left of Chirag: seat 4. Eshan is fourth to Deepti's left: $5, 6$ (Bhumi), $7, 8$; Eshan is at seat 8. Farida is second to Eshan's left: 9, then 10; Farida is at seat 10. Gopal neighbours Alok, i.e. seat 2 or 10; seat 10 is Farida's, so Gopal is at seat 2. Hitesh is third to Gopal's right: anti-clockwise 1 (Alok), 10 (Farida), 9; Hitesh is at seat 9. Seats 5 and 7 remain for Indu and Jatin; Eshan's neighbours are 7 and 9, and Indu is not his neighbour, so Indu is at seat 5 and Jatin at seat 7. The original arrangement is therefore 1 Alok, 2 Gopal, 3 Chirag, 4 Deepti, 5 Indu, 6 Bhumi, 7 Jatin, 8 Eshan, 9 Hitesh, 10 Farida. Seating them alphabetically clockwise from seat 1 gives 1 Alok, 2 Bhumi, 3 Chirag, 4 Deepti, 5 Eshan, 6 Farida, 7 Gopal, 8 Hitesh, 9 Indu, 10 Jatin. Comparing seat by seat, only seats 3 (Chirag) and 4 (Deepti) are unchanged apart from Alok. Hence two persons.

81. Number the seats 1 to 8 clockwise, corners at $1, 3, 5, 7$ (facing outward: left is anti-clockwise, right is clockwise) and middles of the sides at $2, 4, 6, 8$ (facing the centre: left is clockwise, right is anti-clockwise). Put Manish at seat 2. The Rs. 12,000 depositor is third to his left: clockwise $3, 4, 5$, i.e. corner 5. Nalini is second to the right of that person; a corner faces outward so right is clockwise: 6, then 7; Nalini is at corner 7. Om is immediate left of Nalini: anti-clockwise from 7 is seat 6. Pallavi is third to Om's right; Om faces the centre so right is anti-clockwise: $5, 4, 3$; Pallavi is at corner 3. Qasim neighbours Manish, i.e. seat 1 or 3; seat 3 is Pallavi's, so Qasim is at corner 1. Rina is immediate left of Qasim: anti-clockwise from 1 is seat 8. Sohan deposited Rs. 12,000, so Sohan is at seat 5, and Tanya takes seat 4. For the amounts: Manish = Rs. 30,000, Sohan = Rs. 12,000, and the Rs. 40,000 depositor sits opposite Manish, i.e. at seat 6, so Om = Rs. 40,000. Qasim = Rs. 15,000. Nalini is twice Pallavi with a total of Rs. 15,000, so Pallavi = Rs. 5,000 and Nalini = Rs. 10,000. The amounts left, Rs. 8,000 and Rs. 20,000, go to Tanya and Rina, and since Rina deposited more, Rina = Rs. 20,000 and Tanya = Rs. 8,000. The corners are seat 1 Qasim (Rs. 15,000), seat 3 Pallavi (Rs. 5,000), seat 5 Sohan (Rs. 12,000) and seat 7 Nalini (Rs. 10,000). Their total is $15{,}000 + 5{,}000 + 12{,}000 + 10{,}000 =$ Rs. 42,000. (The four middle seats add up to Rs. 98,000, which is the distractor in option (C).)

82. Number the seats 1 to 6 clockwise, corners at $1, 3, 5$ (facing outward: left is anti-clockwise, right is clockwise) and middles of the sides at $2, 4, 6$ (facing the centre: left is clockwise, right is anti-clockwise). Put Rachit at corner 1. Sunanda is second to his left: anti-clockwise 6, then 5; Sunanda is at corner 5. Tejas is immediate right of Sunanda: clockwise from 5 is seat 6. Urmila is third to the right of Tejas; Tejas faces the centre so right is anti-clockwise: 5 (Sunanda), 4, 3; Urmila is at corner 3. Seats 2 and 4 remain for Vikrant and Yamini; Rachit's neighbours are seats 2 and 6, and Vikrant is not his neighbour, so Vikrant is at seat 4 and Yamini at seat 2. After the interchanges, Vikrant moves to seat 1 and Rachit to seat 4, while Sunanda moves to seat 2 and Yamini to seat 5; Urmila stays at 3 and Tejas stays at 6. Note that the facing depends on the seat, not the person, so Tejas at seat 6 still

faces the centre and his left is still clockwise: seat 1 (now Vikrant), then seat 2 (now Sunanda). Hence Sunanda sits second to the left of Tejas.

83. Number the seats 1 to 8 clockwise, corners at $1, 3, 5, 7$ and middles of the sides at $2, 4, 6, 8$. All face the centre, so left is clockwise and right is anti-clockwise. Put Bharat at corner 1. Chhaya is fourth to his right: anti-clockwise $8, 7, 6, 5$; Chhaya is at corner 5, exactly opposite Bharat. Dinkar is second to Chhaya's left: clockwise 6, then 7; Dinkar is at corner 7. Esha is third to Dinkar's right: anti-clockwise 6, 5 (Chhaya), 4; Esha is at seat 4. Firoza is immediate right of Esha: anti-clockwise from 4 is corner 3. Ganesh neighbours Bharat, i.e. seat 2 or 8. If Ganesh were at seat 2, then Hemant, second to his left (clockwise), would land on seat 4, which is occupied; so Ganesh is at seat 8 and Hemant, two seats clockwise from 8, is at seat 2. Ila takes the last free seat, 6. Ages: the person opposite Bharat is Chhaya, so Chhaya is 45; Dinkar is the youngest, i.e. 24; Hemant is 42; Firoza is 27; Bharat is 36. The remaining ages 30, 33 and 39 go to Esha, Ila and Ganesh with Ganesh $<$ Ila $<$ Esha, giving Ganesh 30, Ila 33 and Esha 39. The middle seats are 2 Hemant (42), 4 Esha (39), 6 Ila (33) and 8 Ganesh (30), whose total is $42 + 39 + 33 + 30 = 144$ years. (The four corner ages add to 132, the distractor in option (A).)

84. Number the seats 1 to 6 clockwise, corners at $1, 3, 5$ (facing the centre: left is clockwise, right is anti-clockwise) and middles of the sides at $2, 4, 6$ (facing outward: left is anti-clockwise, right is clockwise). Put Girish at seat 2. Counting to his left (anti-clockwise) the seats are 1, 6, 5; with exactly two persons in between, Harini sits at corner 5. Ismail is second to Harini's left: clockwise 6, then 1; Ismail is at corner 1. Jhanvi is immediate right of Ismail: anti-clockwise from 1 is seat 6. Kamal is second to Jhanvi's left; Jhanvi faces outward so left is anti-clockwise: 5 (Harini), then 4; Kamal is at seat 4. Leela takes corner 3. For the loans: the Rs. 7 lakh person is at a corner immediately to Girish's left, i.e. anti-clockwise from seat 2, which is corner 1; so Ismail took Rs. 7 lakh. Harini took Rs. 3 lakh. The amounts Rs. 2, 4, 5, 6 lakh remain for Girish, Jhanvi, Kamal and Leela. Kamal = Leela $+ 2$ allows (Leela 2, Kamal 4) or (Leela 4, Kamal 6). In the second case Girish and Jhanvi would take Rs. 2 lakh and Rs. 5 lakh, which cannot differ by 1; so the first case holds, leaving Rs. 5 lakh and Rs. 6 lakh for Girish and Jhanvi with Girish one less, i.e. Girish Rs. 5 lakh and Jhanvi Rs. 6 lakh. The Rs. 4 lakh borrower is Kamal at seat 4; he faces outward, so his left is anti-clockwise: 3 (Leela), 2 (Girish), 1 (Ismail). Third to his left is Ismail, who took Rs. 7 lakh — an amount not offered in options (A) to (D). Hence "None of these".

Subtopic 2.1.5

85. Amit is on floor 4, so Bhavna (immediately below Amit) is on floor 3. Chetan is on the topmost floor, i.e. floor 5. The only floors left are 1 and 2, for Divya and Esha. Since Divya lives immediately above Esha, Esha takes floor 1 and Divya takes floor 2. Final arrangement (top to bottom): 5 Chetan, 4 Amit, 3 Bhavna, 2 Divya, 1 Esha. Hence floor 2 is occupied by Divya.

86. Ravi is on floor 3. If exactly two persons live between Ravi and Sunita, the gap between their floor numbers is $2 + 1 = 3$. Since Sunita is above Ravi, her floor is $3 + 3 = 6$. Check: the persons on floors 4 and 5 lie between them — exactly two persons. Floor $3 - 3 = 0$ does not exist, so no other position is possible. Hence Sunita lives on floor 6.

87. P is on floor 2. Only one person between P and Q means the difference of floor numbers is $1 + 1 = 2$. So Q is on floor $2 + 2 = 4$ or floor $2 - 2 = 0$. Floor 0 does not exist, so Q is on floor 4. R lives immediately above Q, so R is on floor $4 + 1 = 5$. Hence R lives on floor 5.

88. Naveen occupies Flat Y (southern side) of floor 3. The flat immediately above him on the same side of the building is the southern flat of the next higher floor, i.e. Flat Y of floor 4. Flat X of floor 4 is the northern flat of that floor, which is not directly above Naveen; Flat Y of floor 2 is directly below him; Flat X of floor 3 is beside him. Hence Meera lives in Flat Y of floor 4.

89. Harsh is on floor 5 and Jyoti on floor 4. Jyoti is immediately above Kunal, so Kunal is on floor 3. The floors left are 1 and 2 for Gaurav and Ila. Ila must be on an even-numbered floor, and floor

4 is already taken, so Ila is on floor 2 and Gaurav on floor 1. Final arrangement: 5 Harsh, 4 Jyoti, 3 Kunal, 2 Ila, 1 Gaurav. Hence floor 3 is occupied by Kunal.

90. Given: floor 2 Anjali, floor 5 Deepak, floor 6 Farhan (immediately above Deepak), floor 1 Chandan (lowermost). The remaining floors are 3 and 4 for Esha and Bhaskar. Since Bhaskar lives above Esha, Esha takes floor 3 and Bhaskar floor 4. Final arrangement: 6 Farhan, 5 Deepak, 4 Bhaskar, 3 Esha, 2 Anjali, 1 Chandan. The person immediately below Bhaskar (floor 4) is the one on floor 3, namely Esha.

91. Priya is on floor 1. Rekha is immediately above her, i.e. floor 2. Om is immediately above Rekha, i.e. floor 3. Neha is immediately above Om, i.e. floor 4. The remaining floor 5 goes to Qadir. Neha therefore lives on floor 4, which is not offered as options A to D, so the correct choice is 'None of these'.

92. Let Sameer be on floor s. Two persons between Sameer and Vikas with Vikas above gives Vikas on floor $s+3$, and Neelam on floor $s+4$. Since Neelam's floor cannot exceed 6, $s \leq 2$. As Sameer is not on floor 1, $s = 2$. So Sameer = 2, Vikas = 5, Neelam = 6. One person between Neelam (6) and Rajat means Rajat is on floor $6-2=4$ (floor 8 does not exist). Kiran lives below Sameer, and the only free floor below 2 is floor 1, so Kiran = 1. Ojas takes the remaining floor 3. Final: 6 Neelam, 5 Vikas, 4 Rajat, 3 Ojas, 2 Sameer, 1 Kiran. Immediately below Rajat (floor 4) is floor 3, i.e. Ojas.

93. Aarti = Flat 1, floor 2. Bipin is in the same flat-column immediately above her, so Bipin = Flat 1, floor 3. Chitra is on floor 3 and Flat 1 is taken, so Chitra = Flat 2, floor 3. Dinesh = Flat 2, floor 4. Ekta is in the same flat-column immediately below Aarti, so Ekta = Flat 1, floor 1. Farid is on floor 4; Flat 2 there is Dinesh's, so Farid = Flat 1, floor 4. Gita is in Flat 2, not on floor 1 or 3, and floor 4 Flat 2 is Dinesh's, so Gita = Flat 2, floor 2. The only slot left is Flat 2 of floor 1, which must be Hemant's.

94. Bharat pays Rs. 9,000, and the floor-3 tenant pays Rs. 9,000, so Bharat is on floor 3; Anil, immediately above him, is on floor 4 and pays Rs. 13,000. Chirag is on floor 1. Esha pays the lowest rent, Rs. 5,000, and the topmost-floor tenant pays the lowest rent, so Esha is on floor 5. Deepa therefore takes the remaining floor 2. The rents left are Rs. 7,000 and Rs. 11,000 for Chirag and Deepa; since Chirag pays less than Deepa, Chirag pays Rs. 7,000 and Deepa Rs. 11,000. Total for floors 1 and 2 = 7000 + 11000 = Rs. 18,000.

95. SBI is on floor 4. Two persons between SBI and PNB means a floor difference of 3, so PNB is on floor 1 or floor 7; floor 7 does not exist, so PNB = 1. BOB is immediately above PNB, so BOB = 2. One person between Union and SBI means a floor difference of 2, so Union is on floor 2 or floor 6; floor 2 is BOB's, so Union = 6. Floors 3 and 5 remain for Canara and HDFC, and Canara is above HDFC, so HDFC = 3 and Canara = 5. Immediately below SBI (floor 4) is floor 3, i.e. the HDFC officer. HDFC is not listed in options A to D, so the answer is 'None of these'.

96. Vandana is on floor 5 and hence is 32 years old. Tara is on floor 2. Suresh is immediately above Ramesh, and the only consecutive pair left among floors 1, 3, 4 is $(3, 4)$, so Ramesh = 3 and Suresh = 4. Umesh must then take floor 1, which is odd — consistent. The ages left for Ramesh and Suresh are 28 and 36. Ramesh is older than Vandana (32), so Ramesh is 36 and Suresh is 28. Final: 5 Vandana (32), 4 Suresh (28), 3 Ramesh (36), 2 Tara (40), 1 Umesh (24). The person immediately below Vandana is Suresh, aged 28 years.

97. Alok = 6. Two persons between Alok and Bina means a floor difference of 3, so Bina is on floor 3 or floor 9; hence Bina = 3. Chetna is immediately above Bina, so Chetna = 4. Devraj lives below floor 3 but not on floor 1, so Devraj = 2. Girish is on the lowermost floor, so Girish = 1. The floors left are 5 and 7 for Farah and Harish. Harish is not on the topmost floor, so Harish = 5 and Farah = 7 (which also satisfies Farah being above Girish). Final: 7 Farah, 6 Alok, 5 Harish, 4 Chetna, 3 Bina, 2 Devraj, 1 Girish. Immediately above Chetna (floor 4) is floor 5, i.e. Harish.

98. Charu is on floor 3 or floor 5. If Charu = 3, then Dolly (three floors away) is on floor 6 (floor 0 is impossible), and Ajay, immediately above Dolly, would need floor 7 — impossible. So Charu = 5. Then Dolly is on floor 2 or floor 8; hence Dolly = 2 and Ajay = 3. Bimal = 1. Floors 4 and 6 remain

for Eshan and Faizal, and Eshan is above Faizal, so Faizal = 4 and Eshan = 6. Final: 6 Eshan, 5 Charu, 4 Faizal, 3 Ajay, 2 Dolly, 1 Bimal. Immediately below Charu (floor 5) is floor 4, i.e. Faizal.

99. Let Rohit be on floor r; then Sneha is on floor $r+4$, which must be even, so r is even, and $r+4 \leq 8$ gives $r \in \{2, 4\}$. If $r = 2$, Sneha = 6, and Tarun (three floors from Sneha) = 3, Umang = 4, Vidya = 1, and Wasim (two floors from Vidya) = 3 — already taken, so this case fails. Hence $r = 4$: Rohit = 4, Sneha = 8, Tarun = 5, Umang = 6, Vidya = 1, Wasim = 3. Floors 2 and 7 remain for Yash and Zoya; Yash is above Zoya, so Zoya = 2 and Yash = 7. Original arrangement: 1 Vidya, 2 Zoya, 3 Wasim, 4 Rohit, 5 Tarun, 6 Umang, 7 Yash, 8 Sneha. Alphabetical order is Rohit, Sneha, Tarun, Umang, Vidya, Wasim, Yash, Zoya, giving 1 Rohit, 2 Sneha, 3 Tarun, 4 Umang, 5 Vidya, 6 Wasim, 7 Yash, 8 Zoya. Comparing floor by floor, only Yash (floor 7) is unchanged. Hence exactly one person stays.

100. Ankur = B1. Two floors above in the same column gives Bhavesh = B3. Chhaya is in Flat A of floor 4. The slots still free are A1, A2, A3, B2 and B4. Dhruv and Esha must share a floor with Dhruv in Flat A; the only floor with both flats free is floor 2, so Dhruv = A2 and Esha = B2. Firoz is in Flat B, and the only Flat B left is B4, so Firoz = B4. Garima is immediately below Dhruv, so Garima = A1. Harsh takes the last slot, A3. Final grid — floor 4: Chhaya (A), Firoz (B); floor 3: Harsh (A), Bhavesh (B); floor 2: Dhruv (A), Esha (B); floor 1: Garima (A), Ankur (B). Options A, B, C and D are same-floor pairs (floors 4, 3, 2 and 1 respectively). Chhaya is on floor 4 while Harsh is on floor 3, so that pair does not belong.

101. Floor 1 is vacant and exactly one floor lies between the two vacant floors, so the other vacant floor is floor 3. Ishaan is on floor 2. Floors 4, 5, 6, 7, 8 are the remaining occupied floors. Exactly two persons live between Ishaan and Jaya — counting persons, not floors, the occupied floors above Ishaan in order are 4, 5, 6, 7, 8, so two persons between means Jaya is the third of these, i.e. floor 6 (persons on floors 4 and 5 lie between; floor 3 is vacant and holds nobody). Kamal is immediately above Jaya, so Kamal = 7. Lata is on the topmost floor, 8. Floors 4 and 5 remain for Mohan and Nisha, and Mohan lives below Nisha, so Mohan = 4 and Nisha = 5. Between Ishaan (floor 2) and Nisha (floor 5) lie floor 3 (vacant) and floor 4 (Mohan) — that is exactly one person.

102. Gopal is on floor 5 or 7. If Gopal = 7, Hitesh (three floors away) = 4, but the floor-4 person earns Rs. 35,000 while Hitesh earns Rs. 20,000 — contradiction. So Gopal = 5 and Hitesh = 2; Ishita = 3. Jatin = 1 and Komal = 6. Floors 4 and 7 are left for Lalit and Meena. Salaries so far: Gopal Rs. 50,000; Hitesh Rs. 20,000; Ishita Rs. 30,000; floor 4 Rs. 35,000. The salaries left for Jatin, Komal and the floor-7 person are Rs. 25,000; Rs. 40,000 and Rs. 45,000. Floors 1 and 7 must total Rs. 70,000, and the only such pair from this set is Rs. 25,000 + Rs. 45,000, so Komal (floor 6) earns Rs. 40,000. Jatin earns more than Komal, so Jatin earns Rs. 45,000 and the floor-7 person earns Rs. 25,000. Since Lalit earns less than Meena, Lalit takes floor 7 (Rs. 25,000) and Meena floor 4 (Rs. 35,000). Difference between topmost (Rs. 25,000) and lowermost (Rs. 45,000) = Rs. 20,000.

103. Ahmed = 3. Three persons between Ahmed and Beena means a floor gap of 4, so Beena = 7 (floor -1 is impossible). Chirag is immediately below Beena, so Chirag = 6. Damini is on an even floor below 3, so Damini = 2. One person between Damini and Eknath gives Eknath = 4 (floor 0 is impossible). Fatima is on the topmost floor, 8, which also satisfies her being above Ganesh. Floors 1 and 5 remain for Ganesh and Hina; Hina is not on the lowermost floor, so Hina = 5 and Ganesh = 1. Final: 8 Fatima, 7 Beena, 6 Chirag, 5 Hina, 4 Eknath, 3 Ahmed, 2 Damini, 1 Ganesh. In options A, B, C and D the second person lives immediately above the first (Damini 2 / Ahmed 3; Ahmed 3 / Eknath 4; Hina 5 / Chirag 6; Chirag 6 / Beena 7). Ganesh is on floor 1 and Ahmed on floor 3, which is not immediately above, so that pair is the odd one out.

104. Two persons between Rakesh and Sunil with Sunil above gives Sunil = Rakesh +3, so (Rakesh, Sunil) is $(1, 4)$, $(2, 5)$ or $(3, 6)$. Tina is on floor 4, ruling out $(1, 4)$. If Rakesh = 2, then the floor-1 person bought the Rs. 40,000 laptop, contradicting that floor 1 has the costliest (Rs. 55,000). Hence Rakesh = 3 and Sunil = 6. Then floor 3 costs Rs. 45,000 (consistent) and floor 2 costs Rs. 40,000; floor 1 costs Rs. 55,000; Sunil on floor 6 costs Rs. 35,000. The prices left, Rs. 30,000 and Rs. 50,000,

go to floors 4 and 5; Tina (floor 4) did not buy the cheapest, so Tina's is Rs. 50,000 and floor 5 is Rs. 30,000. Uma is immediately below Vikas; the free floors are 1, 2 and 5, so the only consecutive pair is $(1, 2)$, giving Uma = 1, Vikas = 2 and Wasim = 5. Total for floors 2 and $5 = 40000 + 30000 =$ Rs. 70,000.

105. Bharti = 4; three persons between Bharti and Chetan means a gap of 4, so Chetan = 8 (floor 0 is impossible). Dinesh is immediately below Chetan, so Dinesh = 7. One person between Dinesh and Ehsaan gives Ehsaan = 5 or 9. Falguni = 1; one person between Falguni and Gaurav gives Gaurav = 3; Harleen, immediately below Gaurav, is on floor 2. Jaideep is on floor 9, so Ehsaan = 5. Imran, who must be above Ehsaan, takes the only floor left, 6. Final: 1 Falguni, 2 Harleen, 3 Gaurav, 4 Bharti, 5 Ehsaan, 6 Imran, 7 Dinesh, 8 Chetan, 9 Jaideep. Under the reversal, the person on floor n moves to floor $10 - n$; so the new floor 6 is occupied by the person originally on floor $10 - 6 = 4$, namely Bharti.

Subtopic 2.1.6

106. Positions are numbered 1 (bottom) to 5 (top). C is at the top, so C is at position 5. Two boxes lie between C and A, so A is at position $5 - 3 = 2$. The free positions are 1, 3 and 4 for B, D and E. B must be immediately above D; the only consecutive free pair is $(3, 4)$, so D is at 3 and B is at 4. The single remaining position 1 goes to E. Hence the bottom box is E.

107. Only two boxes are above P, so P occupies position $6 - 2 = 4$. R is immediately below P, so R is at 3. S is at the bottom, position 1. Q is immediately above P, so Q is at 5. Positions 2 and 6 remain for T and V. Since V is not at the top, V takes position 2 and T takes position 6. Therefore box T is at the top.

108. M is at the top, position 5. Only one box lies between M (5) and K, so K is at position 3. K is immediately above N, so N is at position 2. Positions 1 and 4 remain for J and L. Since J is not at the bottom, J takes position 4 and L takes position 1. The stack from bottom to top is L, N, K, J, M, so the bottom box is L.

109. D is at position 3. With three boxes between D and F and F above D, F is at $3 + 4 = 7$. G is at 1. A is immediately above D, so A is at 4. E is immediately below F, so E is at 6. Positions 2 and 5 remain for B and C, and since B is above C, C is at 2 and B is at 5. Between B (5) and F (7) only position 6 lies, i.e. exactly one box (E).

110. S is at position 2. P is immediately above S, so P is at 3; T is immediately above P, so T is at 4. W is at the top, position 6, and U is at the bottom, position 1. Only position 5 is left, so V is at 5. The box immediately below W (6) is the one at position 5, which is V.

111. The red box is at position 1 and the green box, being immediately above it, is at 2. Two boxes lie between green (2) and white, so white is at $2 + 3 = 5$. The blue box is immediately below white, so blue is at 4. The only position left, 3, is taken by the black box. Position 3 is the middle of a stack of five, so the black box is exactly in the middle.

112. With four boxes between A and B and A below B, the possibilities are (A = 1, B = 6) or (A = 2, B = 7). C is at the top, i.e. at 7, so the second case is rejected and A = 1, B = 6. D is immediately above A, so D = 2; E is immediately below B, so E = 5; F is immediately above D, so F = 3. The only place left, 4, is G. Below position 4 there are positions 1, 2 and 3, i.e. three boxes.

113. Three boxes between P and Q with Q above P gives $Q = P + 4$, so the options are (P1,Q5), (P2,Q6) and (P3,Q7). S is immediately above Q, so Q cannot be at 7; this rules out (P3,Q7). R is at the bottom, position 1, which rules out (P1,Q5). Hence P = 2, Q = 6 and S = 7. Two boxes between S (7) and T gives T = 4. Positions 3 and 5 remain for U and V; since U is above V, V = 3 and U = 5. The box immediately below U (5) is at position 4, which is T.

114. D is at the top, position 7. Three boxes between D (7) and B give B = 3. Two boxes between G and C with C above G means C = G +3, and A is immediately below G, so $G \geq 2$. If G = 3 it clashes with B, and if G = 4 then C = 7 clashes with D; hence G = 2, C = 5 and A = 1. E is immediately

above C, so E = 6. The single remaining position 4 goes to F. The stack from bottom to top is A, G, B, F, C, E, D. The box immediately above F (4) is at position 5, which is C.

115. Only two boxes lie above C, so C is at position $8 - 2 = 6$. C is immediately above B, so B = 5. Three boxes between A and B with A below B gives A = 1. D is immediately above C, so D = 7, and F is at the top, 8. H is immediately above A, so H = 2. Positions 3 and 4 remain for G and E with E immediately above G, so G = 3 and E = 4. Between H (2) and D (7) lie positions 3, 4, 5 and 6 – four boxes.

116. The Rs. 20,000 box is at position 5 and the Rs. 2,000 box at position 1. Two boxes lie between the Rs. 10,000 box and position 1, so the Rs. 10,000 box is at position 4. Positions 2 and 3 are left for Rs. 5,000 and Rs. 1,000, and Rs. 5,000 must be immediately below Rs. 1,000, so Rs. 5,000 is at 2 and Rs. 1,000 at 3. Immediately above the Rs. 5,000 box (position 2) is position 3, containing Rs. 1,000, and immediately below it is position 1, containing Rs. 2,000. The total is $1000 + 2000$ = Rs. 3,000.

117. C is at position 1. Three boxes between C and D gives D = 5. F is immediately above D, so F = 6, and A is at the top, 7. Positions 2, 3 and 4 remain for B, E and G. G is immediately above C, so G = 2; then B is immediately above E, forcing E = 3 and B = 4. The original stack from bottom to top is C, G, E, B, D, F, A. In alphabetical order from bottom to top it becomes A, B, C, D, E, F, G. Comparing position by position: 1 C/A, 2 G/B, 3 E/C, 4 B/D, 5 D/E, 6 F/F, 7 A/G. Only position 6 (box F) is unchanged, so exactly one box remains in its place.

118. D is at position 4. One box lies between D and H with H above D, so H = 6. E is immediately above H, so E = 7. Three boxes between E (7) and A gives A = 3. B is at the bottom (1) and F at the top (8). Positions 2 and 5 are left for G and C; since C is above G, G = 2 and C = 5. The stack from bottom to top is B, G, A, D, C, H, E, F. Checking the options: D is at 4, not the top – false. Between A (3) and C (5) lies only position 4, i.e. exactly one box – true. H is at 6 and E at 7, so H is below E, not above – false. B is at 1 and G at 2, so B is below G – false. Hence only the second statement is true.

119. Let F be at position x. Then A = $x - 1$, C = $x + 3$ and G = $x + 4$. Since G must be at most 7, $x \leq 3$; since B occupies the bottom position 1, A = $x - 1 \geq 2$ gives $x \geq 3$. Hence $x = 3$: F = 3, A = 2, C = 6, G = 7, B = 1. Positions 4 and 5 are left for E and D with D immediately above E, so E = 4 and D = 5. Between A (2) and D (5) lie positions 3 and 4 – two boxes.

120. S is at position 1. Two boxes between S and the Rs. 2,000 box put that box at position 4; since R contains Rs. 2,000, R = 4. T is immediately above it, so T = 5. Two boxes between T (5) and W give W = 2 or W = 8; only W = 2 is possible. The Rs. 3,500 box is immediately above W, i.e. at position 3, and that box is Q, so Q = 3. The Rs. 500 box is immediately above T, i.e. at position 6. P is at the top, 7, so U takes position 6 and holds Rs. 500. The amounts still to be placed at positions 1 (S), 2 (W), 5 (T) and 7 (P) are Rs. 1,000, Rs. 1,500, Rs. 2,500 and Rs. 3,000. T holds Rs. 3,000, leaving Rs. 1,000, Rs. 1,500 and Rs. 2,500 for S, W and P. The condition W = S + Rs. 1,000 is satisfied only by S = Rs. 1,500 and W = Rs. 2,500, so P = Rs. 1,000. The bottom box S holds Rs. 1,500 and the top box P holds Rs. 1,000, a total of Rs. 2,500.

121. N is at position 7 (Wednesday). Three boxes between N and the Monday box place the Monday box at position 3, and M, being immediately above it, is at 4. Two boxes between M (4) and L give L = 1 or L = 7; position 7 is N, so L = 1 and Friday is at position 1. O is immediately above the Friday box, so O = 2. The Sunday box is immediately below N, i.e. at position 6, and P is dispatched on Sunday, so P = 6; Q is immediately below P, so Q = 5. The only box left, R, takes position 3 and is therefore dispatched on Monday. M is dispatched on Thursday. The Saturday box is immediately above M (4), i.e. at position 5, which is Q. The one remaining day, Tuesday, goes to O at position 2. Between the Tuesday box (position 2) and the Sunday box (position 6) lie positions 3, 4 and 5 – three boxes.

122. Positions first: A = 1. Two boxes between A and B give B = 4; C is immediately above B, so C = 5. D is at the top, 6. E is immediately above A, so E = 2, leaving F = 3. The stack from

bottom to top is A, E, F, B, C, D. Now weights: $D < B < E$ and $C > E$ give $D < B < E < C$; A is heavier than C, so $D < B < E < C < A$; F is the lightest, so the full order from lightest to heaviest is $F < D < B < E < C < A$. The heaviest box is A, which stands at position 1. The box immediately above position 1 is at position 2, which is E.

123. Let A be at position p. Then B $= p + 5$ and C $= p + 8$, so $p + 8 \leq 9$ forces $p = 1$: A = 1, B = 6, C = 9. D is immediately below C, so D = 8. Three boxes between D (8) and E give E = 4 (since 12 is impossible). F is immediately above E, so F = 5. G is immediately above A, so G = 2. Positions 3 and 7 remain for I and H; H is above F (5), so H = 7 and I = 3. The original stack from bottom to top is A, G, I, E, F, B, H, D, C. Removing E from position 4 leaves A, G, I at 1, 2, 3 unchanged, while F, B, H, D, C slide down to 4, 5, 6, 7, 8, and E goes to position 9. The new stack is A, G, I, F, B, H, D, C, E. Between E (9) and B (5) lie positions 6, 7 and 8 – three boxes.

124. T is at the bottom, position 1, and W is immediately above T, so W = 2. Two cartons between T (1) and U give U = 4. Three cartons between P and Q with Q above P mean Q = P +4, and R = Q +1. P cannot be 1, 2 or 4 (taken), so P = 3 (giving Q = 7, R = 8) or P = 5 (giving Q = 9, impossible) – hence P = 3, Q = 7, R = 8. One carton between R (8) and S gives S = 6. The only position left, 5, is V. The original stack from bottom to top is T, W, P, U, V, S, Q, R. Removing V from position 5 leaves T, W, P, U at positions 1–4 unchanged, while S, Q, R slide down to 5, 6, 7, and V goes to position 8. The new stack is T, W, P, U, S, Q, R, V. S now stands at position 5, so the carton immediately below it is at position 4, which is U.

125. C is third from the top, i.e. at position 6. Two boxes between C and the Patna box put Patna at position 3; A, immediately above it, is at 4. Delhi is at position 1, and three boxes between position 1 and E give E = 5. G is at the top, 8, and the Kochi box is at 7; since H is sent to Kochi, H = 7. Positions 1, 2 and 3 remain for B, D and F with B immediately above D, so either (D 1, B 2, F 3) or (D 2, B 3, F 1). F is not at the bottom, so the second case fails; hence D = 1, B = 2, F = 3. The stack from bottom to top is D, B, F, A, E, C, H, G, with D sent to Delhi, F to Patna, H to Kochi and G to Jaipur. The Surat box is immediately above A (4), i.e. position 5, so E is sent to Surat. The Indore box is immediately below the Kochi box (7), i.e. position 6, so C is sent to Indore. Mumbai and Nagpur remain for B and A; B is not sent to Mumbai, so B goes to Nagpur and A to Mumbai. Checking the options, only "Box C – Indore" matches.

126. Only two boxes lie above D, so D $= 8 - 2 = 6$. H is immediately below D, so H = 5. Three boxes between H and A give A = 1 or A = 9; hence A = 1. B is at the top, 8, and E is immediately below B, so E = 7. Positions 2, 3, 4 remain for C, F and G with C immediately above F, so either (F 2, C 3, G 4) or (F 3, C 4, G 2). G must not be immediately above A (1), so G cannot be at 2; the second case is rejected. Thus F = 2, C = 3, G = 4. The stack from bottom to top is A, F, C, G, H, D, E, B. Interchanging A and F puts F at 1 and A at 2; interchanging C and H puts H at 3 and C at 5. The new stack is F, A, H, G, C, D, E, B. The box immediately below D (position 6) is now at position 5, which is C.

Subtopic 2.1.7

127. The date of deposit is the 12th and crediting happens on the 9th day after it, so the date is $12 + 9 = 21$st. For the day, split the gap as $9 = 7 + 2$. Advancing 7 days from Monday gives Monday again (the 19th), and advancing 2 more days gives Wednesday (the 21st). Hence the credit falls on Wednesday, the 21st. As a check, the 20th is a Tuesday and the 21st cannot be a Thursday, which rules out the remaining options.

128. The 1st is a Friday, so the 2nd is a Saturday and the 3rd is a Sunday. Sundays then recur every 7 days, giving the dates $3, 10, 17, 24$ and 31. All five lie within the 31-day month, so there are 5 Sundays. This matches the general rule that a 31-day month contains 4 complete weeks plus 3 extra days, so the first three weekdays of the month – here Friday, Saturday and Sunday – each occur five times. Hence the branch is closed on five Sundays.

129. Place the fixed people first: Chetan is on Wednesday and Divya on Friday. That leaves Monday,

Tuesday and Thursday for Anil, Bhavna and Esha. Anil must be immediately before Bhavna, so the two of them need consecutive days drawn from Monday, Tuesday and Thursday. The only consecutive pair available is Monday–Tuesday, because Tuesday–Wednesday and Wednesday–Thursday are blocked by Chetan. So Anil visits on Monday and Bhavna on Tuesday, and the only person left for Thursday is Esha. The arrangement Anil, Bhavna, Chetan, Esha, Divya is forced, so the answer is not indeterminate.

130. The year 2023 is not a leap year, so 28 February is the last day of that month. Counting 30 days forward, the first 2 days take us to 2 March and the remaining 28 days take us to 30 March 2023. For the weekday, write $30 = 28 + 2$. Since 28 days is exactly 4 complete weeks, the day is unchanged at Tuesday after 28 days, and advancing 2 more days gives Thursday. So the next debit is on Thursday, 30 March 2023.

131. Work backwards from the remark. If the day before yesterday was Thursday, then yesterday was Friday, and so today is Saturday. Now move forward: tomorrow is Sunday and the day after tomorrow is Monday. So the staff meeting falls on a Monday. Checking the given options, Saturday is today, Sunday is tomorrow, and Tuesday and Wednesday both come after the meeting day, so none of the first four options is Monday. The correct choice is therefore "None of these".

132. Since 1 September was a Sunday, count forward: the 2nd was Monday, the 3rd Tuesday and the 4th Wednesday. So the first Wednesday of the month was the 4th, and Wednesdays fell on $4, 11, 18$ and 25 September. The second Wednesday is therefore the 11th. The other options fail on inspection: the 8th is a Sunday, the 12th a Thursday, the 14th a Saturday, and the 18th is only the third Wednesday.

133. Find the gap between the two dates: $25 - 4 = 21$ days. Since $21 = 3 \times 7$, the dates are separated by exactly three complete weeks, and two dates separated by a whole number of weeks always fall on the same weekday. Therefore the 4th is also a Saturday. As a check, working backwards in steps of 7 from the 25th gives Saturdays on the 18th, the 11th and the 4th of that month.

134. Use the odd-days method, counting complete years up to 2024 and then the days elapsed in 2025. The first 2000 years contribute 0 odd days, since every block of 400 years gives 0. For the 24 years from 2001 to 2024, the leap years are $2004, 2008, \ldots, 2024$, which is 6 leap years, leaving 18 ordinary years, so the odd days are $18 \times 1 + 6 \times 2 = 30$, and $30 \bmod 7 = 2$. Next, 2025 is an ordinary year, and the days up to 15 August are $31 + 28 + 31 + 30 + 31 + 30 + 31 + 15 = 227$; since $227 = 224 + 3$, this gives 3 odd days. The total is $2 + 3 = 5$ odd days. Counting 0 as Sunday, the value 5 corresponds to Friday, so 15 August 2025 is a Friday.

135. Number the days Monday = 1 up to Saturday = 6, so Ankit is on day 4. Exactly two officers between Ankit and Chitra means the two days differ by 3, so Chitra is on day 1 or day 7; day 7 does not exist, so Chitra is on Monday. Bhavesh, being immediately after Chitra, is on Tuesday. Deepak is on the last day, Saturday. The only days left are Wednesday and Friday for Farhan and Esha, and since Farhan is earlier, Farhan is on Wednesday and Esha on Friday. The full order from Monday to Saturday is Chitra, Bhavesh, Farhan, Ankit, Esha, Deepak. Strictly between Tuesday and Friday lie Wednesday and Thursday, that is Farhan and Ankit, so the count is two.

136. Arrange the months chronologically as January, March, June, September, December. Among these, the ones with 30 days are June and September, so Ramesh was born in June or in September. Suppose Ramesh was born in September; then Sunita, being immediately after him in this list, would be born in December. But Anil is stated to be born in the last of these months, which is December, so two people would claim December – a contradiction. Hence Ramesh was born in June and Sunita in September. Kavita takes January and Anil takes December, so the only month left for Meena is March. The unique arrangement in chronological order is Kavita, Meena, Ramesh, Sunita, Anil.

137. The four slots in chronological order are 14 March, 27 March, 14 June and 27 June. March has 31 days while June has 30, so Rakesh's review is in March, either on the 14th or on the 27th. Nitin's review comes before Rakesh's, so Rakesh cannot occupy the earliest slot of all; hence Rakesh is on 27 March and Nitin on 14 March. Pooja is on a 27th, and 27 March is already taken, so Pooja is on 27

June. The one remaining slot, 14 June, must go to Swati, which is consistent with Swati not being on a 27th. So Swati's review is on 14 June.

138. For a calendar to repeat exactly, the later year must begin on the same weekday and must be of the same type, leap or ordinary. Since 2020 is a leap year, the reuse year must also be a leap year. Accumulate odd days from 2020 onwards, a leap year contributing 2 and an ordinary year 1: after 2020, 2; after 2021, 3; after 2022, 4; after 2023, 5; after 2024, $7 \equiv 0$. So 2025 starts on the same weekday as 2020, but 2025 is an ordinary year and the calendar does not match. Continuing in this way, the calendar of a leap year repeats after 28 years provided no non-leap century year intervenes. Here $2020 + 28 = 2048$, and no such century year lies in between, so the calendar can be reused in 2048. The years 2024 and 2028 are too early, and 2046 is not even a leap year.

139. April has 30 days. Since 1 April was a Tuesday, count forward: the 2nd was Wednesday, the 3rd Thursday, the 4th Friday, the 5th Saturday and the 6th Sunday. So the Sundays were $6, 13, 20$ and 27, giving 4 closed Sundays, and the Saturdays were $5, 12, 19$ and 26, so the second Saturday was the 12th and the fourth Saturday the 26th, giving 2 more closed days. No Saturday coincides with a Sunday, so the closed days total $4 + 2 = 6$. The number of open days is $30 - 6 = 24$.

140. Convert each statement into a set of possible dates. Vikas allows $15, 16, 17$; Neha allows $16, 17, 18$; Sameer allows $17, 18, 19$. Because all three statements are true at the same time, the actual date must lie in the intersection of the three sets. Vikas and Neha together leave 16 and 17, and intersecting this with Sameer's set leaves only 17. Checking the wrong options confirms it: the 16th violates Sameer's condition, the 18th violates Vikas's condition, and the 19th violates both Vikas's and Neha's. Since exactly one date survives, the answer is fully determined and the function is held on 17 July.

141. Number the days Monday $= 1$ up to Sunday $= 7$. Divya is on day 1. Exactly two disbursements between Divya and Farid means their days differ by 3, so Farid is on day $1+3 = 4$, since day $1-3$ does not exist; day 4 is Thursday. Next, exactly three between Aarti and Bipin means Bipin's day equals Aarti's day plus 4, giving the candidate pairs $(1, 5)$, $(2, 6)$ and $(3, 7)$. The pair $(1, 5)$ is impossible because day 1 belongs to Divya, and $(3, 7)$ is impossible because Chirag would then need day 8. So Aarti is on day 2 and Bipin on day 6, with Chirag immediately after on day 7. Days 3 and 5 remain for Gaurav and Harsh, and as Gaurav is earlier he takes day 3 and Harsh day 5. The unique schedule from Monday to Sunday is Divya, Aarti, Gaurav, Farid, Harsh, Bipin, Chirag, so Farid's day is Thursday.

142. Number the eight seminars chronologically: 1 is Jan 11, 2 is Jan 24, 3 is Mar 11, 4 is Mar 24, 5 is Aug 11, 6 is Aug 24, 7 is Nov 11 and 8 is Nov 24. Hema takes slot 1. Of the four months only November has 30 days, so Eshwar takes slot 7. Geeta is on the 24th of the last month, so she takes slot 8. Chetan and Dimple share a month, so they occupy one of the pairs $(1, 2)$, $(3, 4)$, $(5, 6)$ or $(7, 8)$; slots $1, 7$ and 8 are taken, so their pair is $(3, 4)$ or $(5, 6)$. Bhakti and Anand must satisfy Anand = Bhakti $+4$. If Chetan and Dimple took $(5, 6)$, the free slots would be $2, 3$ and 4, among which no two differ by 4, so that case is impossible. Hence Chetan is at slot 3 and Dimple at slot 4, leaving slots $2, 5$ and 6. The only pair among these differing by 4 is $(2, 6)$, so Bhakti is at slot 2 and Anand at slot 6, and the last free slot 5 goes to Firoz, consistent with Firoz attending before Geeta. Slot 5 is 11 August, so Firoz attends that seminar.

143. The year 2024 is divisible by 4 and is not a century year, so it is a leap year and February has 29 days. Accumulate the month lengths until the running total first reaches 200: January gives 31; through February, $31 + 29 = 60$; through March, 91; through April, 121; through May, 152; through June, 182. So the 182nd day is 30 June, and $200 - 182 = 18$ more days are needed, which lands on 18 July 2024. For the weekday, note that 1 January is day 1 and is a Monday, so the 200th day is $200 - 1 = 199$ days later. Since $199 = 196 + 3$ and $196 = 28 \times 7$, the day advances by 3 beyond whole weeks, and 3 days after Monday is Thursday. Hence the bonus is credited on Thursday, 18 July 2024. The options naming the 19th or the 17th fail the date count, and Wednesday would require an advance of only 2 days.

144. The first review is on the launch date itself, so the fifth review comes after four gaps of 45 days, that is $4 \times 45 = 180$ days after 1 January 2024. Count forward from 1 January, remembering that 2024

is a leap year so February has 29 days. The days left in January after the 1st give 30; adding February gives $30 + 29 = 59$; adding March gives 90; adding April gives 120; adding May gives 151. We still need $180 - 151 = 29$ days, which takes us to 29 June 2024. For the weekday, note $180 = 175 + 5$ and $175 = 25 \times 7$, so the day advances by 5 beyond whole weeks. Advancing 5 days from Monday gives Saturday. The fifth review is therefore on Saturday, 29 June 2024.

145. Since the 1st is a Saturday, the Saturdays of the month are $1, 8, 15, 22$ and 29, and the Sundays are $2, 9, 16, 23$ and 30. Counting the Saturdays in order, the first is the 1st, the second the 8th, the third the 15th and the fourth the 22nd. So the 22nd is a fourth Saturday and the branch is closed, which means the meeting must be shifted. The next day, the 23rd, is a Sunday, so the branch is closed then too and the meeting cannot be held on the 23rd. The following day, the 24th, is a Monday and an ordinary working day, so the meeting is finally held on the 24th.

146. Ajay is fixed at 2017. Among the five years the leap years are 2012 and 2020, so Chandan opened in one of these. Suppose Chandan opened in 2012; then Chandan would be the person who chose April, and Bina would have to be in a year earlier than 2012 – but 2012 is the earliest year in the list, a contradiction. So Chandan opened in 2020, and the July person opened in 2023, the year immediately after 2020 in this list. Bina chose December and is earlier than 2020, so she is in 2012 or 2015; she cannot be in 2012 because that person chose April, so Bina is in 2015. The years 2012 and 2023 remain for Deepa and Elango, and as Deepa is earlier, Deepa is in 2012 and Elango in 2023. The months complete the grid consistently: Deepa takes April, Elango takes July, Bina takes December, Ajay's month has 30 days so from the remaining February and September he takes September, and Chandan takes February. Hence Deepa opened her deposit in 2012.

147. First count the total days in the window: March contributes $31 - 10 + 1 = 22$ days, April 30, May 31, and June 25, giving $22 + 30 + 31 + 25 = 108$ days. Since the first day, 10 March, is a Sunday, the Sundays of the window are $10, 17, 24, 31$ March; $7, 14, 21, 28$ April; $5, 12, 19, 26$ May; and $2, 9, 16, 23$ June – that is 4 in each month, so 16 Sundays in all (30 June lies outside the window). Next locate the Saturdays, which fall the day before each Sunday. In March they are $2, 9, 16, 23, 30$, so the second Saturday is the 9th and the fourth is the 23rd; the 9th is before the window begins, so only 23 March counts. In April the Saturdays are $6, 13, 20, 27$, giving 13 and 27 April; in May they are $4, 11, 18, 25$, giving 11 and 25 May; in June they are $1, 8, 15, 22$, giving 8 and 22 June, both within the window. That is $1 + 2 + 2 + 2 = 7$ closed Saturdays. No Saturday can coincide with a Sunday, so the closed days number $16 + 7 = 23$, and the branch was open on $108 - 23 = 85$ days.

Subtopic 2.1.8

148. Translate each statement into an inequality. "Anil is taller than Bimal but shorter than Chetan" gives Chetan > Anil > Bimal. "Deepak is taller than Chetan but shorter than Eshwar" gives Eshwar > Deepak > Chetan. The two chains share Chetan, so they join into a single chain: Eshwar > Deepak > Chetan > Anil > Bimal. All five persons appear in one unbroken order, so the ranking is fully determined and the tallest is Eshwar. Deepak is only the second tallest and Chetan the third, so no other option can be correct. Hence option D.

149. From "P earns more than Q but less than R" we get $R > P > Q$. From "S earns more than T but less than Q" we get $Q > S > T$. Both chains contain Q, so they link up as $R > P > Q > S > T$. Every officer is placed, so the order is complete: R is highest, then P, Q, S and finally T. The least earner is therefore T. Note that S is second-lowest, not lowest, which is the trap in this question. Hence option E.

150. Write the comparisons as chains. "A heavier than C but lighter than D" gives $D > A > C$. "B is heavier than D" extends this to $B > D > A > C$. "E lighter than C but heavier than F" gives $C > E > F$, which attaches at C. Combining, the full order from heaviest to lightest is $B > D > A > C > E > F$. Counting down: B is first, D is second and A is third. So the third heaviest parcel is A. C is fourth, D is second and E is fifth, so none of the other options fits. Hence option A.

151. "Only one person is older than Kavita" places Kavita second in the age order (oldest to youngest).

The only friend not yet tied to Kavita by a clue is Neha, so Neha must be the oldest. "Sunita is older than Meena but younger than Kavita" gives Kavita > Sunita > Meena, so Sunita is third and Meena is fourth. Deepa is stated to be the youngest, i.e. fifth. The complete order from oldest to youngest is Neha, Kavita, Sunita, Meena, Deepa. The youngest is Deepa, so the second youngest is Meena. Hence option B.

152. Build the stack from the clues. "P is above Q but below R" gives, from top downwards, R, then P, then Q. "S is above R" puts S on top of R. "T is below Q" puts T at the very bottom. Since all five cartons are now placed, the stack from top to bottom is S, R, P, Q, T. Between R (second from top) and T (bottom) lie exactly two cartons, namely P and Q. Hence option B. Counting S or R themselves as "between" is the common error that gives three or four.

153. The clues give $P > Q$, $Q > S$, $Q > T$ and $R > P$. Chaining the first and the last, $R > P > Q$, and both S and T sit below Q. So R is above P, which is above Q, which is above both S and T — R therefore stands above every other customer. The relative order of S and T is unknown, but that affects only the bottom two positions, not the top. Since the maximum is uniquely fixed at R, option E is wrong; the question is answerable. Hence option C.

154. Chain the comparisons: Preeti > Rahul > Nita > Sameer > Deepti. Nita lies strictly between Rahul and Sameer in this order, so her salary must satisfy Rs. 25,000 < Nita < Rs. 40,000. Test the options: Rs. 22,000 and Rs. 24,500 are below Sameer's Rs. 25,000, so they are impossible; Rs. 41,000 and Rs. 45,000 exceed Rahul's Rs. 40,000, so they are impossible too. Only Rs. 32,000 lies in the required range. Hence option C.

155. Number the positions 1 (bottom) to 7 (top). A is at position 1. "Three cartons between A and B" puts B at position $1 + 3 + 1 = 5$. C is immediately above B, so C is at 6; D is immediately below B, so D is at 4. "Only one carton between D and E" means E is at $4 - 2 = 2$ or $4 + 2 = 6$; position 6 is taken by C, so E is at 2. The remaining positions are 3 and 7, to be filled by F and G with F above G, so G is at 3 and F is at 7. The stack from bottom to top is A, E, G, D, B, C, F. Between G (position 3) and C (position 6) lie positions 4 and 5, i.e. D and B — exactly two cartons. Hence option B.

156. Rank the six from 1 (tallest) to 6 (shortest). "F is shorter than only A" means exactly one person, A, is taller than F, so A is 1st and F is 2nd. "C is taller than only two" means exactly two persons are shorter than C, so C occupies rank $6 - 2 = 4$. The remaining ranks 3, 5 and 6 go to B, D and E. "B is taller than D but shorter than C" forces both B and D below rank 4, so B and D take ranks 5 and 6 with B above D: B is 5th and D is 6th. That leaves rank 3 for E, and indeed E is then not the shortest, satisfying the last clue. The order is A, F, E, C, B, D, so the third tallest is E. Hence option D.

157. Rank the parcels from 1 (heaviest) to 5 (lightest). "D is heavier than only two parcels" means exactly two are lighter than D, so D is 3rd. "B is heavier than D but lighter than E" gives $E > B > D$, and since D is 3rd, B must be 2nd and E 1st. A is the lightest, i.e. 5th, leaving rank 4 for C. The order is $E > B > D > C > A$. Now substitute the given weights: $B = 72$ kg and $C = 61$ kg, and D lies strictly between them, so $61 < D < 72$. Checking the options, 58 kg and 60 kg are below C, while 74 kg and 76 kg are above B; only 68 kg lies in the valid range. Hence option C.

158. Each department holds exactly two employees. Audit is filled first: Chirag and Divya, so neither can appear anywhere else. Bhaskar works in Marketing, and Aarti works in the same department as Bhaskar, so Marketing is Aarti and Bhaskar — now full. The only employees left are Esha and Farhan, and the only department with vacancies is Loans, so Loans consists of Esha and Farhan. This is consistent with "Esha does not work in Marketing". Options A and B name Marketing and Audit respectively, and option D pairs employees from two different departments, so only option C is correct.

159. The clues form two separate descending chains that meet only at the top. One chain is $A > B > C$; the other is $D > E > F$, and the link $A > D$ tells us A stands above the whole second chain. So A is definitely the tallest. However, nothing compares C with F, nor C with E or D. C could be shorter than F, or F could be shorter than C — both are consistent with every clue. For example, the orders

A, B, D, E, C, F and A, B, D, E, F, C both satisfy all five statements yet give different shortest persons. Since the bottom position is not pinned down, the shortest person cannot be identified. Hence option E.

160. Rank the students from 1 (highest marks) to 6 (lowest). "D scored more than only one student" means exactly one student is below D, so D occupies rank 5. Now chain the remaining clues: "F scored more than A but less than C" gives C > F > A, "E scored more than C" extends it to E > C > F > A, and "B scored less than A" completes it as E > C > F > A > B. These five students must fill the five ranks left over once D takes rank 5, namely 1, 2, 3, 4 and 6, and they must occupy them in that order: E is 1st, C is 2nd, F is 3rd, A is 4th and B is 6th. This is consistent with both remaining checks — C is not the highest (E is), and the single student below D is indeed B. So A stands 4th, meaning exactly three students — E, C and F — scored more than A. Hence option C.

161. Chain the comparisons. Pooja > Rohit > Nikhil and Sanjay > Pooja give Sanjay > Pooja > Rohit > Nikhil, and Nikhil > Vimal completes the order as Sanjay > Pooja > Rohit > Nikhil > Vimal. Vimal is the lowest, so the second lowest is Nikhil, whose deposit is therefore Rs. 35,000. Rohit deposited more than Nikhil, so Rohit's amount must exceed Rs. 35,000 (all amounts are different, so equality is ruled out). Among the options, Rs. 28,000, Rs. 33,500 and Rs. 34,000 are all below Rs. 35,000, and Rs. 35,000 itself is Nikhil's amount. Only Rs. 42,000 is greater than Rs. 35,000. Hence option D.

162. Rank the eight from 1 (tallest) to 8 (shortest). "Only one person is taller than G" puts G at rank 2, and "E is taller than G" makes E that one person, so E is rank 1. "B is shorter than exactly two persons" puts B at rank 3. "C is shorter than exactly four persons" puts C at rank 5. A is the shortest, rank 8. "F is taller than C but shorter than B" places F strictly between ranks 3 and 5, i.e. rank 4. The remaining ranks 6 and 7 go to H and D, and since H is taller than D, H is 6th and D is 7th. The full order is E, G, B, F, C, H, D, A. Persons taller than C (rank 5) but shorter than G (rank 2) occupy ranks 3 and 4, namely B and F — exactly two persons. Hence option B.

163. Each branch takes exactly two employees. Borivali is filled at once by R and T. Q and V must share a branch, and it is neither Andheri nor Borivali; Borivali is already full anyway. Andheri already contains P and Colaba already contains S, so each of those branches has only one vacancy left — not enough for a pair. Therefore Q and V must both go to Dadar, filling it. The employees still unplaced are U and W, and the remaining vacancies are one in Andheri (with P) and one in Colaba (with S). Since U does not work with P, U cannot go to Andheri, so U joins S in Colaba and W joins P in Andheri. The final allotment is Andheri: P and W; Borivali: R and T; Colaba: S and U; Dadar: Q and V. Hence option B.

164. Build the two orders separately. Age: Chetan is the oldest; Divya > Amit > Bina from the first clue, and Farah is younger than Bina. So from oldest to youngest the order is Chetan, Divya, Amit, Bina, Farah, making Divya the second oldest. Salary: Farah > Bina > Divya from the first salary clue, Amit is above Farah, and Chetan is at the bottom. So from highest to lowest the salary order is Amit, Farah, Bina, Divya, Chetan. Divya stands fourth in this salary list. Hence option C. The trap is answering "second" by carrying over her age position.

165. Chain the comparisons: F > E > D > A, with both B and C lighter than A. So F is 1st, E is 2nd, D is 3rd and A is 4th, while B and C occupy ranks 5 and 6 in some order. The third heaviest box is D, so $D = 34$ kg, and the heaviest is F, so $F = 48$ kg. Box A is immediately below D in the order, so A must weigh less than 34 kg (all weights are distinct). Checking the options: 35 kg, 36 kg and 40 kg all exceed 34 kg, and 34 kg is D's own weight, so all four are impossible. Only 31 kg is below 34 kg and can be A's weight, with B and C lighter still. Hence option D.

166. Rank the boxes from 1 (most pens) to 7 (fewest). "C contains more pens than exactly four boxes" puts four boxes below C, so C is at rank 3. "Only one box contains more pens than D" puts D at rank 2. E has the fewest, rank 7. That leaves ranks 1, 4, 5 and 6 for A, B, F and G. Rank 1 cannot be G or B, since D > G > B keeps both below D, and it cannot be A because F is above A; so F takes rank 1. The three boxes A, B and G then fill ranks 4, 5 and 6, and the clues A > G and G > B order them

as A, G, B, i.e. A is 4th, G is 5th and B is 6th. The full order is F, D, C, A, G, B, E. Now use the numbers: C at rank 3 has 34 pens and A at rank 4 has 28 pens, and G sits immediately below A, so G must hold fewer than 28 pens (all counts are different). Of the options, 29, 30, 33 and 35 all exceed 28 and are impossible; only 26 is below 28, leaving room for B and E below it. Hence option C.

167. Rank the sarees from 1 (costliest) to 7 (cheapest). D is the cheapest, rank 7. "Only two sarees are cheaper than E" places E at rank 5. "C is costlier than only three" means exactly three are cheaper than C, so C is at rank $7 - 3 = 4$. Now B > G > E puts both B and G above rank 5, and ranks 4 and 5 are taken, so B and G lie among ranks 1, 2 and 3. Since A is costlier than B, A must also be above B, so B cannot be rank 1; the only consistent assignment is A at 1, B at 2 and G at 3. The single remaining rank, 6, goes to F, which is consistent with F not being the costliest. The order is A, B, G, C, E, F, D. The cheapest is D, so the second cheapest is F. Hence option C.

168. Rank the six from 1 (highest) to 6 (lowest). "Only two customers have more money than S" puts S at rank 3. R has the least, rank 6. P has more than S, so P is at rank 1 or 2; T has more than P, so T is above P, forcing T to rank 1 and P to rank 2 (this also satisfies "Q does not have the highest"). The remaining ranks 4 and 5 go to Q and U, and since Q has more money than U, Q is 4th and U is 5th; U is indeed above R, as required. The final order is T, P, S, Q, U, R. The second lowest balance belongs to U, so U = Rs. 42,000. S stands above Q, which stands above U, so S's balance must be greater than Rs. 42,000. Among the options, Rs. 38,000 and Rs. 40,500 are too small and Rs. 42,000 is U's own balance; only Rs. 55,000 works. The order is fully fixed, so option E is wrong. Hence option D.

Subtopic 2.1.9

169. Number the positions $1, 2, 3, \ldots$ from the left end. Ravi is at position 5. Let Suman be at position s. Since exactly 3 employees sit between them, $|5 - s| - 1 = 3$, so $|5 - s| = 4$, giving $s = 9$ or $s = 1$.
Case 1: $s = 9$. Suman is 7th from the right, so total $= 9 + 7 - 1 = 15$.
Case 2: $s = 1$. Suman is 7th from the right, so total $= 1 + 7 - 1 = 7$. Check: in a row of 7, Ravi at position 5 is valid, and between positions 1 and 5 there are positions $2, 3, 4$, i.e. exactly 3 employees. Valid.
Both arrangements are possible, so the minimum is 7.

170. Count positions from the left end. Anjali is at position 12; let Bhavna be at position b. Exactly 5 trainees between them gives $|12 - b| - 1 = 5$, so $|12 - b| = 6$ and $b = 18$ or $b = 6$.
If $b = 18$: Bhavna is 15th from the right, so total $= 18 + 15 - 1 = 32$.
If $b = 6$: total $= 6 + 15 - 1 = 20$; Anjali at position 12 still fits in a row of 20, so this case is also valid.
The two possible totals are 32 and 20; the maximum is 32.

171. Number positions from the left end; Deepak is at position 6. If Esha is at position e, then $|6 - e| - 1 = 4$, so $|6 - e| = 5$ and $e = 11$ or $e = 1$.
If $e = 11$, Esha must be the right extreme, so the queue has 11 customers.
If $e = 1$, Esha is the left extreme, which is allowed. Then the queue only has to be long enough to contain Deepak at position 6, so the smallest total is 6 (Deepak himself at the right end). Between positions 1 and 6 lie positions $2, 3, 4, 5$, i.e. exactly 4 customers. Valid.
Hence the minimum is 6.

172. Number the boxes from the top: P is at position 4. Let Q be at position q from the top. Exactly 6 boxes between them gives $|4 - q| - 1 = 6$, so $|4 - q| = 7$ and $q = 11$ or $q = -3$.
A position cannot be negative, so $q = 11$ is the only possibility, i.e. Q is 11th from the top.
Q is also 3rd from the bottom, so total $= 11 + 3 - 1 = 13$ boxes.

173. Let the total be n and count positions from the left end. Only 6 officers sit to the right of Kavita, so Kavita is at position $n - 6$. Manish is at position 3.
Exactly 4 officers between them: $|(n - 6) - 3| - 1 = 4$, so $|n - 9| = 5$ and $n = 14$ or $n = 4$.
If $n = 4$, Kavita's position would be $4 - 6 = -2$, which is impossible.

Hence $n = 14$. Check: Kavita is at position 8, Manish at position 3, and positions $4, 5, 6, 7$ give exactly 4 officers between them.

174. Since all face north, positions increase from left to right. Sunil is 5th from the right end. Rohit is 3rd to the left of Sunil, so counting from the right end Rohit is at position $5 + 3 = 8$.
Therefore at least 8 persons (Rohit and the 7 persons to his right) must be present; there may be more persons standing to the left of Rohit.
The minimum is 8, which is not listed, so the answer is None of these.

175. Number the cartons from the bottom. Carton A is at position 5. Carton B is immediately above A, so B is at position 6 from the bottom.
Only two cartons lie above B, i.e. at positions 7 and 8.
Hence the topmost carton is at position 8, so the stack contains 8 cartons.

176. Count positions from the left. Ravi is at position 4; let Sneha be at position s. Then $|4-s|-1 = 2$, so $|4 - s| = 3$ and $s = 7$ or $s = 1$.
Case 1: $s = 7$. Sneha is 5th from the right, so total $= 7 + 5 - 1 = 11$. Ravi at 4 fits. Valid.
Case 2: $s = 1$. Then total $= 1 + 5 - 1 = 5$. Ravi at position 4 fits in a row of 5, and between positions 1 and 4 lie positions $2, 3$, i.e. exactly 2 clerks. Valid.
Both cases survive, so exactly 2 different totals (5 and 11) are possible.

177. Let the total number of officers be n. Since everyone faces the centre, the "left" direction is the same for all of them, so the circle splits into two arcs between Harish and Girish.
Girish is 3rd to the left of Harish, i.e. Girish is 3 seats away from Harish in the leftward direction, so that arc contains $3 - 1 = 2$ officers strictly between them.
Every officer other than Harish and Girish lies on one of the two arcs, so the rightward arc contains $n - 2 - 2 = n - 4$ officers strictly between them.
This is given as 6, so $n - 4 = 6$ and $n = 10$.
Check: 2 officers on one arc + 6 officers on the other arc + Harish and Girish $= 2 + 6 + 2 = 10$.

178. Count positions from the left end. Only 4 employees sit to the left of Jyoti, so Jyoti is at position 5.
Since all face north, 3rd to the left of Kunal means Jyoti's position = Kunal's position -3, so Kunal is at position $5 + 3 = 8$.
Only 6 employees sit to the right of Kunal, so the total $= 8 + 6 = 14$.

179. Let Bimal be on floor b. Exactly two floors between floors 3 and b gives $|3 - b| - 1 = 2$, so $|3 - b| = 3$ and $b = 6$ or $b = 0$.
Floor 0 does not exist, so $b = 6$.
Bimal is on the topmost floor, so the building has 6 floors. (Chirag is then on floor 5, which is consistent.)

180. Count positions from the left. Deepa is at position 6; let Farhan be at position f. Then $|6 - f| - 1 = 5$, so $|6 - f| = 6$ and $f = 12$ or $f = 0$. Position 0 is impossible, so $f = 12$.
Persons to the left of Deepa $= 6 - 1 = 5$.
Persons to the right of Farhan $= 5 + 1 = 6$.
Total $= 12 + 6 = 18$.

181. Number the parcels from the top. M is at position 2. Let N be at position n: $|2 - n| - 1 = 3$, so $|2 - n| = 4$ and $n = 6$ or $n = -2$. A negative position is impossible, so N is 6th from the top.
P lies below N with exactly one parcel between them, so P is at position $6 + 2 = 8$ from the top.
P is the bottommost parcel, so the rack contains 8 parcels.

182. Count from the left. Ritu is at position 8; let Sonu be at position s. Sonu is 11th from the right, so the total $= s + 11 - 1 = s + 10$. To maximise the total we must maximise s.
The number of persons between them is $|8 - s| - 1$, and this must be at most 3, so $|8 - s| \leq 4$, i.e. $4 \leq s \leq 12$ (with $s \neq 8$).

The largest permissible value is $s = 12$, which gives exactly $|8 - 12| - 1 = 3$ persons between them.
Total $= 12 + 10 = 22$.

183. Count positions from the left end. A is at position 4. Let B be at position b: $|4 - b| - 1 = 3$, so $|4 - b| = 4$ and $b = 8$ or $b = 0$. Position 0 is impossible, hence B is at position 8.
C sits 3rd to the left of B (all face north), so C is at position $8 - 3 = 5$.
Only 4 officers sit to the right of C, so the total $= 5 + 4 = 9$.
Consistency check: with 9 officers, B at position 8 is valid, and positions $6, 7, 8, 9$ are exactly the 4 officers to the right of C.

184. Starting at Gaurav and moving in one direction you meet 5 managers before reaching Harsh; moving in the opposite direction you meet 8 managers before reaching Harsh.
Going right round the circle once, every person is counted exactly once, so the total is the sum of the two arcs plus Gaurav and Harsh themselves.
Total $= 5 + 8 + 2 = 15$.

185. Let the total be n and count positions from the left end. Tanvi is 5th from the right, so Tanvi is at position $n - 4$.
Sudhir is 4th to the left of Tanvi, so Sudhir is at position $n - 4 - 4 = n - 8$. (Uday is then at position $n - 6$, which is consistent for any admissible n.)
At least 3 candidates sit to the left of Sudhir, so Sudhir's position must be at least 4: $n - 8 \geq 4$, i.e. $n \geq 12$.
Hence the minimum is 12. Check with $n = 12$: Sudhir at 4, Uday at 6, Tanvi at 8, which is 5th from the right; exactly 3 candidates sit to Sudhir's left.

186. Number the positions $1, 2, 3, \ldots$ from the west end. Since everybody faces south, each person's left hand points east, so "6th to the left of Bharat" means 6 positions to the east of Bharat: position of Chetna = position of Bharat $+ 6$.
Anita is at position 5. Let Bharat be at position b: $|5 - b| - 1 = 3$, so $|5 - b| = 4$ and $b = 9$ or $b = 1$.
Case 1: $b = 9$. Then Chetna is at position 15. Only 2 staff members sit to her east, so the total $= 15 + 2 = 17$. All positions are consistent, so 17 is possible.
Case 2: $b = 1$. Then Chetna is at position 7 and the total $= 7 + 2 = 9$. This is also consistent, but 9 is not among the options.
Of the given choices only 17 can be the total.

187. Count positions from the left end. Deven is at position 7; let Ekta be at position e. Ekta is 4th from the right, so the total $= e + 4 - 1 = e + 3$.
The number between them is $|7 - e| - 1$, and $2 \leq |7 - e| - 1 \leq 5$ gives $3 \leq |7 - e| \leq 6$, so $e \in \{1, 2, 3, 4\}$ or $e \in \{10, 11, 12, 13\}$.
The row must contain Deven at position 7, so total ≥ 7, i.e. $e + 3 \geq 7$, i.e. $e \geq 4$.
Smallest admissible value: $e = 4$, total $= 7$. Then between positions 4 and 7 lie $5, 6$, i.e. 2 depositors, which is allowed.
Largest admissible value: $e = 13$, total $= 16$. Then between positions 7 and 13 lie $8, 9, 10, 11, 12$, i.e. 5 depositors, which is allowed.
Difference $= 16 - 7 = 9$.

188. This time number the boxes from the bottom, so S is at position 1. Let R be at position r: $|1 - r| - 1 = 5$, so $|1 - r| = 6$ and $r = 7$ or $r = -5$. A negative position is impossible, so R is 7th from the bottom.
Q is immediately above R, so Q is 8th from the bottom.
Let P be at position p: $|8 - p| - 1 = 3$, so $|8 - p| = 4$ and $p = 12$ or $p = 4$.
Only 1 box is placed above P, so P is 2nd from the top and the stack contains $p + 1$ boxes.
If $p = 4$, the stack would hold only 5 boxes, but Q must occupy position 8 from the bottom, which is impossible. So this case is rejected.
Hence $p = 12$ and the stack contains $12 + 1 = 13$ boxes. Check: from the bottom, S at 1, R at 7, Q at 8, P at 12, with a single box at position 13 above P.

189. Fix one direction of travel, namely "to the right", and count the number of seats moved.
From Anjali, moving right, 4 managers are passed before Bharti is reached, so Bharti is $4+1=5$ seats to the right of Anjali.
Chitra is 3rd to the right of Bharti, i.e. 3 seats further, so Chitra is $5+3=8$ seats to the right of Anjali.
From Chitra, moving right, 2 managers are passed before Anjali is reached, so Anjali is $2+1=3$ seats to the right of Chitra.
Moving right from Anjali by $8+3=11$ seats returns to Anjali, i.e. one complete round of the table.
Hence the table has 11 managers.

Subtopic 2.2.1

190. Write the chain in one line: $P > Q \geq R > S$. A chain may be combined only if all the arrowheads point the same way, which they do here.
Conclusion I ($P > S$): From $P > Q$, $Q \geq R$ and $R > S$ we get $P > Q \geq R > S$. Since at least one link is a strict $>$ (in fact two of them are, namely $P > Q$ and $R > S$; the middle link $Q \geq R$ is non-strict), the combined relation is strict: $P > S$. So I follows.
Conclusion II ($Q > S$): Take the part of the chain from Q onwards: $Q \geq R > S$. Here Q is at least as large as R, and R is strictly larger than S, so $Q > S$. The presence of the strict link $R > S$ makes the result strict. So II follows.
Both conclusions follow, which is option E.

191. Join the three statements into a single chain: $A \geq B > C \geq D$.
Conclusion I ($A > D$): All the signs point the same way, so the relation between the two ends is valid. The chain contains one strict inequality, $B > C$; a single strict link anywhere in an otherwise "$\geq$" chain makes the overall relation strict. Hence $A > D$, and I follows.
Conclusion II ($D \geq B$): The chain gives $B > C \geq D$, i.e. $B > D$. So D is strictly smaller than B, and $D \geq B$ is definitely false, not merely undetermined. II does not follow.
Only conclusion I follows, which is option A.

192. From the statement, $M = N$ and $N \leq O$, so $M \leq O$, i.e. $O \geq M$.
Taking the conclusions one at a time: $O \geq M$ allows two possibilities — O may be strictly greater than M, or O may be exactly equal to M. Neither possibility is ruled out by the data, so Conclusion I alone is not definite and Conclusion II alone is not definite.
Checking for the either–or case: The two conclusions use the same pair of elements O and M; one says $O > M$ and the other says $O = M$. Together they exhaust every case permitted by $O \geq M$, and they cannot both be true at once. This is exactly the complementary-pair situation, so "either I or II follows".
Hence option C. (Note L is irrelevant here — it only tells us $L < M$.)

193. Convert each sentence into a symbol, using the first letter for each person.
"Rakesh is more than Suresh" gives $R > S$.
"Rakesh is less than Mahesh" gives $R < M$, i.e. $M > R$.
"Naresh is more than Mahesh" gives $N > M$.
Now string them together starting from the largest: $N > M$, $M > R$ and $R > S$ combine into the single chain $N > M > R > S$.
The chain is complete — every one of the four is placed — so nothing is left undetermined and option E is wrong. The leftmost element of the chain is N, so Naresh draws the highest salary, and Suresh the lowest.
Hence option D.

194. The combined chain is $A > B \leq C < D$.
Conclusion I ($A > C$): Between A and C the signs point in opposite directions — $A > B$ opens towards A, while $B \leq C$ opens towards C. All we know is that both A and C are at least as large as B; either of them could be the bigger one. So no relation between A and C is established and I does not follow.

Conclusion II ($D > B$): Read the chain from B rightwards: $B \leq C$ and $C < D$, so $B \leq C < D$. The signs agree in direction, and the strict link $C < D$ makes the result strict, giving $B < D$, i.e. $D > B$. So II follows.
Only conclusion II follows, which is option B.

195. The chain is $T \geq U < V \leq W$. Notice that U is the "low point": the signs on either side of U point away from it.
Conclusion II ($T > V$): To compare T with V we must pass through U, but $T \geq U$ and $U < V$ point in opposite directions. Both T and V are bigger than (or equal to) U, and nothing fixes which of the two is bigger. Not established.
Conclusion I ($W > T$): Comparing W with T also requires passing through U, and the same break occurs. Not established.
Complementary check: $W > T$ and $T > V$ involve different pairs of elements, so they are not a complementary pair and the "either–or" option does not apply.
Neither conclusion follows, which is option D.

196. We need the chain from P to S to (i) run in one consistent direction and (ii) contain at least one strict $>$ so that the final relation is strict rather than merely $\geq$.
Testing $>$: $P \geq Q > R = S$. All signs point the same way and the link $Q > R$ is strict, so $P > S$. This works.
Testing $\geq$: $P \geq Q \geq R = S$ gives only $P \geq S$. Since equality throughout is possible, $P > S$ is not guaranteed.
Testing $<$ or $\leq$: $P \geq Q < R$ (or $Q \leq R$) breaks the chain — the signs oppose each other at Q, so no relation between P and S can be drawn at all.
Testing $=$: $P \geq Q = R = S$ gives $P \geq S$ only, not $P > S$.
Hence the required symbol is $>$, option A.

197. The two statements share the element C, so the combined chain is $A \geq B > C \leq D < E$. The direction reverses at C, which is the low point of the chain.
Conclusion I ($A > D$): Going from A to D we must cross C, where $B > C$ and $C \leq D$ point in opposite directions. A and D are both above C, but their mutual order is free. Does not follow.
Conclusion II ($E > C$): Read $C \leq D < E$. The signs agree, and $D < E$ is strict, so $C < E$, i.e. $E > C$. Follows.
Conclusion III ($B > E$): Again the route from B to E passes through the reversal at C, so no relation is fixed. Does not follow.
Only conclusion II follows, which is option B.

198. Merge the statements into one chain: $P = Q \geq R > S \geq T$.
Conclusion I ($P > S$): $P = Q$, $Q \geq R$ and $R > S$ give $P \geq R > S$, and the strict link $R > S$ makes the whole relation strict. So $P > S$ follows.
Conclusion II ($Q > T$): From Q rightwards, $Q \geq R > S \geq T$. All signs agree and the link $R > S$ is strict, so $Q > T$ follows.
Conclusion III ($P = R$): We know $P = Q$ and $Q \geq R$, hence $P \geq R$. That permits $P > R$ as well as $P = R$, so equality is possible but not certain. A conclusion must be *definitely* true, so III does not follow. (It is also not part of a complementary pair here, since no conclusion asserts $P > R$.)
Only I and II follow, which is option A.

199. The chain is $A \geq B \leq C < D$, with a direction reversal at B.
Individually: To compare A with C we must pass through B, where $A \geq B$ and $B \leq C$ oppose each other. Both A and C sit above B, so A could be larger, smaller or equal to C. Hence neither Conclusion I nor Conclusion II is definitely true on its own.
Complementary check: Both conclusions concern the same pair A and C. Conclusion I says $A > C$; Conclusion II says $A \leq C$, i.e. $A < C$ or $A = C$. Between them they cover every possible case, and they can never both hold. That is precisely a complementary pair, so "either I or II follows".
Hence option C. (D plays no part — it is only known to exceed C.)

200. Let R, W, M and B denote the per-kg prices of rice, wheat, maize and barley.

"Rice is more than wheat" gives $R > W$.
"Wheat is *not less than* maize" means wheat is either more than or equal to maize, i.e. $W \geq M$. ("Not less than" translates to $\geq$, never to a plain $>$.)
"Maize is more than barley" gives $M > B$.
Combined chain: $R > W \geq M > B$.
Conclusion I ($R > B$): The whole chain runs one way and contains strict links, so $R > B$. Follows.
Conclusion II ($W > B$): From $W \geq M > B$, the strict link $M > B$ forces $W > B$. Follows.
Both conclusions follow, which is option E.

201. The two expressions share I, so the single chain is $F < G \leq H = I < J$, i.e. reading upwards: F is the smallest, then G, then $H = I$, then J.
Option A ($F > H$): $F < G \leq H$ gives $F < H$, so this is false.
Option B ($G = J$): $G \leq H = I < J$ gives $G < J$ because of the strict link $I < J$. Equality is impossible, so this is false.
Option C ($H > J$): $H = I$ and $I < J$ give $H < J$, so this is false.
Option D ($J > G$): $G \leq H = I < J$ gives $G < J$, i.e. $J > G$. Definitely true.
Option E ($F \geq I$): $F < G \leq H = I$ gives $F < I$, so this is false.
Hence option D.

202. We need T to come out strictly larger than Q.
Option A: $Q > R \geq S = T$ gives $Q > T$ — the opposite of what is wanted. Rejected.
Option B: $Q \geq R > S \leq T$. The direction reverses at S: both Q and T lie above S, so their mutual order is undetermined. Rejected.
Option C: $T = S \leq R < Q$ reads from the right as $Q > R \geq S = T$, i.e. $Q > T$. Rejected.
Option D: $T \geq S > R = Q$. All signs point the same way, from T down to Q, and the link $S > R$ is strict. Hence $T > Q$, that is $Q < T$. Definitely true.
Since a valid expression exists, option E is not required. Hence option D.

203. Write Ap, My, Jn, Jl, Au for the five monthly counts.
"April not less than May" gives $Ap \geq My$.
"May more than June" gives $My > Jn$.
"June not more than July" gives $Jn \leq Jl$.
"July less than August" gives $Jl < Au$.
Chain: $Ap \geq My > Jn \leq Jl < Au$. The direction reverses at Jn, which is the low point.
Conclusion I ($Au > My$): To relate Au to My we must cross Jn, where $My > Jn$ and $Jn \leq Jl$ oppose. Both My and Au exceed Jn, but nothing fixes which is larger. Does not follow.
Conclusion II ($Ap > Jn$): Here the route stays on one side of the low point: $Ap \geq My > Jn$, and the strict link $My > Jn$ makes it $Ap > Jn$. Follows.
Only conclusion II follows, which is option B.

204. First decode each symbol into ordinary signs.
"Not smaller than" means greater or equal, so @ is $\geq$.
"Neither smaller than nor equal to" leaves only greater, so # is $>$.
"Neither smaller than nor greater than" leaves only equal, so % is $=$.
"Not greater than" means smaller or equal, so $\star$ is $\leq$.
"Neither greater than nor equal to" leaves only smaller, so $\odot$ is $<$.
The statements become $P = Q$, $Q \leq R$, $R > S$, i.e. the chain $P = Q \leq R > S$, with R as the high point.
Conclusion I ($S < Q$): Reaching Q from S needs the crossing at R, where $Q \leq R$ and $R > S$ point in opposite directions. Both Q and S lie below R, so their order is free. Does not follow.
Conclusion II ($R \geq P$): $R \geq Q$ and $Q = P$ give $R \geq P$. Follows.
Conclusion III ($P \leq R$): This is the same statement as II written the other way round, so it also follows.
Only II and III follow, which is option A.

205. Collect the facts: $A > B$, $B \geq C$, $D \geq C$, $D < E$. Both B and D sit above C, in two separate

branches meeting at C.
Conclusion I ($E > C$): $E > D$ and $D \geq C$ give $E > C$, the strict link $D < E$ making it strict. Follows.
Conclusion II ($A > D$): The route from A to D runs $A > B \geq C \leq D$, reversing direction at C. Nothing fixes A against D. Does not follow.
Conclusions III and IV ($D \geq B$ and $B > D$): All we know is $B \geq C$ and $D \geq C$; the two branches are independent, so neither conclusion is definite on its own.
Complementary check on III and IV: They concern the same pair B and D. $D \geq B$ covers $D > B$ and $D = B$; $B > D$ covers the remaining case. Together they exhaust all possibilities and cannot both hold, so "either III or IV follows".
Therefore conclusion I follows, and either III or IV follows — option B.

206. The chain is $R > O \geq A = S \leq T$. Note that S (equal to A) is a low point: the sign turns round at S, so T sits on a branch of its own.
Option A ($T > A$): $A = S$ and $S \leq T$ give $A \leq T$. That allows $T = A$, so $T > A$ is possible but not certain. Not definitely true.
Option B ($S < R$): Read leftwards from S: $S = A$, $A \leq O$ and $O < R$, so $S \leq O < R$. The strict link $O < R$ makes it $S < R$. Definitely true.
Option C ($O < T$): Comparing O with T requires crossing the reversal at S; both O and T are at least as large as S, so their order is undetermined. Not definitely true.
Option D ($R < S$): We have just shown $R > S$, so this is false.
Since option B holds, "None of these" is not needed. Hence option B.

207. Translate each sentence, using the branch letters for their deposits.
"P more than Q" gives $P > Q$.
"Q less than R but more than S" gives $R > Q$ and $Q > S$, i.e. $R > Q > S$.
"R less than P" gives $P > R$.
"T more than R but less than P" gives $P > T > R$.
Now assemble. From the last statement $P > T > R$, and from the second $R > Q > S$. These share R, so they join into $P > T > R > Q > S$. This is consistent with $P > Q$ and $P > R$, which are already implied.
The complete order from highest to lowest is P, T, R, Q, S. The last element is S, so branch S has the lowest deposits.
Because a unique lowest branch is determined, "None of these" does not apply. Hence option D.

208. All three statements link up head to tail, giving one unbroken chain: $K \geq L > M \geq N > O$. Every sign points the same way, so any two elements can be compared, and the result is strict whenever at least one strict link lies between them.
Conclusion I ($K > O$): The path $K \geq L > M \geq N > O$ contains the strict links $L > M$ and $N > O$, so $K > O$. Follows.
Conclusion II ($L > N$): The path $L > M \geq N$ contains the strict link $L > M$, so $L > N$. Follows.
Conclusion III ($M > O$): The path $M \geq N > O$ contains the strict link $N > O$, so $M > O$. Follows.
Conclusion IV ($K > N$): The path $K \geq L > M \geq N$ contains the strict link $L > M$, so $K > N$. Follows.
All four conclusions follow. No option lists all four, so the correct response is "None of these" — option E.

209. The two statements share D, so the combined chain is $A = B \leq C < D \leq E$. Every sign points the same way, and the link $C < D$ is strict.
Option A ($E > A$): $A = B \leq C < D \leq E$ gives $A < E$ because of the strict link $C < D$. So $E > A$ is true.
Option B ($C < E$): $C < D \leq E$ gives $C < E$. True.
Option C ($A \geq D$): From the chain, $A = B \leq C < D$, so $A < D$. Therefore A can never be greater than or equal to D; this statement is definitely false.
Option D ($D \geq B$): $B \leq C < D$ gives $B < D$, hence $D > B$, and $D \geq B$ is certainly satisfied. True.

Option E ($E > B$): $B \le C < D \le E$ gives $B < E$. True.
Only option C is definitely false, so the answer is C.

210. The four statements form one chain: $J \le K < L = M \le N$. The signs all point in the same direction, and the link $K < L$ is strict.
Conclusion I ($N > J$): Travelling from J to N we pass through $K < L$, a strict link, so $J < N$, i.e. $N > J$. Follows.
Conclusion II ($J = L$): From $J \le K$ and $K < L$ we get $J < L$. Equality is therefore impossible, so this conclusion is definitely false, not merely uncertain. Does not follow.
Conclusion III ($K < N$): From K rightwards, $K < L = M \le N$, and the strict link $K < L$ gives $K < N$. Follows.
Only conclusions I and III follow, which is option C.

Subtopic 2.2.2

211. Decode each symbol first. $M \oplus R$ means M is not smaller than R, i.e. $M \ge R$. $R \odot T$ means R is neither greater nor smaller than T, i.e. $R = T$. $T \star K$ means T is not greater than K, i.e. $T \le K$. Combining: $M \ge R = T \le K$. Conclusion I is $K \otimes M$, i.e. $K > M$. Here M and K both sit on the *higher* side of T, and the two inequalities point away from each other ($M \ge T$ and $K \ge T$), so no relation between M and K can be established. Conclusion I is not true. Conclusion II is $M \oplus T$, i.e. $M \ge T$. From $M \ge R$ and $R = T$ we get $M \ge T$ directly. Conclusion II is true. Hence only conclusion II is true.

212. Decoding: $D \bullet F$ gives $D < F$; $F \star H$ gives $F \le H$; $H \otimes J$ gives $H > J$. The combined chain is $D < F \le H > J$. Conclusion I is $H \otimes D$, i.e. $H > D$. Taking the first two links, $D < F$ and $F \le H$ give $D < H$, that is $H > D$. Conclusion I is true. Conclusion II is $J \bullet F$, i.e. $J < F$. Both F and J are below H ($F \le H$ and $J < H$), so the chain from F to J is broken at H and no relation between them follows. Conclusion II is not true. Hence only conclusion I is true.

213. Each $\star$ means "not greater than", i.e. $\le$. So the statements give $P \le Q$, $Q \le R$ and $R \le S$, forming one unbroken chain $P \le Q \le R \le S$. Conclusion I is $S \oplus P$, i.e. $S \ge P$. Since the whole chain runs in one direction, $P \le S$, which is exactly $S \ge P$. True. Conclusion II is $S \oplus Q$, i.e. $S \ge Q$. From $Q \le R \le S$ we get $Q \le S$, i.e. $S \ge Q$. True. Note that a strict conclusion such as $P < S$ would *not* follow, because every link allows equality; but both conclusions here use $\ge$, so both hold. Hence both conclusions are true.

214. Decoding: $A \oplus B$ gives $A \ge B$ and $B \star C$ gives $B \le C$. The chain is $A \ge B \le C$, where the arrows point away from B, so individually neither $A > C$ nor $C \ge A$ can be established. Now compare the two conclusions. Conclusion I is $A \otimes C$, i.e. $A > C$; conclusion II is $C \oplus A$, i.e. $C \ge A$. These two statements are exact complements of each other: for any pair of real numbers exactly one of $A > C$ and $A \le C$ must hold. So although neither is individually definite, one of them must always be true. This is the standard *either–or* case. Hence either conclusion I or conclusion II is true.

215. Decoding: $L \star N$ gives $L \le N$; $N \bullet P$ gives $N < P$; $P \oplus Q$ gives $P \ge Q$. The chain is $L \le N < P \ge Q$. Conclusion I is $L \otimes Q$, i.e. $L > Q$. Both L and Q lie below P, and the chain reverses at P, so no relation between L and Q follows. Not true. Conclusion II is $Q \otimes N$, i.e. $Q > N$. Again $Q \le P$ and $N < P$ place both below P with no link between them; for instance $N = 2$, $P = 9$, $Q = 1$ makes $Q < N$, while $N = 2$, $P = 9$, $Q = 8$ makes $Q > N$. Not true. Also note the two conclusions are not complementary, so the either–or rule does not apply. Hence neither conclusion is true.

216. Note that this question uses a *different* key from the earlier ones, so decode carefully. $V \oplus W$ means V is neither greater than nor equal to W, i.e. $V < W$. $W \bullet X$ means $W = X$. $X \otimes Y$ means X is not greater than Y, i.e. $X \le Y$. Combining: $V < W = X \le Y$. Conclusion I is $V \oplus Y$, i.e. $V < Y$. Along the chain $V < X$ and $X \le Y$, so $V < Y$. True. Conclusion II is $W \odot Y$, i.e. $W > Y$. But the chain gives $W = X \le Y$, so $W \le Y$, which contradicts $W > Y$. Not true. Hence only conclusion I is true.

217. The two given links are $A \oplus B$, i.e. $A \geq B$, and $C \oplus D$, i.e. $C \geq D$. The required relation $A \otimes D$ means $A > D$, so we need an unbroken chain from A down to D containing at least one *strict* inequality. Test each choice for the middle link. With $\oplus$ $(B \geq C)$ the chain is $A \geq B \geq C \geq D$, giving only $A \geq D$; equality throughout is possible, so $A > D$ is not definite. With $\otimes$ $(B > C)$ the chain is $A \geq B > C \geq D$, which forces $A > D$. Definite. With $\odot$ $(B = C)$ the chain is $A \geq B = C \geq D$, again only $A \geq D$. With $\star$ $(B \leq C)$ and with $\bullet$ $(B < C)$ the direction reverses at B, breaking the chain, so nothing follows. Hence the required symbol is $\otimes$.

218. Decoding: $F \star G$ gives $F \leq G$; $G \otimes H$ gives $G > H$; $H \oplus J$ gives $H \geq J$. The chain is $F \leq G > H \geq J$. Conclusion I is $F \otimes J$, i.e. $F > J$. Both F and J lie below G and the chain reverses at G, so no relation between F and J can be fixed (take $G = 10$, $H = 5$, $J = 4$; then $F = 1$ gives $F < J$ while $F = 9$ gives $F > J$). Not true. Conclusion II is $G \otimes J$, i.e. $G > J$. From $G > H$ and $H \geq J$ the chain is unbroken and contains a strict link, so $G > J$. True. Conclusion III is $J \star G$, i.e. $J \leq G$. Since $G > J$ is established, $J < G$, and therefore $J \leq G$ certainly holds. True. Hence only conclusions II and III are true.

219. Decoding: $P \otimes Q$ gives $P > Q$; $Q \star R$ gives $Q \leq R$; $R \bullet S$ gives $R < S$; $S \odot T$ gives $S = T$. The chain is $P > Q \leq R < S = T$. Conclusion I is $T \otimes R$, i.e. $T > R$. Since $T = S$ and $S > R$, we get $T > R$. True. Conclusion II is $P \otimes T$, i.e. $P > T$. The chain reverses at Q: P is above Q while T is reached by going up from Q through R and S. So P and T are not connected by a single-direction chain. For example $Q = 1, R = 2, S = T = 3$ with $P = 2$ gives $P < T$, while $P = 100$ gives $P > T$. Not true. Hence only conclusion I is true.

220. Decode with this key: $\star$ means "not smaller than" $=\geq$; $\odot$ means "neither smaller than nor equal to" $=>$; $\bullet$ means $=$; $\otimes$ means "not greater than" $=\leq$. So $K \geq L$, $L > M$, $M = N$, $N \geq O$. The full chain is $K \geq L > M = N \geq O$, a single unbroken descending chain containing one strict link. Conclusion I is $K \odot O$, i.e. $K > O$. Following the chain end to end, $K \geq L$, $L > M$, $M = N$, $N \geq O$, and the strict link $L > M$ makes the overall relation strict: $K > O$. True. Conclusion II is $O \otimes L$, i.e. $O \leq L$. From $O \leq N = M$ and $M < L$ we get $O < L$, and $O < L$ certainly satisfies $O \leq L$. True. Hence both conclusions are true.

221. The given expression decodes to $R > S \geq T = U$, a single descending chain. Now test each option. Option A, $U \otimes R$, means $U > R$; but $U = T \leq S < R$, so in fact $U < R$ – false. Option B, $T \star R$, means $T \leq R$; from $T \leq S$ and $S < R$ we get $T < R$, which certainly satisfies $T \leq R$ – true. Option C, $S \bullet U$, means $S < U$; but $S \geq T = U$ gives $S \geq U$, the opposite – false. Option D, $U \otimes S$, means $U > S$; again $U = T \leq S$ – false. Since exactly one option, B, is definitely true, "None of these" is not required.

222. The two targets decode to $P > R$ and $R < Q$, i.e. we need Q strictly above R, and P strictly above R. Test each pair. Option A gives $P > Q \geq R$: this yields $P > R$, but $Q \geq R$ allows $Q = R$, so $R < Q$ is not definite – rejected. Option B gives $P > Q \leq R$: the chain reverses at Q, so P versus R is undetermined – rejected. Option C gives $P = Q \geq R$: this gives only $P \geq R$ and again $Q = R$ is possible – rejected. Option D gives $P \geq Q > R$: from $Q > R$ we get $R < Q$, definite; and $P \geq Q > R$ forces $P > R$, definite. Both targets hold, so option D is correct.

223. Decoding: $W \oplus X$ gives $W \geq X$; $X \otimes Y$ gives $X > Y$; $Y \odot Z$ gives $Y = Z$. The chain is $W \geq X > Y = Z$, a single descending run containing one strict link. Conclusion I is $W \otimes Z$, i.e. $W > Z$. Travelling along the chain, $W \geq X$, $X > Y$ and $Y = Z$, and the strict link $X > Y$ makes the overall relation strict, so $W > Z$. True. Conclusion II is $Z \bullet X$, i.e. $Z < X$. Since $Z = Y$ and $X > Y$, we get $X > Z$, that is $Z < X$. True. Conclusion III is $W \odot Y$, i.e. $W = Y$. But $W \geq X$ and $X > Y$ force $W > Y$, so equality is impossible. Not true. Note also that II and III are not complements of each other, so no either–or relief applies to III. Hence only conclusions I and II are true.

224. Decode with this key: $\odot =>$, $\star =\geq$, $\oplus =<$, $\bullet ==$. So $B > C$, $C \geq D$, $D < E$, $E = F$, giving the chain $B > C \geq D < E = F$. Conclusion I is $B \odot D$, i.e. $B > D$. From $B > C$ and $C \geq D$ the chain runs one way with a strict link, so $B > D$. True. Conclusion II is $F \odot D$, i.e. $F > D$. Since $F = E$ and $E > D$, we get $F > D$. True. Conclusion III is $B \odot F$, i.e. $B > F$. The chain reverses

at D: B is reached going up from D on the left and F going up from D on the right, so the two are unrelated. Taking $D = 1$, $C = 1$, $B = 2$, $E = F = 50$ gives $B < F$, while $E = F = 1.5$ gives $B > F$. Not true. Hence only conclusions I and II are true.

225. Decoding: $J \oplus K$ gives $J \geq K$; $K \bullet L$ gives $K < L$; $L \star M$ gives $L \leq M$; $M \otimes N$ gives $M > N$. The chain is $J \geq K < L \leq M > N$, which has two reversal points, at K and at M. Conclusion I is $L \star J$, i.e. $L \leq J$. Both J and L sit above K and the chain reverses at K, so they cannot be compared. With $K = 1$, $J = 1$, $L = 100$ we get $L > J$; with $J = 500$ we get $L < J$. Not true. Conclusion II is $M \otimes K$, i.e. $M > K$. Here $K < L$ and $L \leq M$ form an unbroken ascending chain with a strict link, so $K < M$, i.e. $M > K$. True. Conclusion III is $J \otimes N$, i.e. $J > N$. J is linked only downward to K, while N hangs below M on the far side of the reversal at K, so no comparison is possible ($J = K = 1$, $L = M = 10$, $N = 9$ gives $J < N$; $N = 0$ gives $J > N$). Not true. Hence only conclusion II is true.

226. The two required relations decode to $S < P$ (i.e. $P > S$) and $Q \geq S$. Test each combination. Option A gives $P \geq Q \geq R > S$: this is one unbroken descending chain, so $P > S$ (the strict link $R > S$ makes it strict) and $Q \geq R > S$ gives $Q > S$, hence certainly $Q \geq S$. Both required relations hold. Option B gives $P > Q \leq R \geq S$: the chain reverses at Q, so P versus S is undetermined – rejected. Option C gives $P = Q \leq R < S$: here S is the largest, so $P > S$ fails – rejected. Option D gives $P \leq Q > R \geq S$: P and S both lie below Q with a reversal at Q, so $P > S$ is not definite – rejected. Since option A works, "None of these" is wrong. The answer is option A.

227. Decode with this key: $\otimes = \leq$, $\oplus = <$, $\star = \geq$, $\odot = >$. So $Q \leq R$, $R < S$, $S \geq T$, $T > U$, giving $Q \leq R < S \geq T > U$. The chain rises to a peak at S and then falls, so items on opposite sides of S cannot be compared. Conclusion I is $Q \oplus T$, i.e. $Q < T$. Q lies on the left of the peak and T on the right, so no comparison is possible: with $Q = 1, R = 1, S = 100, T = 2, U = 0$ we get $Q < T$, but with $Q = 90, R = 90, S = 100, T = 2, U = 1$ we get $Q > T$. Not definite. Conclusion II is $U \otimes R$, i.e. $U \leq R$. Again U sits below T on the right of the peak and R on the left; with $R = 1$, $S = 100$, $T = 99$, $U = 50$ we get $U > R$. Not definite. Conclusion III is $U \odot Q$, i.e. $U > Q$; by the same argument (both hang below the peak on opposite sides) it is not definite either. Since the two doubtful conclusions I and III are not complements of each other ($Q < T$ versus $U > Q$ involve different pairs), no either–or relief applies. Hence none of the conclusions is true.

228. The target relation $H \otimes M$ means $H > M$, so we need an unbroken chain from H down to M with at least one strict link. Option A decodes to $H \geq J \leq K > M$: the chain reverses at J, so H and M cannot be compared – rejected. Option B decodes to $H = J \geq K \leq M$: the chain reverses at K, so again nothing follows – rejected. Option C decodes to $H > J = K \geq M$: this runs in one direction throughout, and the strict link $H > J$ makes the result strict, so $H > M$ – definitely true. Option D decodes to $M \leq K < J \geq H$: it reverses at J, with M and H both below J, so no comparison – rejected. Since option C works, "None of these" is wrong.

229. Decoding the statements: $P \star Q$ gives $P \leq Q$; $Q \bullet R$ gives $Q < R$; $R \oplus S$ gives $R \geq S$; $S \otimes T$ gives $S > T$. The chain of salaries is $P \leq Q < R \geq S > T$. Conclusion I claims $R > P$ (Kabir above Rohit). From $P \leq Q$ and $Q < R$ we get $P < R$, so $R > P$. True. Conclusion II claims $Q < S$ (Sneha below Meera). Here $Q < R$ and $S \leq R$ put both Q and S below Kabir's salary, with the chain reversing at R, so they cannot be compared. For instance Q = Rs. 30,000, R = Rs. 80,000, S = Rs. 40,000 gives $Q < S$, whereas S = Rs. 20,000 (with T smaller still) gives $Q > S$. Not true. Hence only conclusion I is true.

230. The two targets decode to $L > N$ and $M = N$. So the filled expression must force M to be exactly equal to N and L to be strictly greater than N; the only pair that can do this is $\otimes$ followed by $\odot$, giving $L > M = N$. Now check the offered pairs. Option A gives $L > M \geq N$: here $L > N$ holds, but $M \geq N$ permits $M > N$, so $M = N$ is not definite – rejected. Option B gives $L \geq M = N$: now $M = N$ holds, but $L \geq N$ permits $L = N$, so $L > N$ is not definite – rejected. Option C gives $L = M > N$: then $M > N$, contradicting $M = N$ – rejected. Option D gives $L > M \leq N$: the chain reverses at M, so L versus N is undetermined and $M = N$ is not forced – rejected. The required pair $\otimes, \odot$ is not listed, so the answer is "None of these".

231. Decoding: $X \oplus Y$ gives $X \geq Y$; $Y \star Z$ gives $Y \leq Z$; $Z \bullet W$ gives $Z < W$. The chain is $X \geq Y \leq Z < W$. Conclusion I is $W \otimes Y$, i.e. $W > Y$. From $Y \leq Z$ and $Z < W$ the chain is unbroken and strict, so $Y < W$, i.e. $W > Y$. Definitely true. Conclusion II is $X \otimes Z$, i.e. $X > Z$, and conclusion III is $Z \oplus X$, i.e. $Z \geq X$. The chain reverses at Y, with both X and Z above Y, so neither can be established on its own. However, $X > Z$ and $Z \geq X$ (which is the same as $X \leq Z$) are exact complements, so exactly one of them must hold in every case. That makes II and III an either–or pair. Combining, conclusion I is definitely true and either II or III is true, which is option B. Option D fails because II and III cannot both be true, and option C ignores the definite conclusion I.

Subtopic 2.2.3

232. Combine the statements into a single chain: $M \geq N \geq O \geq P$. Dropping the middle terms gives $M \geq P$, because a chain made only of $\geq$ signs yields $\geq$ between the end terms.
Test conclusion I ($M > P$): take $M = N = O = P = 4$. Every statement holds, yet $M = P$, so $M > P$ is not forced. I does not follow.
Test conclusion II ($M = P$): take $M = 9$, $N = 7$, $O = 5$, $P = 2$. Every statement holds, yet $M \neq P$. II does not follow.
Now check whether they form a complementary pair. The derived relation is $M \geq P$, which means exactly one of "$M > P$" and "$M = P$" must be true in every valid case, and the two possibilities cannot occur together. They are mutually exclusive and together exhaustive, so this is a complementary pair. Hence *either* I *or* II follows. Option C.

233. The chain is $P \leq Q \leq R$, i.e. $R \geq P$.
Conclusion II states exactly the derived relation $R \geq P$, so II definitely follows.
Conclusion I ($R > P$) is not forced: with $P = Q = R = 6$ all statements hold but $R = P$. So I does not follow.
Students often mark "either I or II" here out of habit. That is wrong: a complementary pair must be *mutually exclusive*, but $R > P$ and $R \geq P$ overlap (when $R = 7, P = 3$ both are true), and in any case II already follows on its own. An either-or verdict is possible only when *neither* conclusion follows individually. Hence only II follows. Option B.

234. Write the combined chain: $X \geq Y = Z > W$.
Conclusion I ($X > W$): the path from X to W is $\geq$, then $=$, then $>$. A chain containing at least one strict $>$ and no reversal gives a strict $>$ between the ends, so $X > W$ definitely follows.
Conclusion II ($Y > W$): the path from Y to W is $Y = Z > W$, which gives $Y > W$ definitely.
Both conclusions are individually certain, so there is no question of a complementary pair — either-or is only invoked when neither conclusion is certain. Hence both I and II follow. Option E.

235. Both statements point *away* from Q: P is above Q and R is above Q. Two quantities that are each larger than a common third quantity have no forced relation with each other, so no direct link between P and R can be built.
Counter-examples: with $Q = 1$, $P = 10$, $R = 2$ we get $P > R$; with $Q = 1$, $P = 2$, $R = 10$ we get $P < R$; with $Q = 1$, $P = R = 5$ we get $P = R$. So neither I nor II is individually certain.
Now test complementarity. Conclusion I says $P > R$; conclusion II says $P \leq R$, i.e. $P < R$ or $P = R$. Between them they cover all three possibilities ($>$, $<$, $=$) with no overlap. Exactly one of them must be true, so this is a complementary pair and either I or II follows. Option C.

236. The combined chain is $A = B \geq C \geq D$.
Conclusion I ($B \geq D$): from $B \geq C \geq D$ we get $B \geq D$ directly. I follows.
Conclusion II ($A > D$): the chain from A to D uses only $=$ and $\geq$, so it yields $A \geq D$, not $A > D$. Taking $A = B = C = D = 5$ satisfies every statement while $A = D$, so II is not forced and does not follow.
Since conclusion I is definitely true, no either-or verdict is possible. Also note I and II are not complementary — both are true when $A = 9, B = 9, C = 4, D = 2$. Hence only I follows. Option A.

237. The signs reverse at Q ($P > Q < R$), so no chain can be carried across Q; the relation between P and S is undetermined.
Counter-examples: $P = 10, Q = 1, R = 5, S = 1$ gives $P > S$; $P = 2, Q = 1, R = 10, S = 10$ gives $P < S$; $P = 5, Q = 1, R = 5, S = 5$ gives $P = S$ (check: $5 > 1$, $1 < 5$, $5 \geq 5$ — all statements hold). So neither I nor II is certain.
Are they a complementary pair? Conclusion I covers $P > S$ and conclusion II covers $P < S$, but the third possibility $P = S$ is covered by *neither*. The pair is therefore not exhaustive, so no either-or verdict can be given. This is the classic trap: "$>$ and $<$" is *not* a complementary pair. Hence neither I nor II follows. Option D.

238. A complementary pair must be (i) mutually exclusive — the two cannot both be true, and (ii) exhaustive — at least one must be true. Only three relations are possible between A and B: $A > B$, $A = B$, $A < B$.
Option A: $A > B$ and $A < B$ leave the case $A = B$ uncovered, so the pair is not exhaustive. Rejected.
Option B: $A \geq B$ and $A \leq B$ are exhaustive but not mutually exclusive — when $A = B$ both are true. Rejected.
Option C: $A > B$ covers one case; $A \leq B$ covers the other two ($A = B$ and $A < B$). Together they cover all three cases with no overlap. This is a genuine complementary pair. Accepted.
Option D: $A \geq B$ and $A > B$ overlap heavily (both true when $A = 7, B = 3$) and both fail when $A < B$. Rejected.
Since option C is valid, "None of these" is wrong. Option C.

239. First decode the symbols: @ is $\geq$, # is $>$, $*$ is $<$, % is $=$, & is $\leq$.
The statements become $M \geq N$, $N = O$, $O \leq P$, giving the chain $M \geq N = O \leq P$.
The sign reverses at O, so the relation between M and P cannot be established. Counter-examples: $M = 9, N = O = 5, P = 5$ gives $M > P$; $M = 5, N = O = 5, P = 20$ gives $M < P$; $M = 5, N = O = 5, P = 5$ gives $M = P$.
Conclusion I decodes to $M > P$ and conclusion II decodes to $M \leq P$. Neither is individually certain, but $>$ and $\leq$ split the three possibilities into two non-overlapping groups that together cover everything. Exactly one must hold, so they form a complementary pair. Either I or II follows. Option C.

240. Combine into $A \geq B > C \leq D < E$.
Conclusion III ($A > C$): the path $A \geq B > C$ contains a strict $>$ with no reversal, so $A > C$ definitely follows.
Conclusions I and II concern B versus D. The chain reverses at C (it goes down to C and then up to D), so no relation is forced. Counter-examples: $B = 10, C = 1, D = 2$ gives $B > D$; $B = 2, C = 1, D = 100$ gives $B < D$; $B = 2, C = 1, D = 2$ gives $B = D$. So neither I nor II follows individually.
Conclusion I is $B > D$ and conclusion II is $B \leq D$; these are mutually exclusive and exhaustive, hence a complementary pair, so either I or II follows.
The complete verdict is therefore: III follows, and either I or II follows. Option D.

241. The combined chain is $P \geq Q > R = S \geq T$.
Conclusion I ($P > S$): the path $P \geq Q > R = S$ contains a strict $>$ and never reverses, so $P > S$ is *definitely* true. I follows.
Conclusion II ($P = S$): impossible, since we have just shown $P > S$ always. II does not follow.
Because I is certain, I and II do *not* give an either-or case even though $>$ and $=$ look like a complementary combination. The either-or verdict requires that neither member be individually certain; here one member is always true and the other always false.
Conclusion III ($T < Q$): the path is $Q > R = S \geq T$, which gives $Q > T$, i.e. $T < Q$. III follows.
Hence only I and III follow. Option B.

242. The chain is $J \leq K \leq L \leq M$, which reversed reads $M \geq L \geq K \geq J$, so the derived relation is $M \geq J$.
Conclusion I ($M \geq J$) is exactly the derived relation, so I definitely follows.
Conclusion II ($M > J$): not forced, since $J = K = L = M = 3$ satisfies all statements with $M = J$.
Conclusion III ($M = J$): not forced, since $J = 1, K = 2, L = 3, M = 4$ satisfies all statements with

$M \neq J$.
Neither II nor III is individually certain. But we know $M \geq J$, which means exactly one of "$M > J$" and "$M = J$" must hold, and they cannot hold together. So II and III form a complementary pair, giving an either-or verdict for that pair.
Full verdict: I follows, and either II or III follows. Option B.

243. Translate the statements: $A > B$, $C \geq B$, $C \leq D$. Rearranged, $D \geq C \geq B$ and $A > B$.
Both A and D are tied only to the common lower quantity B, so their mutual relation is undetermined. Counter-examples (fees in Rs.): $A = 1000$, $B = 100$, $C = 100$, $D = 100$ gives $A > D$; $A = 200$, $B = 100$, $C = 100$, $D = 5000$ gives $A < D$; $A = 500$, $B = 100$, $C = 100$, $D = 500$ gives $A = D$. All three cases are possible, so neither conclusion is individually certain.
Conclusion I is "$A \geq D$" and conclusion II is "$A < D$". These two split every possibility exactly once — $\geq$ takes the cases $A > D$ and $A = D$, while $<$ takes the remaining case. They are mutually exclusive and exhaustive, hence a complementary pair. Either I or II follows. Option C.

244. The combined chain is $X \geq Y = Z \geq W > V$, with every sign pointing the same way.
Conclusion I ($X > V$): the path from X to V contains the strict step $W > V$, and all other steps are $\geq$ or $=$ in the same direction. A chain of same-direction links containing at least one strict link yields a strict relation, so $X > V$ definitely follows.
Conclusion II ($X \geq W$): the path $X \geq Y = Z \geq W$ has no strict step, so it yields exactly $X \geq W$, which is what the conclusion claims. II definitely follows.
Both are certain, so this is not an either-or case; note also that I and II are not complementary, since both are simultaneously true whenever $X = 20, Y = Z = 10, W = 5, V = 1$. Hence both conclusions follow. Option E.

245. Decode: @ is $\geq$, # is $>$, $*$ is $<$, % is $=$, & is $\leq$.
The statements become $D \leq E$, $E < F$, $F \geq G$, i.e. the chain $D \leq E < F \geq G$.
The direction reverses at F (the chain rises to F and then falls to G), so nothing is forced between D and G. Counter-examples: $D = 5, E = 5, F = 6, G = 1$ gives $D > G$; $D = 1, E = 1, F = 6, G = 6$ gives $D < G$; $D = 1, E = 1, F = 6, G = 1$ gives $D = G$.
Conclusion I decodes to $D > G$ and conclusion II decodes to $D < G$, so neither is individually certain.
Now test complementarity, which is where this item differs from the usual coded either-or question. A complementary pair must be *exhaustive*: at least one member must hold in every case. Here the third possibility $D = G$ — realised by the counter-example above — is covered by *neither* conclusion. The pair $\{>, <\}$ is mutually exclusive but not exhaustive, so no either-or verdict can be given, even though the chain reverses exactly as it does in a genuine either-or case.
Had conclusion II read $D \,\&\, G$ (i.e. $D \leq G$), the pair would have been complementary and the answer would have been "either I or II". As written, neither conclusion follows. Option C.

246. Decode: @ is $\geq$, # is $>$, $*$ is $<$, % is $=$, & is $\leq$. The statements become $A \geq B$, $B \leq C$, $C > D$, $D = E$, i.e. the chain $A \geq B \leq C > D = E$.
Conclusion III ($C > E$): the path $C > D = E$ runs in one direction and contains a strict $>$, so $C > E$ definitely follows.
Conclusions I and II concern A versus D. The chain reverses at B, so A and D are not linked. Counter-examples: $A = 1, B = 1, C = 10, D = 5, E = 5$ gives $A < D$; $A = 100, B = 1, C = 10, D = 5, E = 5$ gives $A > D$; $A = 5, B = 1, C = 10, D = 5, E = 5$ gives $A = D$. So neither I nor II is individually certain.
Conclusion I decodes to $A > D$ and conclusion II decodes to $A \leq D$. These are mutually exclusive and jointly exhaustive, so they form a complementary pair and give an either-or verdict.
Final verdict: III follows, and either I or II follows. Option C.

247. For "either $P > S$ or $P = S$" to be the correct verdict, the expression must force $P \geq S$ (so that $P < S$ is impossible, making the pair exhaustive) while leaving both $P > S$ and $P = S$ individually possible.
Option A: $P \geq Q \geq R \geq S$ is an unbroken chain of $\geq$, so $P \geq S$ is forced. With $P = Q = R = S = 4$ we get $P = S$; with $P = 9, Q = 6, R = 3, S = 1$ we get $P > S$. Both cases occur, so neither conclusion

is individually certain and the pair is complementary. This is the required expression.
Option B: $P > Q \geq R \geq S$ forces $P > S$ always, so "$P > S$" follows on its own and "$P = S$" is impossible — not an either-or case.
Option C: the sign reverses at Q, so $P < S$ is possible ($P = 1, Q = 1, R = 10, S = 10$). The pair is then not exhaustive, and the correct verdict would be that neither follows.
Option D: again a reversal at Q; $P = 1, Q = 10, R = 10, S = 10$ gives $P < S$, so the pair is not exhaustive.
Since option A works, "None of these" is wrong. Option A.

248. The combined chain is $A \geq B \leq C = D \leq E$. Note that it contains *two* separate either-or situations, one on each side of the reversal point B.
First pair (I and II), A versus C. The chain falls from A to B and then rises to C, so the reversal at B blocks any link. Counter-examples: $A = 10, B = 1, C = D = 2, E = 2$ gives $A > C$; $A = 1, B = 1, C = D = 5, E = 5$ gives $A < C$; $A = 2, B = 1, C = D = 2, E = 2$ gives $A = C$. Neither I nor II is individually certain. Conclusion I is $A > C$ and conclusion II is $A \leq C$: $>$ takes one case, $\leq$ takes the other two, with no overlap. Mutually exclusive and exhaustive, hence a complementary pair — either I or II follows.
Second pair (III and IV), B versus E. Here the path $B \leq C = D \leq E$ runs in one direction, so $B \leq E$ *is* forced. That does not make either conclusion certain, though. III ($B < E$) fails when $B = 1, C = D = 1, E = 1$ (take $A = 1$); IV ($B \geq E$) fails when $B = 1, C = D = 2, E = 3$. Conclusion III is $B < E$ and conclusion IV is $B \geq E$, which are mutually exclusive and exhaustive, so this is a second complementary pair — either III or IV follows.
The forced relation $B \leq E$ is what guarantees the second pair resolves; without it one would still need to check exhaustiveness.
Final verdict: either I or II follows, and either III or IV follows. Option C.

249. Conclusion I ($P < S$): the path is $P \leq Q < R = S$. All links point the same way and one of them ($Q < R$) is strict, so $P < S$ definitely follows.
Conclusions II and III concern Q versus T. The chain rises from Q up to $R = S$ and then falls to T, so the direction reverses at S and no relation between Q and T is forced. Counter-examples (all satisfying $P \leq Q < R = S \geq T > U \geq V$): with $Q = 1$, $R = S = 10$, $T = 1$ we get $Q = T$; with $Q = 1$, $R = S = 10$, $T = 5$ we get $Q < T$; with $Q = 9$, $R = S = 10$, $T = 1$ we get $Q > T$. So neither II nor III is individually certain.
Conclusion II is $Q \geq T$ and conclusion III is $Q < T$. The relation $\geq$ absorbs the cases $Q > T$ and $Q = T$, while $<$ takes the remaining case; the two are mutually exclusive and exhaustive, hence a complementary pair. Either II or III follows.
Final verdict: I follows, and either II or III follows. Option C.

250. Translate: "not less than" is $\geq$, "greater than" is $>$, "not greater than" is $\leq$, "equal to" is $=$. The statements give $A \geq B$, $B > C$, $C \leq D$, $D = E$, i.e. $A \geq B > C \leq D = E$.
The direction reverses at C: the chain falls from B to C and then rises to D. Hence nothing is forced between A and E. Counter-examples (targets in Rs. lakh): $A = 10$, $B = 10$, $C = 1$, $D = E = 1$ gives $A > E$; $A = 2$, $B = 2$, $C = 1$, $D = E = 50$ gives $A < E$; $A = 5$, $B = 5$, $C = 1$, $D = E = 5$ gives $A = E$. All three orderings are consistent with the statements, so neither conclusion is individually certain.
Conclusion I is "$A > E$" and conclusion II is "$A \leq E$". Together they cover the three possible orderings exactly once each, with no overlap, so they form a complementary pair. Either I or II follows. Option C.

251. The combined chain is $M < N \leq O > P \geq Q$.
Conclusion III ($O > Q$): the path $O > P \geq Q$ runs in one direction and contains the strict step $O > P$, so $O > Q$ definitely follows.
Conclusions I and II concern M versus Q. The chain rises from M up to O and then falls to Q, so it reverses at O and nothing is forced. Counter-examples: $M = 5, N = 6, O = 10, P = 9, Q = 1$ gives $M > Q$; $M = 1, N = 2, O = 10, P = 9, Q = 5$ gives $M < Q$; $M = 1, N = 2, O = 10, P = 9, Q = 1$ gives $M = Q$. Neither I nor II is individually certain.

At this point a reversal plus two undecided conclusions tempts one straight into an either-or answer, but the pair must first be checked. Conclusion I is $M \geq Q$ and conclusion II is $M \leq Q$. Together they are certainly *exhaustive* — every case is covered. However, they are *not mutually exclusive*: in the case $M = Q$ above, both I and II are true at once. A complementary pair requires exactly one member to hold, so overlapping conclusions can never form one.
Contrast this with the pair $\{M > Q,\ M \leq Q\}$, which would have been complementary. As written, no either-or verdict is available and neither I nor II follows.
Hence only III follows. Option A.

252. Chain the first two statements: $X \geq Y \geq Z$ gives $X \geq Z$. The third statement says $Z \geq X$. Two quantities satisfying both $X \geq Z$ and $Z \geq X$ must be equal, so $X = Z$. Feeding this back, $X \geq Y \geq Z = X$ forces $Y = X$ as well, so $X = Y = Z$.
Conclusion I ($X = Z$): proved above, so it definitely follows.
Conclusion II ($X > Z$): impossible, since $X = Z$ always.
The pair $\{X = Z,\ X > Z\}$ looks like a complementary pair, and it would give an either-or verdict if all we knew were $X \geq Z$. But the closing statement $Z \geq X$ removes the strict possibility entirely: one member is always true and the other always false, so the either-or verdict does not apply. An either-or answer is correct only when *neither* member can be decided. Hence only I follows. Option A.

Subtopic 2.3.1

253. Draw the diagram. "All clerks are employees" places the whole circle of clerks inside the circle of employees. "Some employees are officers" places the officer circle overlapping the employee circle, but the overlap need not touch the clerk region. Conclusion I: the officers may sit entirely in the part of "employees" that lies outside "clerks", so a link between clerks and officers is only a possibility, never a certainty. Hence I does not follow. Conclusion II: an I-type statement ("Some A are B") converts validly, so "Some employees are officers" immediately gives "Some officers are employees". Hence II follows. Only conclusion II follows.

254. The chain is "All loans → advances" followed by "No advance → deposit". An A-type statement followed by an E-type statement yields a valid E-type conclusion: since the entire loan circle lies inside the advance circle, and the advance circle is completely separate from the deposit circle, the loan circle must also be completely separate from the deposit circle. So conclusion I follows. Conclusion II asserts an overlap between deposits and loans, which directly contradicts conclusion I, hence it is false and cannot follow. A word on the "Either" option: by form, I and II are indeed a complementary pair, because "Some deposits are loans" converts to "Some loans are deposits", which is the exact contradictory of the E-type conclusion I. But the "Either" response is used only when neither conclusion can be settled individually. Here conclusion I is definitely true and conclusion II is definitely false, so the pair is already decided and the "Either" option does not apply. Only conclusion I follows.

255. The middle term is "drafts". From "Some cheques are drafts" and "All drafts are instruments" the standard $I + A$ combination gives "Some cheques are instruments". Conclusion I claims "All cheques are instruments", which is far stronger than what was derived: the cheques lying outside the draft circle are completely unconstrained and may fall outside the instrument circle, so I does not follow. Conclusion II is the valid converse of "Some cheques are instruments", because I-type statements convert. Hence II follows and I does not.

256. Two particular (I-type) statements never yield a definite conclusion, so neither I nor II can be established on its own. Arrangement 1: let the branch–ATM overlap and the ATM–kiosk overlap be the same region; then some branches are kiosks and I is true while II is false. Arrangement 2: let the two overlaps be disjoint parts of the ATM circle with kiosks kept clear of branches; then II is true and I is false. So each conclusion is individually uncertain. However, "Some branches are kiosks" and "No branch is a kiosk" are contradictories on the same pair of terms: exactly one of them must be true in every arrangement. This is the complementary pair I–E, so the correct response is that either I or II follows.

257. Bankers form a subset of graduates; engineers merely overlap graduates. Conclusion I: the engineer–graduate overlap can be located entirely in the portion of the graduate circle outside the banker circle, so no banker need be an engineer. I is a possibility only, not a certainty. Conclusion II: "All graduates are bankers" is the illicit converse of "All bankers are graduates"; an A-type statement converts only to an I-type statement ("Some graduates are bankers"), so II does not follow. Are I and II complementary? No, because they involve different predicates and both can be false simultaneously, so the "Either" option is wrong. Since option D exactly states that neither follows, "None of these" is not required. Neither conclusion follows.

258. This is a pure $A + A$ chain: fixed deposits $\subseteq$ investments $\subseteq$ assets. Transitivity gives directly "All fixed deposits are assets", so conclusion II follows. Conclusion I is the standard converse-by-limitation of II: if the whole fixed deposit circle lies inside the asset circle, then that same region shows assets which are fixed deposits, giving "Some assets are fixed deposits". In the examination convention every named class is taken to be non-empty, so this conversion from A to I is accepted. Both conclusions follow.

259. Focus on the people who are both cashiers and managers; the second statement guarantees at least one such person exists. The first statement says the auditor circle and the cashier circle are completely separate, so every cashier is a non-auditor. Therefore the cashier–manager people are managers who are not auditors, which establishes "Some managers are not auditors". Conclusion I follows. Conclusion II claims the whole manager circle sits inside the cashier circle; the statements only guarantee a partial overlap, and managers outside the cashier circle are permitted, so II does not follow. Only conclusion I follows.

260. The two statements are E-type followed by A-type, and the order matters. Step 1: conclusion II. The trainee class is taken to be non-empty, so pick a trainee. By the second statement that person is a recruit, and by the first statement that person is not a teller, since the teller circle and the trainee circle are wholly disjoint. So at least one recruit is not a teller, and "Some recruits are not tellers" is definitely established. II follows. Step 2: conclusion I reverses the terms and claims a teller outside the recruit circle. Nothing in the statements restricts tellers to any position relative to recruits. Draw a large recruit circle containing both the trainee circle and the whole teller circle, keeping tellers and trainees separate from each other. Both statements hold, yet every teller is a recruit, so I is false in this arrangement and cannot be a certainty. Step 3: I and II have their subject and predicate interchanged, so they are not a complementary pair; in any case II is already definite. Only conclusion II follows.

261. Step 1: the first statement guarantees at least one item that is both a voucher and a receipt. Step 2: the second statement keeps the receipt circle entirely clear of the bill circle, so every receipt is a non-bill. Combining, those voucher–receipt items are vouchers which are certainly not bills; this is exactly the $I + E$ combination that yields a valid O-type conclusion. So conclusion I follows. Step 3: conclusion II needs an overlap between bills and vouchers. Nothing forces this. The vouchers lying outside the receipt circle may or may not be bills, so II is a possibility but not a certainty. Also note I and II are not contradictories (both could be true together), so the "Either" option does not apply. Only conclusion I follows.

262. The statements form the chain mandates $\subseteq$ instructions $\subseteq$ records, so the valid conclusions run only from the smaller class to the larger one. Step 1: conclusion I runs the wrong way. "All records are mandates" would force the outermost circle inside the innermost one. Draw the record circle strictly larger than the instruction circle, with records that are neither instructions nor mandates; both statements still hold and I is false. So I does not follow. Step 2: conclusion II is worse than uncertain, it is definitely false. The mandate class is non-empty and lies inside the record circle, so at least one record is a mandate, which flatly denies "No record is a mandate". Step 3: the pair is A-type and E-type on the same two terms, and A and E are contraries, not contradictories, so they are not a complementary pair; the diagram in Step 1 makes both false at once. Neither conclusion follows.

263. Conclusion II first: the first statement gives at least one item that is both a locker and a vault, and the second statement makes every vault secure. So that item is secure and a locker, giving "Some

secure are lockers". II definitely follows. Conclusion I is a possibility conclusion, which follows if at least one arrangement consistent with the statements makes it true. Nothing in the statements says anything about the lockers lying outside the vault circle; we are free to draw the entire locker circle inside the secure circle, with the vault circle overlapping it. This diagram satisfies both statements and makes all lockers secure, so the possibility is genuine and I follows. Both conclusions follow.

264. The first statement is O-type and the second is A-type, and an O-type premise carries very little joining power. Step 1: conclusion I uses the second statement alone. The whole guarantor circle lies inside the shareholder circle, and the guarantor class is taken to be non-empty, so that region itself shows shareholders who are guarantors. This is the standard A to I conversion by limitation, so "Some shareholders are guarantors" is definitely true and I follows. Step 2: conclusion II. The first statement locates certain sureties outside the guarantor circle, but outside the guarantors is not outside the shareholders, since the shareholder circle is the wider one. Draw the entire surety circle inside the shareholder circle, overlapping the guarantor circle only partly so that some sureties are still non-guarantors. Both statements hold, yet every surety is a shareholder, so II is false in this arrangement and is not a certainty. Step 3: I and II are on different pairs of terms, so no complementary pair arises. Only conclusion I follows.

265. Conclusion II: two I-type premises give no definite conclusion. Keep the laptop–printer overlap and the printer–scanner overlap in separate parts of the printer circle, with the scanner circle clear of the laptop circle; both statements hold while II is false. So II does not follow. Conclusion I: for a possibility we need just one consistent diagram. Draw the scanner circle entirely inside the laptop circle, and let the region where laptops, printers and scanners all meet supply the printer–scanner overlap, while the laptop–printer overlap is also satisfied there. Both statements hold and all scanners are laptops, so the possibility is genuine and I follows. Hence only conclusion I follows. That response is not listed among options A to D, so the correct choice is "None of these".

266. The $I + A$ combination gives only "Some verifiers are processors", and both conclusions go beyond that. Step 1: conclusion I is not certain. The first statement constrains only the verifiers that are officers; the verifiers lying outside the officer circle are free. Push part of the verifier circle outside the processor circle altogether. Both statements still hold, but "All verifiers are processors" is false. Step 2: conclusion II is not certain either. Now draw the whole verifier circle inside the processor circle, letting it overlap the officer circle so that the first statement is satisfied. Both statements hold, and every verifier is a processor, so "Some verifiers are not processors" is false. Step 3: neither conclusion is individually established, so test for a complementary pair. Conclusion I is A-type and conclusion II is O-type on exactly the same subject "verifiers" and the same predicate "processors". A and O are contradictories, so in every diagram precisely one of them is true. This is the complementary pair, and the correct response is that either I or II follows.

267. Step 1: decode the restatement. "Only a few A are B" is read as two facts together, namely "Some A are B" and "Some A are not B". So we have: some gold loans are secured loans, some gold loans are not secured loans, and all secured loans are collateral-backed. Step 2: conclusion I. Take a gold loan that is a secured loan; the second statement makes it collateral-backed. Hence "Some gold loans are collateral-backed" is definitely true and I follows. Step 3: conclusion II is a possibility, so one consistent diagram suffices. Let the collateral-backed circle coincide exactly with the secured loan circle, and draw that circle wholly inside the gold loan circle, leaving a further region of gold loans outside it. Check: some gold loans are secured (the inner region), some gold loans are not secured (the outer region), all secured loans are collateral-backed (the circles coincide). Every collateral-backed item is then a gold loan, so the possibility is genuine and II follows. Both conclusions follow.

268. Step 1: decode "Only performing assets are standard assets". The "Only A are B" form is equivalent to "All B are A", so it means "All standard assets are performing assets". Step 2: conclusion I. Standard assets form a subset of performing assets, and the first statement makes the performing asset circle wholly disjoint from the NPA circle. A subset of a circle disjoint from NPAs is itself disjoint from NPAs, so "No standard asset is an NPA" is definitely true and I follows. Step 3: conclusion II. Nothing forbids the standard asset circle from coinciding with the entire performing asset circle; "All

B are A" permits A and B to be equal. In that diagram there is no performing asset outside the standard assets, so II is not a certainty. Only conclusion I follows.

269. Step 1: conclusion II. The first statement guarantees at least one pension that is also an annuity, and the second statement makes every annuity a non-gratuity. That item is therefore a pension which is certainly not a gratuity, so "Some pensions are not gratuities" definitely follows. Step 2: conclusion I asks whether all pensions could be gratuities. This is the trap. Step 1 has already proved that at least one pension is definitely not a gratuity, in every legal diagram without exception. A possibility conclusion fails when its content is ruled out in all arrangements, so "All pensions being gratuities" is impossible, not possible, and I does not follow. Only conclusion II follows.

270. Step 1: conclusion I. The second premise identifies some bonds lying outside the equity circle, but it does not say which bonds these are. Draw the whole debenture circle inside the region where bonds and equities overlap, and let the bonds outside the equity circle be non-debenture bonds. Both statements hold, yet every debenture is an equity, making I false. So I does not follow. Step 2: conclusion II. Now draw the bond circle entirely outside the equity circle, with the debenture circle inside the bond circle. "All debentures are bonds" holds and "Some bonds are not equities" holds, yet no equity is a bond, making II false. So II does not follow. Step 3: the two conclusions have different subject–predicate pairs and the second diagram above makes both false at once, so they are not a complementary pair and the "Either" option is wrong. Neither conclusion follows.

271. Step 1: "Only a few auditors are inspectors" means both "Some auditors are inspectors" and "Some auditors are not inspectors". Step 2: conclusion I is not certain. Draw the officer circle so that it is contained inside the auditor circle, with the inspector circle inside that officer region; then some auditors are inspectors, some auditors are not inspectors, all inspectors are officers, and yet every officer is an auditor, making I false. Step 3: conclusion II is not certain either. Enlarge the officer circle so that it extends beyond the auditor circle; all the statements still hold, but now some officers are outside the auditor circle and II is false. Step 4: neither is individually established, so compare their forms. "All officers are auditors" is the A-type statement and "Some officers are not auditors" is the O-type statement on the same pair of terms. A and O are contradictories, so exactly one of them holds in every diagram. This is the complementary pair, and the correct response is that either I or II follows. Since option C states this, "None of these" is not required.

272. Step 1: conclusion I. Every debit card is a plastic card by the second statement, and every debit card is a non-credit card by the first statement. Since the class of debit cards is taken to be non-empty, at least one plastic card is not a credit card. Conclusion I definitely follows. Step 2: conclusion II. The only restriction on credit cards is that they must stay out of the debit card circle; nothing keeps them out of the wider plastic card circle. Draw the plastic card circle large, with the debit card circle inside it and the credit card circle also inside it but disjoint from the debit cards. Both statements are satisfied and every credit card is a plastic card, so the possibility is genuine and II follows. Note that I and II are compatible: the debit cards themselves remain plastic non-credit cards in that diagram, so both hold together. Both conclusions follow.

273. Step 1: conclusion I is not certain. Nothing prevents the manager circle from lying entirely inside the teller circle. Draw tellers as the largest circle, managers inside it, and supervisors inside managers; then some tellers are supervisors, all supervisors are managers, and yet every manager is a teller, so "Some managers are not tellers" is false in this arrangement. I does not follow. Step 2: conclusion II is a possibility and needs only one consistent diagram. The tellers that are supervisors are already managers; the remaining tellers are unconstrained, so place them inside the manager circle as well. Both statements still hold and all tellers are managers, so the possibility is genuine and II follows. Only conclusion II follows.

Subtopic 2.3.2

274. The three statements form an unbroken chain of universal affirmatives: debit cards $\subseteq$ wallets $\subseteq$ pouches $\subseteq$ bags. Conclusion I: since every debit card is a wallet, every wallet a pouch and every pouch

a bag, every debit card is a bag. So I follows. Conclusion II: wallets $\subseteq$ bags and the class of wallets is taken to be non-empty, so at least one bag is a wallet, i.e. some bags are wallets (the valid converse of the universal 'All wallets are bags'). So II also follows. Hence both follow.

275. The chain runs advances $\subseteq$ credits $\subseteq$ assets, and only 'some' loans are advances. Conclusion I: the loans lying outside the advance circle are completely unrestricted, so they need not be assets at all; 'All loans are assets' does not follow. Conclusion II: the loans that are advances are credits, and credits are assets, so those particular loans are assets. Therefore at least one asset is a loan, i.e. some assets are loans. Only II follows.

276. Conclusion I: cheques lie entirely inside drafts, and the draft circle is completely separate from the coin circle. A cheque therefore can never be a coin, so 'No cheque is a coin' follows (All + No gives a valid E-type conclusion). Conclusion II: coins are metals, and coins are definitely not drafts, so the metal circle certainly contains members that are outside drafts. Hence 'All metals are drafts' is actually false, not merely doubtful. Only I follows.

277. Conclusion I: some banks are branches, and every branch is an office, so those banks are offices. 'Some + All' in the same direction yields a valid particular conclusion, so I follows. Conclusion II: the link 'Some offices are ATMs' is itself particular, and a particular middle term cannot be chained further. The offices that are ATMs may be entirely different offices from the ones that are banks, so II is only a possibility, not a certainty. Only I follows.

278. Files are wholly inside folders, and no file is a pen. Conclusion I: the files (a non-empty class) are folders that are certainly not pens, so at least some folders are not pens. I follows. Conclusion II: nothing stops the pen circle from overlapping the part of the folder circle that lies outside files. Since that arrangement is consistent with all three statements, 'No pen is a folder' is not certain. Only I follows.

279. Conclusion I: rupees form a sub-part of notes, while only some notes are coins. The rupee portion of the note circle may lie completely outside the coin overlap, so I is not certain. Conclusion II: some notes are coins and every coin is a metal, hence those notes are metals. 'Some + All' gives a valid particular conclusion, so II follows. Only II follows.

280. The managers are drawn from the employee circle, and staff is only a part of that circle. The managers could sit entirely in the non-staff part of employees (then I is false, II is true) or they could overlap staff (then I is true, II is false). So neither is individually certain. However 'Some staff are managers' and 'No staff is a manager' are exact contradictories – one of them must be true in every possible diagram. Hence they form a complementary pair and the answer is 'Either I or II follows'.

281. Conclusion I: some deposits are RDs, and no RD is a loan. Those particular deposits are therefore definitely not loans, so 'Some deposits are not loans' follows. Conclusion II: every loan is a liability, and no loan is an RD (the converse of 'No RD is a loan' is equally valid). The loan class is non-empty, so those loans are liabilities lying outside the RD circle, giving 'Some liabilities are not RDs'. Both conclusions follow.

282. Conclusion I: the register circle definitely contains some files, and no file can be a voucher. Those registers therefore can never become vouchers, so the situation 'All registers are vouchers' is impossible, not merely uncertain. I does not follow. Conclusion II: every voucher is a bill, and no voucher is a file (converse of the third statement). Vouchers are a non-empty class, so they supply bills that are definitely not files. II follows. Only II follows.

283. Trace the first chain: some managers are cashiers, all cashiers are tellers, so some managers are tellers; no teller is a peon, so those managers are certainly not peons. Conclusion I follows. Now the second chain: some peons are guards, and those peons are outside the teller circle because no teller is a peon. Hence those guards are not tellers, giving conclusion II. Both follow.

284. I: cards lie inside chips and the chip circle is disjoint from tokens, so no card can be a token – I follows. II: tokens lie inside coupons and no token is a chip, so the non-empty token class gives

coupons that are definitely not chips – II follows. III: 'Some coupons are vouchers' converts validly to 'Some vouchers are coupons', since a particular affirmative is symmetric – III follows. All three follow.

285. I: some accounts are savings and all savings are deposits, so those accounts are deposits – I follows. II: demat must avoid the current circle only. The deposit circle is larger than the current portion inside it, so the whole demat class can be placed in the deposit region that lies outside current without contradicting any statement – the possibility holds, II follows. III: savings and current are two different sub-regions of deposits and nothing forces them to overlap; they may be kept entirely separate – III does not follow. Hence only I and II follow.

286. I: some kiosks are counters and every counter is a booth, so those kiosks are booths – I follows. II and III: ATMs sit inside kiosks, and the counter overlap is also inside kiosks. The ATM block may be pushed entirely into that overlap (then II is true) or entirely away from it (then III is true), so neither is individually certain. But 'Some ATMs are counters' and 'No ATM is a counter' are contradictories, so exactly one of them must hold in every diagram – they form a complementary pair. Therefore I follows, and either II or III follows.

287. I: folders are cabinets and no folder is a file, so the non-empty folder class gives cabinets that are certainly not files – I follows. II: some cabinets are drawers and all drawers are handles, so some cabinets are handles, which converts to 'Some handles are cabinets' – II follows. III: the file circle is barred only from folders; it may freely overlap the part of the cabinet circle outside folders, so III is not certain. The correct combination is 'Only I and II follow', which is not offered among options A to D, so the answer is 'None of these'.

288. I: some bonds are shares, all shares are equities, and no equity is a debenture; so those bonds are equities and hence definitely not debentures – I follows. II: debentures are a non-empty class contained in securities and excluded from equities, so they supply securities that are not equities – II follows. III: nothing in the statements forbids equities from being securities; the only prohibition is between equity and debenture, and securities is a wider class than debentures. So the entire bond class (including its share-equity part) can be drawn inside securities but outside debentures – the possibility is consistent, III follows. All three follow.

289. I: hampers lie wholly inside baskets, and the basket circle is completely separate from satchels. A hamper therefore can never be a satchel, so 'No hamper is a satchel' follows (All + No gives a valid E-type conclusion). II: 'Some satchels are trunks' guarantees a non-empty group of trunks that are satchels, and no satchel can be a basket. Those trunks are permanently barred from the basket circle, so the arrangement 'All trunks are baskets' is impossible, not merely uncertain – II does not follow. III: the very same trunks-that-are-satchels lie inside crates (all trunks are crates) and outside baskets, so they are crates that are definitely not baskets – III follows. Hence only I and III follow.

290. I: some accountants are analysts and no analyst is a trainee, so those accountants are definitely not trainees – I follows. II and III: auditors lie inside accountants, and the analyst overlap also cuts the accountant circle. The auditor block can be placed wholly inside that overlap (making II true and III false) or wholly outside it (making III true and II false), so neither is individually certain. But 'Some auditors are analysts' and 'Some auditors are not analysts' form a standard complementary pair, so at least one of them must be true. Hence I follows and either II or III follows.

291. I: some passbooks are diaries and all diaries are calendars, so those passbooks are calendars – follows. II: diaries lie inside calendars and the calendar circle is disjoint from posters, so no diary can be a poster – follows. III: some posters are banners and all banners are flags, so some posters are flags, which converts to 'Some flags are posters' – follows. IV: some posters are banners; those posters are outside the calendar circle because no calendar is a poster, so those banners are definitely not calendars – follows. All four conclusions follow.

292. I: some tokens are stamps and no stamp is a seal, so those tokens are certainly not seals – I follows. II: coins lie inside tokens, and part of the token circle is stamp; the whole coin block can be moved into that token-stamp overlap without violating anything, since coins are nowhere required to

avoid stamps – II follows. III: seals form a non-empty class inside marks and excluded from stamps, so some marks are definitely not stamps – III follows. Thus all three follow, and since no option states that, the answer is 'None of these'.

293. I: some tellers are cashiers, all cashiers are clerks, and no clerk is an officer. Those particular tellers therefore can never be officers, so 'All tellers are officers' is impossible – I does not follow. II: some officers are directors; being officers, those directors can never be clerks, so 'All directors are clerks' is also impossible – II does not follow. III: the same officers-who-are-directors are outside the clerk circle, which gives directors that are definitely not clerks – III follows. Only III follows.

294. I: some messages are alerts and every alert is a notification, so those messages are notifications – follows. II: those same messages are notifications, and no notification is a spam, so they are messages that are definitely not spam – follows. III: emails lie inside messages, and the message circle already overlaps alerts; the entire email block can be drawn inside that message-alert overlap, contradicting nothing – the possibility holds, so III follows. IV: nothing compels any email to be spam; in the diagram just described every email is an alert and hence not spam, so IV is not certain. Only I, II and III follow.

Subtopic 2.3.3

295. Draw the diagram: the loan circle lies wholly inside the deposit circle, and the account circle cuts the deposit circle. Conclusion I: to test a possibility we only have to show one consistent arrangement. Shrink the account circle so that it sits entirely inside the loan circle. Since loans are inside deposits, every account is then also a deposit, so the given statement Some deposits are accounts is still satisfied. Nothing is violated, so all accounts being loans is a possibility and I follows. Conclusion II: the overlap between deposits and accounts may lie completely in the part of the deposit circle outside loans, in which case no loan is an account. A definite conclusion must hold in every diagram, so II does not follow. Hence only conclusion I follows.

296. From All ledgers are registers the ledger circle is inside the register circle, and No register is a file makes the register and file circles completely separate. Conclusion I: every ledger is a register, and no register is a file, so no ledger can be a file. I is therefore definitely false and does not follow. Conclusion II: a possibility is rejected only if it contradicts the statements. Saying all files are registers would place the file circle inside the register circle, but the second statement keeps these two circles disjoint, and files do exist because the statement speaks about them. So this arrangement is impossible and II does not follow either. Hence neither conclusion follows.

297. The clerk circle lies inside the officer circle, and the officer and manager circles are entirely separate. Option A: clerks are officers and officers are never managers, so no clerk can be a manager; impossible. Option C: directly contradicts No officer is a manager; impossible. Option D: putting all managers inside officers would create officers that are managers, again contradicting the second statement; impossible. Option B: enlarging the clerk circle until it coincides with the officer circle keeps All clerks are officers true, and the managers still stay outside; nothing is violated, so this is a valid possibility. Since B works, option E is not correct.

298. The wallet and purse circles are disjoint, and the bag circle cuts the purse circle. Option A: a bag lying outside the purse region may well be a wallet, so this can be true. Option B: the bag circle may be enlarged to swallow the whole purse circle while still staying clear of wallets, so this can be true. Option C: the wallet circle may be pushed inside the bag circle in the region outside purses, so this can be true. Option D: the statement Some purses are bags guarantees that at least one bag is a purse, and no purse is a wallet, so that bag is definitely not a wallet. Hence all bags being wallets is impossible. Option D is the one that is ruled out.

299. The bond circle lies inside the security circle, and at least one security lies outside the share circle. Conclusion II: if all securities were shares, then no security would be left outside the shares, which flatly contradicts the given statement Some securities are not shares. So II is impossible and does not follow. Conclusion I: the securities that are not shares need not be bonds. Keep the bond

circle inside the overlap of securities and shares, and let the non-share securities lie in the part of the security circle outside bonds. Both statements remain true, so all bonds being shares is a genuine possibility and I follows. Hence only conclusion I follows.

300. The cheque and draft circles overlap, and the whole draft circle lies inside the payment circle. Option C simply denies the first statement, which fixes at least one item that is both a cheque and a draft; impossible. Options A and B are blocked through that same item: it is a draft, so by the second statement it is a payment, which makes it a cheque that is a payment, so No cheque is a payment cannot hold; and being a draft inside the payment circle, it also rules out Some drafts are not payments, which in any case contradicts All drafts are payments outright. Option D: nothing forces any payment to lie outside the cheque circle. Shrink the payment circle until it coincides with the draft circle, and let that common region lie inside the cheque circle. Then every draft is a payment, some cheques are drafts, and every payment is a cheque. No statement is violated, so this is a valid possibility. Since D works, E is not correct.

301. Both statements are of the Some type, so no definite conclusion linking vouchers and bills can be drawn; the three circles may be arranged in many ways. Conclusion III is therefore not definite, because the voucher circle can be placed so that it touches receipts only in the part that lies outside bills. III does not follow. Conclusion I: slide the whole voucher circle inside the bill circle, letting the voucher and receipt overlap fall inside the receipt and bill overlap. Both statements are satisfied, so I follows. Conclusion II: similarly, the whole bill circle can be pushed inside the voucher circle, with the receipts still cutting both. Both statements are satisfied, so II follows. Hence only conclusions I and II follow.

302. Step 1: the fintech circle lies inside the startup circle; the unicorn circle cuts the startup circle; the unicorn and bank circles are disjoint. Step 2, conclusion I: shift the fintech circle so that it lies entirely inside the region where startups and unicorns overlap. Every fintech is then still a startup, the statement Some startups are unicorns is still true, and no unicorn has been made a bank. Nothing is violated, so the possibility holds and I follows. Step 3, conclusion II: the statement Some startups are unicorns gives at least one item that is both a startup and a unicorn. Since no unicorn is a bank, that item is a startup which is not a bank. This holds in every diagram, so II is a definite conclusion and follows. Hence both conclusions follow.

303. Step 1, conclusion III: Some laptops are tablets gives at least one laptop that is a tablet, and All tablets are gadgets makes that item a gadget. So at least one laptop is definitely a gadget and III follows. Step 2, conclusion I: place the whole laptop circle inside the phone circle. The laptops that are tablets then become items that are laptops, tablets, gadgets and phones together. This is allowed because no statement forbids a tablet from being a phone, and it keeps Some gadgets are phones true. So I follows. Step 3, conclusion II: shrink the phone circle so that it lies wholly inside the tablet circle. Since all tablets are gadgets, those phones are gadgets too, so Some gadgets are phones is still satisfied, and nothing else is disturbed. So II follows. All three conclusions follow.

304. Step 1, conclusion I: the second statement guarantees that at least one coin lies outside the alloy circle. If all coins were alloys, no coin could lie outside, which is a direct contradiction. A stated fact can never be overturned by a possibility, so I does not follow. Step 2, conclusion II: expand the coin circle until it coincides with the metal circle. Then All coins are metals is still true, and the coins that are not alloys are still not alloys. No contradiction arises, so this possibility holds and II follows. Step 3, conclusion III: take a coin that is not an alloy. By the first statement it is a metal. So at least one metal is definitely not an alloy, and III follows in every diagram. Hence only conclusions II and III follow.

305. Step 1: chain the statements. Some rupees are dollars, all dollars are currencies, so some rupees are currencies. No currency is a commodity, so those rupees are not commodities. Conclusion I is therefore definite and follows. Step 2, conclusion III: dollars are currencies and currencies are entirely separate from commodities, so no dollar can ever be a commodity. III is definitely false and does not follow. Step 3, conclusion II: pull the whole rupee circle inside the currency circle, keeping the

rupee and dollar overlap intact. Every statement is still satisfied, and the rupees simply stay away from commodities. So all rupees being currencies is a valid possibility and II follows. Hence only conclusions I and II follow.

306. Step 1: shares lie inside equities, equities are disjoint from bonds, and debentures cut the bond circle. Step 2, conclusion I: the statement Some bonds are debentures fixes at least one debenture that is a bond. That item cannot be an equity, and since every share is an equity, it cannot be a share either. So at least one debenture is permanently barred from being a share, and all debentures being shares is impossible. I does not follow. Step 3, conclusion II: the debentures that lie outside the bond circle are unrestricted and may fall inside the share circle. So it is not certain that no debenture is a share; the claim is only a possibility, not a certainty. II does not follow. Hence neither conclusion follows.

307. Step 1: some managers are directors, and every director is a shareholder, so at least one manager is definitely a shareholder. Step 2, option D: it claims that no manager is a shareholder, which directly contradicts the fact just derived. This can never be true, so D is the invalid one. Step 3, check the rest. Option A: pushing the whole manager circle inside the investor circle is consistent, since the managers who are directors then become shareholders who are investors, which keeps the third statement true. Option B: expanding the manager circle to cover the whole shareholder circle keeps all statements true. Option C: shrinking the investor circle inside the director circle still leaves shareholders who are investors, because directors are shareholders. Option E: directors may all lie inside the investor circle. All four are possible, so only option D fails.

308. Step 1, conclusion I: some deposits are FDs and all FDs are investments, so some deposits are investments. Definite, so I follows. Step 2, conclusion III: those same deposits are investments, and no investment is a loss, so they are not losses. Definite, so III follows. Step 3, conclusion II: draw the deposit circle wholly inside the investment circle, with the FDs kept in the overlap. Every statement stays true, so the possibility holds and II follows. Step 4, conclusion IV: losses must stay outside the investment circle, but the deposit circle may extend beyond the investments, and the loss circle can be placed in that outer part of the deposit circle. The statement Some deposits are FDs is untouched. So IV follows as well. All four conclusions follow.

309. Step 1, conclusion II: the statement Some banks are NBFCs fixes at least one bank that is an NBFC, and no NBFC is a cooperative, so that bank can never be a cooperative. Therefore all banks being cooperatives is impossible and II does not follow. Step 2, conclusion I: PSU banks are only a part of the banks, and nothing forces them into the NBFC region. Place the PSU bank circle in the part of the bank circle away from NBFCs, and let the cooperative circle cover it. Every statement is still satisfied, so the possibility holds and I follows. Step 3, conclusion III: all cooperatives are societies, so cooperatives lie inside societies, and cooperatives are entirely separate from NBFCs. Since cooperatives exist, those societies which are cooperatives are definitely not NBFCs. III follows. Hence only conclusions I and III follow.

310. Step 1, conclusion III: Some frauds are scams gives at least one scam that is a fraud, and No check is a fraud means no fraud is a check. So that scam is definitely not a check, and III is a definite conclusion that follows. Step 2, conclusion II: it asks for all scams to be checks, but the scam identified in step 1 can never be a check. A possibility cannot override an established fact, so II does not follow. Note also that II and III cannot both hold, which is a quick cross-check. Step 3, conclusion I: audits are only partly tied to reviews, and reviews are inside checks. Enlarging the arrangement so that the entire audit circle sits inside the check circle keeps Some audits are reviews true and keeps audits away from frauds. Nothing is violated, so I follows. Hence only conclusions I and III follow.

311. Step 1, conclusion III: the only link to records is through verified items, and nothing says that any verified item is a document. The record circle may be drawn completely apart from the document circle while still containing all verified items. So III is not definite and does not follow. Step 2, conclusion I: the record circle is not confined to the verified items; it may be stretched to cover the entire document circle, including the documents that are not verified. All three statements remain true, so I follows.

Step 3, conclusion II: the documents that are not verified need not be KYC forms. Keep the KYC form circle inside the verified region and let the unverified documents lie in the part of the document circle outside KYC forms. Every statement is satisfied, so II follows. Hence only conclusions I and II follow.

312. Step 1: read the first statement correctly. Only a few insurers are reinsurers means both that some insurers are reinsurers and that some insurers are not reinsurers. Step 2, conclusion II: the insurers who are reinsurers are regulators, and no regulator is an agent, so those insurers are definitely not agents. II follows. Step 3, conclusion I: the insurers who are not reinsurers are still free, and nothing stops them from being regulators. Draw the whole insurer circle inside the regulator circle while keeping the reinsurers as a proper part of it. All statements hold, so I follows. Step 4, conclusion III: agents must stay outside the regulator circle, but the insurer circle has a portion lying outside the regulators, namely some of the non-reinsurer insurers. Place the entire agent circle there. Every statement is still satisfied, so III follows. All three conclusions follow.

313. Step 1, conclusion I: Some borrowers are guarantors fixes at least one borrower who is a guarantor, and No guarantor is a lender means that borrower can never be a lender. So all borrowers being lenders is blocked and I does not follow. Step 2, conclusion II: All lenders are financiers places the lender circle inside the financier circle, and lenders do exist since the statement speaks about them. If all financiers were guarantors, then those lenders would also be guarantors, which contradicts No guarantor is a lender. So II is impossible and does not follow. Both suggested arrangements clash with a given statement, hence neither conclusion follows.

314. Step 1: chain the middle statements. Cashiers are defaulters, defaulters are fraudsters, and no fraudster is honest, so no cashier is honest. Step 2, conclusion II: some tellers are cashiers, and those cashiers are not honest, so at least one teller is definitely not honest. II follows. Step 3, conclusion I: the same teller who is a cashier can never be honest, so all tellers being honest is impossible. I does not follow, and note that I and II directly clash. Step 4, conclusion III: the chain gives cashiers inside defaulters inside fraudsters. Nothing prevents these three circles from coinciding. If every fraudster is a cashier, then cashiers, defaulters and fraudsters are one and the same set, which keeps both universal statements true, and the honest items simply stay outside. So III follows. Hence only conclusions II and III follow.

315. Step 1: Only a few passbooks are statements means some passbooks are statements and some passbooks are not statements. Step 2, conclusion II: the passbooks that are statements cannot be slips, because no statement is a slip. So at least one passbook is definitely not a slip and II follows. Step 3, conclusion III: all slips are tokens, so the slip circle lies inside the token circle, and slips exist. If every token were a statement, then those slips would be statements, contradicting No statement is a slip. So III is impossible and does not follow. Step 4, conclusion I: the token circle is not restricted to slips alone; it may be stretched to cover the whole passbook circle, including the passbooks that are statements, since a statement is allowed to be a token as long as it is not a slip. All statements remain true, so I follows. Hence only conclusions I and II follow.

Subtopic 2.3.4

316. Test each set against both conclusions. Set C: All cheques are drafts + All drafts are ledgers gives the universal chain All cheques are ledgers, so conclusion (I) follows. Some drafts are files + All drafts are ledgers gives Some files are ledgers, whose valid conversion is Some ledgers are files, so (II) follows. Hence C works. Set A fails because a universal followed by a particular (All cheques are drafts + Some drafts are ledgers) yields no definite link, so (I) does not follow. Set B begins with a particular (Some cheques are drafts), and a particular premise can never give a universal conclusion, so (I) fails. Set D gives All drafts are cheques, i.e. drafts are inside cheques; the cheques outside drafts are unaccounted for, so All cheques are ledgers does not follow. Since C satisfies both, 'None of these' is not required.

317. Set D: All accounts are deposits + No deposit is a locker. The whole class of accounts lies inside deposits, and deposits are entirely outside lockers, so no account can be a locker; conclusion (I) follows.

Some keys are lockers converts to Some lockers are keys, so (II) follows. Set A fails because 'Some accounts are deposits' leaves the remaining accounts free to be lockers, so the universal negative (I) is not established. Set B fails on both counts: 'Some deposits are lockers' does not separate accounts from lockers, and 'No locker is a key' actually contradicts (II). Set C says No account is a deposit and All deposits are lockers, so lockers form the wider class here; accounts are kept out of deposits only, and the part of the locker class lying outside deposits may freely overlap accounts. Hence (I) fails in C.

318. Set A: All clerks are officers + All officers are managers is a clean universal chain, so All clerks are managers, giving (II). Some tellers are officers + All officers are managers gives Some tellers are managers, giving (I). Both hold. Set B breaks the chain with 'Some officers are managers': a universal plus a particular in that order yields nothing definite, so (II) fails. Set C starts from 'Some clerks are officers', and a particular premise can never support the universal conclusion All clerks are managers. Set D reverses the first statement to All officers are clerks; clerks now form the wider class, so clerks outside the officer circle need not be managers and (II) fails. Hence only A works.

319. Set C: Some loans are silver + No silver is gold. Those particular loans lie inside silver, and silver is wholly outside gold, so at least those loans are not gold, which is exactly (I). The third statement All gold are metals states (II) directly. Set A replaces the universal negative with 'Some silver are not gold'; two particulars give no valid link, so (I) fails. Set B does establish that no loan is gold, but 'All metals are gold' is the converse of what is wanted, and it only yields Some gold are metals, so (II) fails. Set D gives (I) directly through 'No loan is gold', but its third statement is only Some gold are metals, so the universal (II) fails.

320. Set D: All notes are cash + All cash are coins gives All notes are coins, and a universal affirmative always implies the corresponding particular, so Some notes are coins, i.e. (I). The third statement states (II) word for word. Set A gives (I) correctly but weakens (II) to a particular negative, which is not the universal required. Set B places both notes and coins inside cash without connecting them to each other, so (I) fails. Set C uses 'Some cash are coins', which cannot be chained after a universal to reach notes, so (I) fails; and 'No cash is a bond' only yields Some coins are not bonds, not the universal (II).

321. Set B: All branches are towns + All towns are cities gives All branches are cities, hence Some branches are cities, i.e. (I). Next, towns are wholly inside cities and wholly outside villages, so the towns are cities that are not villages; therefore Some cities are not villages, i.e. (II). Set A links branches and cities only through two particulars about towns, so (I) does not follow. Set C does yield (I), since all cities are towns and all towns are branches, but its last statement 'Some villages are not cities' is not the same proposition as (II) and cannot be converted into it, so (II) fails. Set D uses 'Some cities are towns', which cannot be chained with All branches are towns to link branches and cities, so (I) fails.

322. Conclusion (I) is a universal affirmative, so it can only come from an unbroken chain of universal affirmatives running from debits to credits. Set A breaks the chain with 'Some vouchers are credits', so (I) fails. Set B begins with the particular 'Some debits are vouchers', and no particular premise can support a universal conclusion, so (I) fails. Set C makes vouchers a subset of debits; debits lying outside the voucher circle need not be credits, so (I) fails. Set D places debits and credits separately inside vouchers with no link between them, so (I) fails again. Since no given set produces conclusion (I), the answer is 'None of these'.

323. Conclusion (I) has two halves: Some files are reports, and Some files are not reports. Set C supplies both. Some files are records + All records are reports gives Some files are reports. Also, Some files are not documents, and since All reports are documents, anything that is not a document cannot be a report; so those files are not reports. Both halves hold, and (II) is stated directly. Set A makes all files reports, which contradicts the second half of (I). Set B links files to reports only through two particulars, so Some files are reports does not follow. Set D gives 'All documents are reports', the converse of (II), which yields only Some reports are documents, so (II) fails.

324. Set A works in three steps. Some savings are insurances, and No bank is an insurance, so those

savings are not banks. Since All deposits are banks, whatever is not a bank cannot be a deposit; hence Some savings are not deposits, which is (I). Statement one is (II) itself. Set B weakens the negative to a particular, so no chain reaches savings and (I) fails. Set C reverses the first statement to All banks are deposits, so (II) does not follow (it yields only Some deposits are banks). Set D gives 'No insurance is a saving' and 'Some banks are insurances', which separate savings from those particular banks but establish nothing about deposits, so (I) fails.

325. Set B: All auditors are inspectors + All inspectors are clerks gives All auditors are clerks, hence Some auditors are clerks, i.e. (I). For (II), a possibility conclusion holds unless the statements forbid it; here only 'Some clerks are cashiers' is asserted, and nothing prevents the remaining clerks from also being cashiers, so the possibility survives. Set A breaks the auditor-clerk chain with a particular, so (I) fails. Set C does give (I), but 'No clerk is a cashier' makes it impossible for all clerks to be cashiers, so the possibility in (II) is blocked. Set D places clerks inside inspectors while auditors are wholly outside inspectors, so no auditor can be a clerk and (I) fails.

326. Set D: All laptops are monitors + All monitors are printers gives All laptops are printers, i.e. (I). For (II), monitors form a part of the printer class and no monitor is a scanner, so those printers that are monitors are not scanners; hence Some printers are not scanners. Set A puts laptops and printers separately inside monitors with no chain between them, so (I) fails. Set B breaks the chain with 'Some monitors are printers', so (I) fails, even though its 'No printer is a scanner' would give (II). Set C starts with a particular, and a particular premise cannot yield the universal (I).

327. Set C: borrowers lie inside applicants, applicants lie inside lenders, so all borrowers are lenders. Since no lender is a defaulter, no borrower can be a defaulter, giving (I). 'Some guarantors are defaulters' converts to Some defaulters are guarantors, giving (II). Set A weakens the exclusion to 'Some lenders are not defaulters', so borrowers may still fall among defaulters and (I) fails. Set B reverses the first statement, so borrowers form the wider class; borrowers outside the applicant circle are not covered by the exclusion and (I) fails. Set D separates applicants from lenders but only says Some lenders are defaulters, so the defaulters lying outside lenders may well be borrowers and (I) fails.

328. Conclusion (II) is a universal negative, so it must be earned: the whole complaint class has to be pushed inside some class that is itself wholly outside refunds. Set B does this. All complaints are emails puts every complaint inside the email circle, and No email is a refund keeps that circle entirely clear of refunds; therefore no complaint whatsoever can be a refund, which is (II). Its third statement asserts All queries are complaints, which is (I) word for word. Both hold, so B is the answer. Set A keeps (I) but weakens the exclusion to the particular 'Some emails are not refunds'; the emails that are refunds may be precisely the ones that are complaints, so (II) fails. Set C reverses the containment to All emails are complaints, making complaints the wider class; the complaints lying outside the email circle are untouched by the exclusion and may be refunds, so (II) fails. Set D secures (II) exactly as B does, but its last statement is only the particular 'Some queries are complaints', and a particular can never establish the universal (I). Since B works, 'None of these' is not required.

329. Set A: 'Only a few managers are officers' contains Some managers are officers; combined with All officers are trainees this gives Some managers are trainees, i.e. (I). The third statement is (II) itself. Set B reverses the second statement to All trainees are officers; now Some managers are officers cannot be pushed forward to trainees, so (I) fails, even though (II) does follow there. Set C joins a universal to the particular 'Some officers are trainees', which yields no definite link from managers to trainees, so (I) fails. Set D does give (I), since some officers are managers and all officers are trainees, but its last statement is only the particular 'Some trainees are not directors', which is weaker than the universal (II).

330. Set B: Some vouchers are invoices, and invoices are wholly outside receipts, so those particular vouchers are not receipts, giving (I). For (II), only some vouchers were tied to invoices; the rest of the voucher class is unrestricted, so receipts may all be drawn inside that free part of vouchers. Nothing forbids it, so the possibility holds. Set A links vouchers and receipts through two particulars, so (I) fails. Set C does give (I), but it puts every voucher inside invoices and no invoice is a receipt, so no

voucher can ever be a receipt and the possibility in (II) is destroyed. Set D likewise forces every receipt into invoices while vouchers are wholly outside invoices, so again no receipt can be a voucher and (II) is impossible.

331. Set D: All ledgers are folios + All folios are registers gives All ledgers are registers, i.e. (I). Folios form part of the register class and are wholly outside journals, so those registers are not journals, i.e. (II). 'Some journals are books' is (III) as stated. Set A breaks the ledger-register chain with a particular, so (I) fails; also 'All books are journals' gives only Some journals are books by conversion, which would satisfy (III), but (I) is already lost. Set B makes folios a subset of ledgers, so ledgers outside folios need not be registers and (I) fails. Set C gives (I) and (II) but replaces (III) with 'Some books are not journals', a negative that cannot yield the affirmative (III).

332. Set A: 'Only staff are cashiers' unpacks to All cashiers are staff, which is (I). 'Only a few staff are visitors' unpacks to Some staff are visitors and Some staff are not visitors, the second half being exactly (II). 'Some visitors are guards' is (III). Set B unpacks to All staff are cashiers, the reverse of (I), which yields only Some cashiers are staff, so (I) fails. Set C asserts All staff are visitors, which directly contradicts (II). Set D unpacks the second statement as Some visitors are staff and Some visitors are not staff; neither half tells us about staff who are not visitors, so (II) fails, even though (III) follows from All guards are visitors.

333. Set C: cheques lie inside tokens and tokens are wholly outside coupons, so no cheque is a coupon, giving (I). Since no token at all is a coupon, every coupon lies outside tokens, so certainly Some coupons are not tokens, giving (II). And All cheques are tokens is actually asserted, so the possibility in (III) is not merely open but realised. Set A weakens the exclusion to a particular negative, so cheques may still overlap coupons and (I) fails. Set B does give (I), because coupons sit inside tokens while cheques sit outside tokens, but then every coupon is a token, so (II) is contradicted. Set D reverses the containment to All tokens are cheques; cheques outside the token circle are not excluded from coupons, so (I) fails.

334. Set B: Some rupees are euros + All euros are dollars gives Some rupees are dollars, i.e. (I). 'All dollars are notes' is (II) as stated. 'No note is a coin' means the entire note class stands outside coins, so certainly Some notes are not coins, i.e. (III). Set A reverses (II) to All notes are dollars, which yields only Some dollars are notes, so (II) fails. Set C uses 'Some euros are dollars' after a universal, which gives no link from rupees to dollars, so (I) fails. Set D gives Some euros are rupees and All dollars are euros; both dollars and rupees sit inside euros without touching each other, so (I) fails.

335. Conclusion (I) needs both Some applications are approvals and Some applications are not approvals. Set D states the first half outright. For the second half, Some applications are not sanctions, and since All approvals are sanctions, anything outside sanctions is outside approvals; so those applications are not approvals. Thus (I) holds. (II) and (III) are stated directly. Set A asserts All applications are approvals, contradicting the second half of (I). Set B reverses (II) to All sanctions are approvals, which gives only Some approvals are sanctions, so (II) fails. Set C gives Some applications are approvals by conversion and satisfies (II) and (III), but 'All applications are sanctions' provides no application outside the approval class, so the second half of (I) fails.

336. Set A: passbooks lie inside records and records are wholly outside slips, so no passbook is a slip, whose conversion is No slip is a passbook, giving (III). Next, Some statements are slips, and slips are never passbooks, so those statements are not passbooks, giving (I). For (II), some statements are already slips and the remaining statements are unrestricted, so they may all be drawn inside slips; the possibility is open. Set B reverses the containment to All records are passbooks, so passbooks outside the record circle may be slips and (III) fails. Set C weakens the exclusion to 'Some records are not slips', which does not separate passbooks from slips, so (III) fails. Set D asserts No statement is a slip, which both destroys the possibility in (II) and leaves (I) underivable.

Subtopic 2.4.1

337. Compare BANK with CBOL letter by letter: $B(2) \to C(3)$, $A(1) \to B(2)$, $N(14) \to O(15)$, $K(11) \to L(12)$. Every letter moves $+1$ step forward. Apply the same rule to LOAN: $L(12) \to M(13)$, $O(15) \to P(16)$, $A(1) \to B(2)$, $N(14) \to O(15)$. The code is MPBO. Option B changes the last letter wrongly, option C uses -1 instead of $+1$, option D interchanges the second and fourth letters of the correct code.

338. Check the given pair: $C(3) \to E(5)$, $A(1) \to C(3)$, $S(19) \to U(21)$, $H(8) \to J(10)$. Each letter moves $+2$ steps forward. For DEBIT: $D(4) \to F(6)$, $E(5) \to G(7)$, $B(2) \to D(4)$, $I(9) \to K(11)$, $T(20) \to V(22)$, giving FGDKV. Option D applies -2, and options B and C each contain one letter shifted by the wrong amount.

339. From RUPEE to QTODD: $R(18) \to Q(17)$, $U(21) \to T(20)$, $P(16) \to O(15)$, $E(5) \to D(4)$, $E(5) \to D(4)$. Each letter moves -1 step backward. For PAISA: $P(16) \to O(15)$, $A(1) \to Z(26)$ because moving one step back from A wraps to Z, $I(9) \to H(8)$, $S(19) \to R(18)$, $A(1) \to Z(26)$. The code is OZHRZ. Option B applies $+1$, option C forgets the wrap-around on the last A, option D shifts I by two steps.

340. From MONEY to KMLCW: $M(13) \to K(11)$, $O(15) \to M(13)$, $N(14) \to L(12)$, $E(5) \to C(3)$, $Y(25) \to W(23)$. Every letter moves -2 steps. For FUNDS: $F(6) \to D(4)$, $U(21) \to S(19)$, $N(14) \to L(12)$, $D(4) \to B(2)$, $S(19) \to Q(17)$, giving DSLBQ. Option D applies $+2$, while B and C each mis-shift a single letter.

341. From TRADE to WUDGH: $T(20) \to W(23)$, $R(18) \to U(21)$, $A(1) \to D(4)$, $D(4) \to G(7)$, $E(5) \to H(8)$. Each letter moves $+3$ steps forward. For PROFIT: $P(16) \to S(19)$, $R(18) \to U(21)$, $O(15) \to R(18)$, $F(6) \to I(9)$, $I(9) \to L(12)$, $T(20) \to W(23)$. The code is SURILW. Option C shifts O by only two steps, option B mis-shifts the last letter, and option D interchanges the first and third letters.

342. From DEPOSIT to EFQPTJU each letter moves $+1$ step forward, so to decode we must move each letter of UPLFO one step backward: $U(21) \to T(20)$, $P(16) \to O(15)$, $L(12) \to K(11)$, $F(6) \to E(5)$, $O(15) \to N(14)$. The original word is TOKEN. TONER would be coded UPOFS, TAKEN would be UBLFO and TOKER would be UPLFS, so none of the other options fits.

343. Apply $+4$ to each option. RATE: $R \to V$, $A \to E$, $T \to X$, $E \to I$, so VEXI is correct. LOSS: $L \to P$, $O \to S$, $S \to W$, $S \to W$, so PSWW is correct. CHIP: $C \to G$, $H \to L$, $I \to M$, $P \to T$, so GLMT is correct. FUND: $F \to J$, $U(21) \to Y(25)$, $N \to R$, $D(4) \to H(8)$, which gives JYRH and not JYRG, so this pair is wrong. GAIN: $G \to K$, $A \to E$, $I \to M$, $N \to R$, so KEMR is correct.

344. Verify the rule on BRANCH. Reversing gives HCNARB, and moving each letter $+1$ gives $H \to I$, $C \to D$, $N \to O$, $A \to B$, $R \to S$, $B \to C$, that is IDOBSC, which matches. Now for CREDIT: reversing gives TIDERC. Applying $+1$: $T \to U$, $I \to J$, $D \to E$, $E \to F$, $R \to S$, $C \to D$, giving UJEFSD. Option C is only the reversal without the shift, option D reverses and shifts backward, and option B mis-shifts the last letter.

345. Check MARKET: $M(1st) \to O$, $A(2nd) \to Y$ since one step back from A is Z and two steps back is Y, $R(3rd) \to T$, $K(4th) \to I$, $E(5th) \to G$, $T(6th) \to R$, giving OYTIGR as stated. For BUDGET: $B(1st) + 2 = D$, $U(2nd) - 2 = S$, $D(3rd) + 2 = F$, $G(4th) - 2 = E$, $E(5th) + 2 = G$, $T(6th) - 2 = R$. The code is DSFEGR. Option D reverses the rule, moving the odd positions two steps backward and the even positions two steps forward ($B - 2 = Z$, $U + 2 = W$, $D - 2 = B$, $G + 2 = I$, $E - 2 = C$, $T + 2 = V$); option C interchanges the last two letters and option B mis-shifts the last letter.

346. Verify with LOAN: $L(12) + 1 = M(13)$, $O(15) + 2 = Q(17)$, $A(1) + 3 = D(4)$, $N(14) + 4 = R(18)$, giving MQDR as stated. Now for CASH: $C(3) + 1 = D(4)$, $A(1) + 2 = C(3)$, $S(19) + 3 = V(22)$, $H(8) + 4 = L(12)$. The code is DCVL. Option D moves each letter backward by its position, option C uses $+2$ on the second letter incorrectly as B, and option B mis-shifts the last letter.

347. First confirm the rule on BANK. Opposite letters: $B(2) \to Y(25)$, $A(1) \to Z(26)$, $N(14) \to M(13)$, $K(11) \to P(16)$, giving YZMP. Moving each one step forward gives ZANQ, which matches. Now FUND: opposite letters are $F(6) \to U(21)$, $U(21) \to F(6)$, $N(14) \to M(13)$, $D(4) \to W(23)$, that is UFMW. Moving each +1 gives $U \to V$, $F \to G$, $M \to N$, $W \to X$, so the code is VGNX. Option B stops after the first step; option D mixes the directions, moving the first, second and fourth letters of UFMW backward but the third forward ($U-1=T$, $F-1=E$, $M+1=N$, $W-1=V$); and option C mis-shifts the last letter.

348. LOAN has 4 letters, so each letter moves +4: $L(12) \to P(16)$, $O(15) \to S(19)$, $A(1) \to E(5)$, $N(14) \to R(18)$, confirming PSER. TRANSFER has 8 letters, so each letter moves +8 with wrap-around past Z: $T(20)+8 = 28-26 = 2 = B$, $R(18)+8 = 26 = Z$, $A(1)+8 = 9 = I$, $N(14)+8 = 22 = V$, $S(19)+8 = 27-26 = 1 = A$, $F(6)+8 = 14 = N$, $E(5)+8 = 13 = M$, $R(18)+8 = 26 = Z$. The code is BZIVANMZ. Option D moves backward by 8, and options B and C each break the wrap-around at one letter.

349. From CHEQUE to FKHTXH: $C \to F$, $H \to K$, $E \to H$, $Q \to T$, $U \to X$, $E \to H$, a uniform shift of +3. The second pair confirms it: $B \to E$, $A \to D$, $N \to Q$, $K \to N$, $E \to H$, $R \to U$. Applying +3 to LOCKER: $L(12) \to O(15)$, $O(15) \to R(18)$, $C(3) \to F(6)$, $K(11) \to N(14)$, $E(5) \to H(8)$, $R(18) \to U(21)$, giving ORFNHU. Option D applies -3, option C shifts C by only two steps and option B mis-shifts the last letter.

350. Check LEDGER. First half LED becomes $L \to N$, $E \to G$, $D \to F$, that is NGF. Second half GER becomes $G \to E$, $E \to C$, $R \to P$, that is ECP. Together NGFECP, as stated. For PROFIT the first half is PRO: $P(16) \to R(18)$, $R(18) \to T(20)$, $O(15) \to Q(17)$. The second half is FIT: $F(6) \to D(4)$, $I(9) \to G(7)$, $T(20) \to R(18)$. The code is RTQDGR. Option D reverses the rule, moving the first half two steps backward and the second half two steps forward ($PRO \to NPM$ and $FIT \to HKV$); option C leaves the third letter O unshifted and option B mis-shifts the final letter.

351. Verify on BANK: $B(2)+1 = C$, $A(1)+2 = C$, $N(14)+3 = Q$, $K(11)+4 = O$, giving CCQO, and reversing gives OQCC as stated. Now DEPOSIT, which has seven letters: $D(4)+1 = E(5)$, $E(5)+2 = G(7)$, $P(16)+3 = S(19)$, $O(15)+4 = S(19)$, $S(19)+5 = X(24)$, $I(9)+6 = O(15)$, $T(20)+7 = 27-26 = 1 = A$. This gives EGSSXOA, and reversing the whole string gives AOXSSGE. Option C omits the reversal, option D reverses two middle letters wrongly and option B mis-shifts one letter.

352. Confirm the rule on MARKET: consonant $M \to O$, vowel $A(1) \to Z(26)$ by wrap-around, consonant $R \to T$, consonant $K \to M$, vowel $E \to D$, consonant $T \to V$, giving OZTMDV. For CUSTOMER, take the letters one by one: consonant $C(3) \to E(5)$, vowel $U(21) \to T(20)$, consonant $S(19) \to U(21)$, consonant $T(20) \to V(22)$, vowel $O(15) \to N(14)$, consonant $M(13) \to O(15)$, vowel $E(5) \to D(4)$, consonant $R(18) \to T(20)$. The code is ETUVNODT. Option D wrongly treats U as a consonant, option C mis-shifts the vowel E and option B mis-shifts the final consonant.

353. Verify with AUDIT: $A+1 = B$, $U+2 = W$, $D+3 = G$, $I+1 = J$, $T+2 = V$, giving BWGJV. Verify with LEDGER: $L+1 = M$, $E+2 = G$, $D+3 = G$, $G+1 = H$, $E+2 = G$, $R+3 = U$, giving MGGHGU. Both match, so the cycle is confirmed. For PROFIT: $P(16)+1 = Q(17)$, $R(18)+2 = T(20)$, $O(15)+3 = R(18)$, $F(6)+1 = G(7)$, $I(9)+2 = K(11)$, $T(20)+3 = W(23)$. The code is QTRGKW. Option D applies the same pattern backward, option C shifts the fifth letter by one step short and option B mis-shifts the last letter.

354. To decode, first reverse BUXVDHUW, which gives WUHDVXUB. Then move each letter three steps backward: $W(23) \to T(20)$, $U(21) \to R(18)$, $H(8) \to E(5)$, $D(4) \to A(1)$, $V(22) \to S(19)$, $X(24) \to U(21)$, $U(21) \to R(18)$, $B(2) \to Y(25)$ by wrap-around. The word is TREASURY. Checking the rule on BANK confirms it: $B \to E$, $A \to D$, $N \to Q$, $K \to N$ gives EDQN, and reversing gives NQDE. TREASURE would end in H reversed to the front, SECURITY and MEASURED give entirely different strings, so only option A fits.

355. In BOND the first letter is B, whose position is 2, so every letter moves +2: $B \to D$, $O \to Q$, $N \to P$, $D \to F$, giving DQPF as stated. In DEBIT the first letter is D, whose position is 4, so every

letter moves +4: $D(4) \to H(8)$, $E(5) \to I(9)$, $B(2) \to F(6)$, $I(9) \to M(13)$, $T(20) \to X(24)$. The code is HIFMX. Option D moves backward by 4, option C shifts the first letter by only three steps and option B mis-shifts the final letter.

356. Verify on LOAN: $L(1st) + 3 = O$, $O(2nd) - 3 = L$, $A(3rd) + 3 = D$, $N(4th) - 3 = K$, giving OLDK, and reversing gives KDLO as stated. For BRANCH: $B(1st) + 3 = E$, $R(2nd) - 3 = O$, $A(3rd) + 3 = D$, $N(4th) - 3 = K$, $C(5th) + 3 = F$, $H(6th) - 3 = E$. This gives EODKFE, and reversing the whole string gives EFKDOE. Option B stops before the reversal, option D mis-shifts the fifth letter of the answer, giving P in place of O, and option C mis-shifts the last letter.

357. Confirm the rule on LOAN. Three letters follow L, so $L(12) + 3 = O(15)$; two letters follow O, so $O(15) + 2 = Q(17)$; one letter follows A, so $A(1) + 1 = B(2)$; no letter follows N, so N stays as N. This gives OQBN, as stated. Now apply the same rule to CREDIT, in which five letters follow C, four follow R, three follow E, two follow D, one follows I and none follows T: $C(3) + 5 = H(8)$, $R(18) + 4 = V(22)$, $E(5) + 3 = H(8)$, $D(4) + 2 = F(6)$, $I(9) + 1 = J(10)$, $T + 0 = T$. The required code is HVHFJT. Option A mis-shifts the final letter, which must remain unchanged; option B leaves the fifth letter unshifted; option C shifts the third letter by only two steps; option D applies the same counts backward instead of forward. Since HVHFJT is not listed, the answer is None of these.

Subtopic 2.4.2

358. Compare the statements that share a word. Statements 1 and 2 have exactly one word in common, namely 'loan'; their codes have exactly one code in common, namely 'ti'. Hence loan = ti. As a cross-check: statements 1 and 3 share only 'bank' and share only the code 'sa', so bank = sa; statements 2 and 3 share only 'is' and share only 'ka', so is = ka. That leaves mo = gives, du = costly, pe = safe. Every code is thus fixed and only 'ti' can stand for 'loan', so option B is the unique correct choice.

359. The two sentences have exactly one word in common: 'signs'. Their code sets {pt, kr, sn} and {kr, mn, dl} have exactly one code in common: 'kr'. A word must always be replaced by the same code, so the shared word must correspond to the shared code, giving signs = kr. Because the overlap is a single word matched to a single code, there is no ambiguity, so option E is wrong. The codes pt and sn belong to 'manager' and 'cheque' in some order, and mn, dl belong to 'clerk' and 'form' in some order; none of them can be 'signs'.

360. The code 'vi' occurs in statements 1 and 2 only, so the word it represents must occur in both of those statements and not in statement 3. The only word common to statements 1 and 2 is 'money', so vi = money. Confirming the rest: 'ja' occurs in statements 1 and 3, whose only common word is 'deposits', so ja = deposits, which rules out option A. In statement 2 the remaining codes 'to' and 'ru' stand for 'is' and 'safe' in some order, so neither can be 'vi', ruling out options C and D.

361. Take the statements in pairs. Statements 1 and 2 share only 'payment' and share only the code 'ka', so payment = ka. Statements 1 and 3 share only 'card' and share only 'mi', so card = mi. Statements 2 and 3 share only 'date' and share only 'ru', so date = ru. The leftovers are credit = zo, due = pe, fixed = ta. Therefore 'card payment' = mi ka, option B. Option A is 'credit card', option C is 'payment date', option D is 'card date', so none of them can also be correct.

362. The only word common to the two sentences is 'open', and the only common code is 'go', so open = go. Removing it from the first sentence leaves the words 'cash' and 'counter' matched to the codes 'de' and 'fi', but nothing in the data tells us which way round the pairing goes: both cash = de, counter = fi and cash = fi, counter = de are fully consistent with the given information. Hence options A and B are each only possibly correct, not certainly correct. Option C is 'open' and option D belongs to 'bank' or 'account'. The code for 'cash' therefore cannot be determined.

363. The two sentences share two words, 'loan' and 'quickly', and share exactly two codes, 'mo' and 'ti'. So the pair {loan, quickly} corresponds to the pair {mo, ti} in some order. The only word of the first sentence outside that shared pair is 'sanctioned', and the only code of the first sentence outside

{mo, ti} is 're'. Hence sanctioned = re. By the same elimination in the second sentence, repay = ne, so option D is wrong; options A and B stand for 'loan' or 'quickly'.

364. Statements 1 and 2 share only 'early' and share only the code 'ro', so early = ro. Statements 2 and 3 share only 'walk' and share only 'fu', so walk = fu. Statements 1 and 3 share only 'branch' and share only 'sim', so branch = sim. In statement 2 the words are early, morning and walk with codes ro, dip and fu; since early = ro and walk = fu, the remaining word 'morning' must be 'dip'. The other options are already used: ro = early, fu = walk, sim = branch, and ke = to from statement 3.

365. Work pair by pair. Statements 1 and 2 share only 'ledger' and only the code 'pe', so ledger = pe. Statements 2 and 3 share only 'profit' and only 'lo', so profit = lo. Statements 3 and 4 share only 'is' and only 'za', so is = za. Statements 1 and 4 share only 'manager' and only 'ho', so manager = ho. The leftovers now follow: in statement 1, checks = ta; in statement 2, shows = di; in statement 3, high = fi; in statement 4, busy = nu. Hence manager shows high profit = ho di fi lo. Option B wrongly uses pe (ledger), option C uses za (is), option D uses ta (checks) instead of ho.

366. Match the statements pairwise. Statements 1 and 2 share only 'income' and only 'pi', so income = pi. Statements 1 and 3 share only 'return' and only 'te', so return = te. Statements 1 and 4 share only 'file' and only 'sa', so file = sa. Statements 2 and 3 share only 'high' and only 'ka', so high = ka. Statements 2 and 4 share only 'tax' and only 'mu', so tax = mu. Statements 3 and 4 share only 'the' and only 'ne', so the = ne. The remaining codes follow: your = lo, is = de, amount = bo, form = ju. Therefore bo de ka = amount is high. Option B would be ka pi mu, option C would be ne bo ka, option D would be te de ka, so none of them fits.

367. Statements 1 and 3 share only 'for' and only the code 'fm', so for = fm; hence in statement 1 the leftover apply = zt. Statements 2 and 3 share only 'free' and only 'sk', so free = sk; hence in statement 2 the leftover is = dl. Statements 1 and 2 share the two words 'new' and 'card' and share the two codes 'qr' and 'bn', which fixes the pair but not the individual matching: both new = qr, card = bn and new = bn, card = qr are consistent with all three statements. So options A and B are each merely possible. Options C and D are already assigned to 'apply' and 'is'. The code for 'card' cannot be determined.

368. Statements 1 and 3 share only 'new' and only the code 'ta', so new = ta. Statements 2 and 3 share only 'interest' and only 'mi', so interest = mi; the leftover in statement 2 is earns = ro. Statements 1 and 2 share exactly the two words 'savings' and 'account' and exactly the two codes 'gi' and 've'. Individually we cannot say which of gi, ve is 'savings', but as an unordered pair the two-word phrase 'savings account' must be coded 'gi ve', and that is what the question asks for. Option B is 'open new', option C is 'earns interest', option D is 'new interest', so A alone is correct.

369. The everyday currency of India is really the rupee, so we need the name that this language gives to the rupee. The statement 'rupee is called dollar' means that whenever a speaker of that language refers to the real rupee, the word used is 'dollar'. Hence the answer is 'dollar'. Option E is the real-world name, which is precisely the name the language does not use. Option B, 'euro', is what the real dollar is called; option C, 'yen', is what the real euro is called; option D, 'pound', is what the real yen is called. Only one hop from 'rupee' is required, so option A is correct.

370. Statements 1 and 2 share only 'strong' and only the code 'ne', so strong = ne. Statements 1 and 3 share only 'is' and only 'ta', so is = ta. Statements 2 and 3 share only 'policy' and only 'ri', so policy = ri. The leftovers give bank = ku in statement 2 and clear = bo in statement 3, while 'cash' and 'flow' remain tied to jo and mi in some order. Now decode: ku = bank, ta = is, bo = clear, so 'ku ta bo' is 'bank is clear'. Option B needs jo or mi for 'cash'; option C would be ne ku ri; option D would be ri ta bo. Hence only option A works.

371. Take the statements in pairs. Statements 1 and 2 share only 'policy' and share only the code 'ds', so policy = ds. Statements 1 and 3 share only 'insurance' and share only 'pv', so insurance = pv. Statements 1 and 4 share only 'agent' and share only 'fk', so agent = fk. The only word of statement 1 left over is 'sells' and the only code left over is 'rm', so sells = rm. Statements 3 and 4 share only

'claim' and share only 'lw', so claim = lw. All four required words are therefore fixed and agent sells insurance claim = fk rm pv lw. Option B keeps ds, which is 'policy', in place of the code for 'claim'. Option C uses cj, which is one of 'settled' or 'fast', in place of 'insurance'. Option D uses gy, which is one of 'visits' or 'office', in place of 'sells'. The remaining codes bt, qn, hz stay tied to 'renewal', 'due' and 'soon' in an unknown order, but none of them is needed here, so option A is the unique answer.

372. Take intersections. Statements 1 and 2 share only 'housing' and only the code 'se', so housing = se. Statements 1 and 4 share only 'bank' and only 'pi', so bank = pi. Statements 2 and 3 share only 'rates' and only 'qa', so rates = qa. Statements 2 and 4 share only 'are' and only 've', so are = ve; the leftover in statement 2 is high = mo. Statements 1 and 3 share the two words 'the' and 'loan' and the two codes 'na' and 'tu', which need not be separated here; the leftover in statement 1 is then sanctioned = ko, and in statement 3 fell = dl. So bank sanctioned high rates = pi ko mo qa. Option B uses ve (are) for 'rates', option C uses na (the/loan) for 'sanctioned', option D uses se (housing) for 'bank'.

373. Each rule 'X is called Y' means that the real item X is spoken of as Y. To find what the spoken word 'balance' refers to, we must read the rules backwards and find the X whose name Y is 'balance'. The rule 'credit is called balance' is the only one whose right-hand side is 'balance', so the speaker means the real credit. Option C is the trap of reading the rule forwards: the real balance is called 'statement', not 'balance'. Option A is wrong because the real debit is spoken of as 'credit'; option D is wrong because the real statement is spoken of as 'passbook'; option E is wrong because the real passbook is spoken of as 'debit'.

374. Statements 1 and 2 share the two words 'our' and 'bank' and the two codes 'lo' and 'pu', so lo and pu are tied to that pair but cannot be separated; option A therefore fails. Statements 1 and 3 share only 'trust' and only 'di', so trust = di. Statements 1 and 4 share only 'customers' and only 'ma', so customers = ma. Statements 2 and 3 share only 'is' and only 'ta', so is = ta. Statements 2 and 4 share only 'growing' and only 're', so growing = re, which settles option D. Statements 3 and 4 have no word and no code in common. In statement 3 the leftovers 'very' and 'important' remain tied to se and ni in unknown order, and in statement 4 'need' and 'care' remain tied to bo and ka. So options B, C and E are undetermined and only 're' is certain.

375. Count the letters of each given word. CASH has 4 letters and its code is 9; CHEQUE has 6 letters and its code is 13; DEPOSIT has 7 letters and its code is 15. Test the pattern code = $2 \times$ (number of letters) $+ 1$: for CASH, $2 \times 4 + 1 = 9$; for CHEQUE, $2 \times 6 + 1 = 13$; for DEPOSIT, $2 \times 7 + 1 = 15$. The rule fits all three words. WITHDRAWAL has the letters W, I, T, H, D, R, A, W, A, L, that is 10 letters, so its code is $2 \times 10 + 1 = 21$. Option B, 20, comes from forgetting the $+1$, and option D, 22, from doubling 11; neither matches the verified rule.

376. Statements 1 and 2 share only 'loss' and only the code 'hr', so loss = hr. Statements 1 and 3 share only 'account' and only 'jn', so account = jn. Statements 2 and 3 share only 'due' and only 'kp', so due = kp. Statements 2 and 4 share only 'fraud' and only 'mn', so fraud = mn; the leftover in statement 2 is then to = lq. Statements 3 and 4 share only 'today' and only 'tv', so today = tv; the leftover in statement 3 is opened = rs. Assembling, account opened due to fraud = jn rs kp lq mn. Option B replaces 'fraud' by hr (loss), option C replaces 'opened' by tv (today), option D replaces 'account' by hr (loss).

377. First identify the real product. Depositing a fixed instalment every month for a fixed term and taking the maturity value at the end is a recurring deposit; a fixed deposit takes a single lump sum, so the phrase 'Rs. 5,000 every month' rules it out. Now translate: the rule 'recurring is called salary' says the real recurring account is spoken of as 'salary'. Hence the answer is option D. Option C is the real-world name, which this language does not use for it; option B is the trap set by the words 'fixed' and 'every month' in the question; option A is what the real saving account is called, and option E is what the real salary account is called.

378. Statements 1 and 3 share only 'manager' and only the code 'ki', so manager = ki. Statements 2 and 3 share only 'training' and only 'rs', so training = rs. Statements 1 and 2 share the two words

'good' and 'staff' and the two codes 'jo' and 'no', which alone is not enough; but statements 1 and 4 share only 'staff' and only 'no', so staff = no and therefore good = jo. The leftovers now give guides = lm in statement 1 and need = pq in statement 2. So good staff need training = jo no pq rs. Comparing the choices: A uses ki (manager) in place of rs, B uses ki in place of no, C uses lm (guides) in place of pq, D uses tu (from 'makes' or 'perfect') in place of rs. The correct code is not listed, so the answer is 'None of these'.

Subtopic 2.4.3

379. Read the code of each digit of 4829 from left to right using the given list. The list pairs 1 with %, 2 with @, 3 with #, 4 with *, 5 with $, 6 with ?, 7 with &, 8 with !, 9 with + and 0 with =. So $4 \to *$, $8 \to !$, $2 \to @$ and $9 \to +$. Writing these in the same order as the digits gives * ! @ +. Option B reverses the last two symbols, option C reverses the first two and option D misplaces @, so only the first option preserves the digit order.

380. Invert the given pairing: % stands for 4, # stands for 9, = stands for 0 and $ stands for 7. Taking the symbols in the printed order % # = $ gives the digits 4, 9, 0, 7, i.e. the number 4907. Options B, C and D contain the same four digits but in orders that do not match the symbol sequence, so they are wrong.

381. In BANK, B is the 2nd letter of the alphabet, A the 1st, N the 14th and K the 11th, and the code is exactly 2-1-14-11. Hence each letter is simply replaced by its serial position in the English alphabet. For LOAN: L is the 12th letter, O the 15th, A the 1st and N the 14th. So the code is 12-15-1-14. Option B interchanges the codes of O and N, option C uses 11 (K) instead of 12 (L) and option D uses 13 (M) instead of 14 (N).

382. First find the rule. The alphabet positions of C, A, S and H are 3, 1, 19 and 8, and 3+1+19+8 = 31, which is exactly the given code. So a word is coded by the sum of the alphabet positions of its letters. For BANK the positions are $B = 2$, $A = 1$, $N = 14$, $K = 11$, and $2 + 1 + 14 + 11 = 28$. Hence the code is 28.

383. Compare each number with its code: $5 \times 5 = 25$, $6 \times 6 = 36$ and $7 \times 7 = 49$. In every case the code is the square of the number. Therefore 9 is coded as $9 \times 9 = 81$. Option A is 9×8, option C is 9×10 and option D is 9×11, none of which follow the square rule.

384. Compare the two numbers digit by digit: $3 \to 4$, $4 \to 5$, $7 \to 8$ and $9 \to 0$. Each digit is increased by 1, with 9 rolling over to 0. Applying this to 6852: $6 \to 7$, $8 \to 9$, $5 \to 6$ and $2 \to 3$, giving 7963. Option B leaves the last digit short by one, option C leaves the first digit unchanged and option D leaves the third digit unchanged.

385. In 8524 the digits are 8, 5, 2, 4 and the code 4258 has the digits 4, 2, 5, 8, which is the original sequence read backwards. So the rule is: write the digits in reverse order. Reversing 7, 1, 3, 9 gives 9, 3, 1, 7, i.e. 9317. Options B, C and D are other rearrangements of the same digits and do not correspond to a straight reversal.

386. Step 1: write the plain codes. From the list, $7 \to \#$, $5 \to \&$, $8 \to +$, $2 \to \$$, $6 \to =$ and $4 \to @$, giving # & + $ = @. Step 2: test the conditions. The first digit 7 is odd and the last digit 4 is even, so condition (i) applies; condition (ii) needs an even first digit and so does not apply. Step 3: interchange the first and last codes, so # and @ swap places. The final code is @ & + $ = #. Option B is the code before the swap, option C interchanges the middle codes instead and option D interchanges the second and third codes.

387. Find the rule from FUND. $F = 6$ and its code is 21; $U = 21$ and its code is 6; $N = 14$ and its code is 13; $D = 4$ and its code is 23. In every case code = 27− (position), i.e. each letter is replaced by the position of its opposite letter counted from Z backwards. For RISK: $R = 18 \Rightarrow 27 - 18 = 9$; $I = 9 \Rightarrow 27 - 9 = 18$; $S = 19 \Rightarrow 27 - 19 = 8$; $K = 11 \Rightarrow 27 - 11 = 16$. So the code is 9-18-8-16. Option B simply gives the plain alphabet positions without the transformation, option C interchanges the codes of S and K, and option D wrongly treats K as the 12th letter.

388. Replace each symbol by the digit it stands for: $\% = 9$, $* = 2$, $@ = 5$ and $\# = 3$, so the expression becomes $9 \times 2 + 5 \times 3 - 2$. Apply BODMAS: do the multiplications first, $9 \times 2 = 18$ and $5 \times 3 = 15$. Then $18 + 15 - 2 = 31$. Option A results from wrongly subtracting the value of $*$ twice, giving $18 + 15 - 2 - 2 = 29$, and option D from omitting the final subtraction of 2.

389. Take each digit in turn. For 4: $3 \times 4 = 12$, and 12 divided by 10 leaves remainder 2. For 7: $3 \times 7 = 21$, remainder 1. For 2: $3 \times 2 = 6$, and 6 divided by 10 leaves remainder 6. For 9: $3 \times 9 = 27$, remainder 7. Writing the remainders in the same order as the original digits gives 2167. Options B, C and D contain the correct set of digits in the wrong positions.

390. Substituting the real operations, the expression becomes $18 \times 3 + 24 \div 6 - 10$. By BODMAS, division and multiplication are performed before addition and subtraction: $18 \times 3 = 54$ and $24 \div 6 = 4$. The expression is now $54 + 4 - 10 = 48$. Working strictly from left to right without BODMAS would give $(18 \times 3 + 24) \div 6 - 10 = 3$, which is not among the options and is not the correct method.

391. Because the last step of the encoding is a reversal, the first step of decoding must be to reverse the given code. Reversing + & ! ? $ gives $? ! & +. Now read off the digits from the list: $ is 3, ? is 7, ! is 0, & is 5 and + is 8. So the number is 37058. Option B, 85073, is the trap answer obtained by decoding the symbols without first undoing the reversal.

392. First addition: $8 + 4 + 7 + 6 + 9 = 34$. Since 34 has two digits, repeat the process: $3 + 4 = 7$. This is a single digit, so the process stops and the code is 7. A common error is to stop at 34 or to add only some of the digits; carrying the rule through to a single digit gives 7.

393. Step 1: plain codes. From the list, $3 \to \#$, $6 \to ?$, $4 \to *$, $9 \to \&$, $8 \to \$$ and $7 \to =$, giving # ? * & $ =. Step 2: check the conditions. The first digit is 3 (odd) and the last digit is 7 (odd), so condition (i) applies; conditions (ii) and (iii) both require an even first digit and are not triggered. Step 3: apply condition (i). Both the first and the last digits must take the code of the last digit, which is the code of 7, namely =. So the first symbol # is replaced by = and the last symbol is already =. The final code is = ? * & $ =. Option B wrongly uses the code of the first digit, option C changes only the first symbol and option D interchanges the codes of 6 and 9.

394. From DEPOSIT it is clear that the basic code is the alphabet position of each letter. For CREDIT the positions are $C = 3$, $R = 18$, $E = 5$, $D = 4$, $I = 9$, $T = 20$, so the basic code is 3-18-5-4-9-20. Now replace each number by its digit sum: $3 \to 3$, $18 \to 1 + 8 = 9$, $5 \to 5$, $4 \to 4$, $9 \to 9$, $20 \to 2 + 0 = 2$, giving 3-9-5-4-9-2. Finally write this sequence in reverse order: 2-9-4-5-9-3. Option B is the answer before the reversal step, and options C and D reverse only part of the sequence.

395. The two-digit number @# has value $10@ + \#$ and #@ has value $10\# + @$. Their sum is $11@ + 11\# = 11(@ + \#)$. Setting this equal to 121 gives $@ + \# = 11$. Combining with $@ - \# = 3$ and adding the two equations gives $2@ = 14$, so $@ = 7$ and hence $\# = 4$. Then $\% = @ + \# - 5 = 7 + 4 - 5 = 6$. Therefore @#% stands for the digits 7, 4, 6 in that order, i.e. 746. Option A reverses the first two digits and option C reverses the last two.

396. Step 1: multiply and add. $8 \times 4 = 32$, $5 \times 3 = 15$, $7 \times 2 = 14$ and $3 \times 1 = 3$. The total is $32 + 15 + 14 + 3 = 64$. Step 2: apply the parity rule. Since 64 is even, the code is half of it, $64 \div 2 = 32$. Option D, 69, comes from wrongly applying the odd-number rule, and options A and C come from arithmetic slips in the weighted sum.

397. Check the rule on CASH: the positions are $C = 3$, $A = 1$, $S = 19$, $H = 8$; pairing gives $3 + 1 = 4$ and $19 + 8 = 27$, matching the given code 4-27. For BRANCH the positions are $B = 2$, $R = 18$, $A = 1$, $N = 14$, $C = 3$, $H = 8$. Pairing from the left: $2 + 18 = 20$, $1 + 14 = 15$ and $3 + 8 = 11$. The code is therefore 20-15-11. Option B miscounts $1 + 14$ as 16, option C miscounts $2 + 18$ as 19 and option D miscounts $3 + 8$ as 12.

398. Step 1: plain codes. From the list, $4 \to @$, $7 \to \%$, $3 \to ?$, $1 \to =$, $6 \to \$$ and $2 \to *$, giving @ % ? = $ *. Step 2: check the conditions. The first digit is 4 (even) and the last digit is 2 (even), so condition (i) applies and condition (ii), which needs an odd first digit, does not. Step 3: apply

condition (i). Both the first and the last symbols must be replaced by the code for 5, which is &. The required code is therefore & % ? = $ &. Option A is the code before the condition is applied, option B changes only the first symbol, option C interchanges ? and =, and option D interchanges the first two symbols. Since the correct code appears nowhere in the list, the answer is None of these.

399. Stage 1: square each digit and divide by 7. For 6: $6^2 = 36$ and $36 = 7 \times 5 + 1$, so the remainder is 1. For 9: $9^2 = 81$ and $81 = 7 \times 11 + 4$, remainder 4. For 4: $4^2 = 16$ and $16 = 7 \times 2 + 2$, remainder 2. For 5: $5^2 = 25$ and $25 = 7 \times 3 + 4$, remainder 4. The remainders in the original order are 1, 4, 2, 4. Stage 2: arrange them in decreasing order to get 4, 4, 2, 1, i.e. 4421. Option C is the answer with the remainders left in the original order, and options B and D are other orderings that are not decreasing.

Subtopic 2.4.4

400. Step 1: Test the condition. The first letter of ACDF is A, which is a vowel, so the condition applies. Step 2: Because the condition applies, the first letter (A) and the last letter (F) are both coded as $*$, whatever their table codes may be. Step 3: The middle letters keep their table codes: C = 7 and D = 1. Step 4: Writing the four positions in order gives $*$, 7, 1, $*$, i.e. $*71*$. Option (B) ignores the condition altogether, options (C) and (D) apply it to only one end instead of both.

401. Step 1: The first digit is 5 (odd) and the last digit is 8 (even), so the condition is satisfied. Step 2: The code of the last digit is the code of 8, which is J. Hence both the first and the last positions become J. Step 3: The untouched middle digits take their own codes: 3 = M, 7 = D, 2 = R. Step 4: Reading the five positions in order: J, M, D, R, J = JMDRJ. Option (A) leaves the first digit as T (condition not applied to the front), option (B) leaves the last digit as T, and option (C) disturbs the order of the middle digits.

402. Step 1: The first letter R and the last letter B are both consonants, so the condition applies. Step 2: The code for the last letter B is 3. Therefore the first position and the last position are both written as 3. Step 3: The middle letters are unaffected: K = 2 and M = 9. Step 4: In order the code is 3, 2, 9, 3, i.e. 3293. Option (A) applies no condition, option (C) forgets to change the last position, option (D) scrambles the middle letters.

403. Step 1: The number begins with 4 and ends with 4; the two are the same digit, so the condition is satisfied. Step 2: Both end positions are therefore coded X, replacing their normal code B. Step 3: The middle digits keep their codes: 7 = L, 2 = E, 9 = C. Step 4: The full code is X, L, E, C, X = XLECX. Option (A) applies nothing, options (B) and (D) apply the rule to only one end.

404. Step 1: The last letter is O, which is a vowel, so the condition applies. Step 2: The condition changes only the last position; it must now carry the code of the first letter L, which is 7. Step 3: The other letters take their own codes: L = 7, D = 6, N = 1. Step 4: Reading in order: 7, 6, 1, 7 = 7617. Option (B) gives O its own code 5 (condition ignored), option (C) wrongly changes the first position instead of the last, option (D) misorders the middle codes.

405. Step 1: The first digit is 8 (even) and the last digit is 3 (odd), so the condition is satisfied. Step 2: First write the ordinary codes: 8 = R, 5 = E, 1 = V, 6 = N, 3 = S, giving REVNS. Step 3: Now interchange the first and the last codes, that is R and S, keeping every middle code in place. Step 4: The result is S, E, V, N, R = SEVNR. Option (A) is the code before the interchange; options (B) and (C) copy one end onto the other instead of swapping them.

406. Step 1: Check the condition before coding anything. The first letter is K, which is a consonant, not a vowel. Hence the condition does NOT apply, and no letter is replaced by $*$. Step 2: Every letter therefore takes its ordinary table code: K = 3, U = 1, M = 9, B = 5. Step 3: The code is 3195. Option (A) wrongly applies the condition because a vowel U appears somewhere in the group, but the rule speaks only of the FIRST letter. Options (B) and (D) use wrong codes for the end letters.

407. Step 1: Identify which condition, if any, fires. First digit 3 is odd; last digit 8 is even. That matches condition (i), and it rules out condition (ii) (which needs an even first digit). Step 2: Condition

(i) says both end positions carry the code for the FIRST digit. The code for 3 is M, so position 1 and position 5 are both M. Step 3: Middle digits keep their own codes: 9 = A, 1 = P, 4 = D. Step 4: The code is M, A, P, D, M = MAPDM. Option (A) leaves 8 coded as T; option (C) applies the wrong condition; option (D) uses the code for 5 at the end.

408. Step 1: Decode the three plain numbers from the table: 6 = S, 2 = H, 5 = N. So the last three letters of the group are S, H, N in that order. Step 2: The first symbol is #, which by the condition can only arise when the first letter is a vowel. In this table the only vowel present is O, so the first letter must be O. Step 3: The group is therefore O, S, H, N = OSHN. Step 4: Verify the rejected options. OHSN codes as # 265; OSNH codes as # 652; CSHN begins with the consonant C, so the condition does not apply and it codes as 7625, with no # at all.

409. Step 1: Test (i): the first digit 8 is even, so (i) is applicable. Step 2: Test (ii): the last digit 7 is odd, so (ii) is also applicable. Step 3: Since both are applicable, condition (iii) overrides and only condition (ii) is to be used. This means the $*$ of condition (i) is NOT written, and the first digit keeps its ordinary code 8 = F. Step 4: Apply (ii): the last position takes the code for the first digit, i.e. F. Middle digits are unchanged: 4 = B, 9 = P, 3 = N. Step 5: The code is F, B, P, N, F = FBPNF. Options (A) and (C) wrongly keep condition (i); option (B) applies no condition to the last digit.

410. Step 1: Count the even digits in 47685. They are 4, 6 and 8, that is three even digits. Since three is more than two, the condition applies. Step 2: Every even digit, and only the even digits, is replaced by E. So 4 $\rightarrow$ E, 6 $\rightarrow$ E, 8 $\rightarrow$ E. Step 3: The odd digits are untouched and take their table codes: 7 = W and 5 = T. Step 4: Position by position the code is E, W, E, E, T = EWEET. Option (B) ignores the condition; option (C) wrongly converts the odd digit 5 as well; option (D) converts only the first even digit.

411. Step 1: The first letter I is a vowel and the last letter U is also a vowel. So condition (i) applies and condition (ii), which needs a consonant at the end, does not. Step 2: Write the ordinary codes first: I = 5, K = 8, M = 1, R = 6, U = 7, giving 58167. Step 3: Condition (i) requires the code of the first letter and the code of the last letter to be exchanged, i.e. 5 and 7 swap places while 8, 1, 6 stay put. Step 4: The code becomes 7, 8, 1, 6, 5 = 78165. Option (A) is the pre-swap code; options (B) and (D) copy one end code onto the other instead of exchanging them.

412. Step 1: The last letter is E, a vowel, so the condition applies. Step 2: The condition has two parts. First, the last position is written as $*$. Second, the first position, which is H, is written as the code for the last letter E, that is 4 (not H's own code 3). Step 3: The middle letters are unaffected: L = 9 and D = 7. Step 4: The full code is 4, 9, 7, $*$, i.e. 497$*$. This string does not appear among options (A) to (D): option (A) keeps H as 3, option (B) omits the $*$, option (C) reverses the two parts of the rule, and option (D) applies nothing. Hence the answer is None of these.

413. Step 1: Apply condition (ii). The number begins with 8, which is even, so position 1 is coded # instead of Q. Step 2: Apply condition (i). Scanning the digits $8, 5, 3, 5, 6$, only the digit 5 repeats; it appears at positions 2 and 4. The first occurrence (position 2) keeps its code S, while the later occurrence (position 4) becomes $*$. Step 3: The remaining digits take their table codes: position 3 is 3 = P and position 5 is 6 = T. Step 4: The code is #, S, P, $*$, T. Option (A) applies neither condition, option (B) misses the repetition rule, option (C) misses the even-start rule.

414. Step 1: Classify the two end letters. The first letter M is a consonant; the last letter U is a vowel. Step 2: Match against the conditions. Condition (i) requires consonant-then-vowel, which is exactly this case, so (i) applies. Condition (ii) needs a vowel first, and condition (iii) needs a consonant at the end, so neither of those applies. Step 3: Condition (i) says both end positions carry the code of the vowel U, which is 3. So position 1 and position 5 are both 3. Step 4: The middle letters keep their codes: W = 6, R = 1, T = 8. Step 5: The code is 3, 6, 1, 8, 3 = 36183. Option (B) leaves M as its own code 7 instead of 3; option (C) is right in the first four positions but carries 1 in the fifth, which is R's code and not the required 3; option (D) applies condition (ii) by mistake.

415. Step 1: The two $*$ symbols can only come from condition (ii), so the required number must begin with an even digit and end with an odd digit. Step 2: Decode the three visible letters: M = 5, R = 7,

V = 9. So the middle three digits must be 5, 7, 9 in that order. Step 3: Test each option in turn. (A) 55793: both ends are odd, so no condition applies and the code is MMRVN. (B) 45794: both ends are even, so again no condition applies and the code is KMRVK. (C) 45791: the middle digits $5, 7, 9$ are correct, the first digit 4 is even and the last digit 1 is odd, so condition (ii) fires and the code is $*$MRV$*$. (D) 35791: both ends are odd, no condition applies, code NMRVB. Step 4: Only option (C) produces $*$MRV$*$.

416. Step 1: List the vowels available in the table: A, I, O, U. Now scan the group SCRND: S, C, R, N and D are all consonants, so the group contains no vowel at all. Step 2: Therefore condition (i) fails (its ends are not vowels) and condition (ii) fails (there is not exactly one vowel, there are zero). Condition (iii) is the one that applies. Step 3: Write the ordinary codes: S = 4, C = 8, R = 7, N = 9, D = 6, giving 48796. Step 4: Condition (iii) requires the first code and the last code to be interchanged, so 4 and 6 swap while 8, 7, 9 stay in place. Step 5: The code is 6, 8, 7, 9, 4 = 68794. Option (A) is the pre-swap code; options (B) and (C) change only one of the two ends.

417. Step 1: Write the ordinary codes of $3, 8, 5, 9, 6$: J, M, H, W, B. Step 2: Test condition (i). The first digit 3 is odd, so (i) applies: interchange the first code J with the last code B. The string becomes B, M, H, W, J. Step 3: Test condition (ii). The last digit of the original number is 6, which is even, so (ii) applies too. By condition (iii) it is applied after the swap, and it replaces whatever now stands in the last position by $*$. So the J that arrived at the end from the swap is overwritten. Step 4: The final code is B, M, H, W, $*$. Option (A) applies nothing, option (C) stops after step 2, option (D) applies the two rules in the wrong order by starring the front.

418. Step 1: The first letter P and the last letter N are both consonants (the only vowel in this table is I). So condition (iii) applies, while (i) and (ii) do not. Step 2: Note that condition (iii) leaves the end letters alone; it acts on the interior. Write the ordinary codes: P = 2, L = 4, S = 7, G = 1, N = 9, giving 24719. Step 3: Interchange the second and the fourth codes, that is 4 and 1. Positions 1, 3 and 5 (namely 2, 7, 9) stay exactly where they are. Step 4: The code becomes 2, 1, 7, 4, 9 = 21749. Option (A) is the code before the interchange; option (B) performs the required swap but then also exchanges the last two codes; option (C) swaps the third and fourth codes of 24719 instead of the second and fourth.

419. Step 1: The pair of $*$ symbols can be produced only by condition (i), so the required group must have a vowel at BOTH ends. The vowels in this table are A, E and O. Step 2: Decode the three visible middle codes: 9 = C, 3 = R, 5 = M, so positions 2, 3, 4 must be C, R, M in that order. Every option already has C, R, M in the middle, so the decision rests entirely on the two end letters. Step 3: Test each option. (A) OCRME: O and E are both vowels, so condition (i) fires and both ends become $*$, giving $*\,935\,*$ — an exact match. (B) BCRME: B is a consonant and E is a vowel, so condition (ii) fires and both ends take B's code 4, giving 49354. (C) OCRMK: O is a vowel and K is a consonant, so condition (iii) fires and both ends become #, giving $\#\,935\,\#$. (D) BCRMK: both ends are consonants, so no condition applies and the group takes its ordinary codes 49357. Step 4: Only option (A) yields $*\,935\,*$.

420. Step 1: Separate the six digits by parity. Odd digits: 5, 3, 7, that is three of them. Even digits: 8, 6, 4, that is also three. Step 2: Since the counts are equal, condition (i) applies and conditions (ii) and (iii) both fail, so no digit becomes $*$ or #. Step 3: Write the ordinary codes of $5, 8, 3, 6, 7, 4$: K, W, D, T, A, M. Step 4: Condition (i) asks for the codes of the FIRST TWO digits to be interchanged, so K and W exchange places while D, T, A, M remain untouched. Step 5: The final code is W, K, D, T, A, M = WKDTAM. Option (A) is the code before the interchange, option (B) wrongly applies condition (ii), option (D) also swaps the last two codes, which no condition permits.

Subtopic 2.4.5

421. Compare the statements pair by pair. Statements I ('bank gives loan') and II ('loan is costly') have exactly one word in common, namely 'loan', and exactly one code in common, namely 'pi'. Hence loan = pi. Cross-check: statements I and III share only the word 'bank' and only the code 'ka', so bank

= ka; statements II and III share only the word 'is' and only the code 'na', so is = na. Substituting into statement I gives gives = tu, into II gives costly = zo, and into III gives safe = mi. Everything is consistent, so the code for 'loan' is pi.

422. The two statements have exactly one word in common: 'mango'. Their code groups are {sa, de, ro} and {de, li, fa}, whose only common element is 'de'. A word common to both sentences must be represented by a code common to both code groups, so mango = de. Note that no other word can be fixed here: 'ripe' and 'tree' are covered by sa and ro in some order, and 'juice' and 'sweet' by li and fa in some order, so options A, B, D and E cannot be justified.

423. Statements I and II share only the word 'card' and only the code 'ta', so card = ta. Statements I and III share only the word 'issued' and only the code 'ke', so issued = ke. Statement I is 'debit card issued' = 'mo ta ke'. Removing card (= ta) and issued (= ke) leaves the single word 'debit' matched with the single code 'mo'. Hence mo = debit. The words 'blocked' and 'customer' appear in statements II and III respectively and are coded by si/lo and ru/da, not by mo.

424. Statements I and III share only 'bank' and only the code 'pa', so bank = pa. Statements I and II share only 'service' and only the code 'ku', so service = ku. Statements II and III share only 'is' and only the code 'ze', so is = ze. Now statement I, 'good bank service' = 'pa ni ku', leaves good = ni. Therefore 'good service' = 'ni ku'. Option A is 'bank service', option B is 'good is', option D contains ta (= poor) and option E contains mi (= closed).

425. Statements I and II share only 'account' and only the code 'lo', so account = lo. Statements I and III share only 'money' and only the code 'fi', so money = fi. Statements II and III share only 'safe' and only the code 'me', so safe = me. Statement III is 'safe money always' = 'me fi da'; after removing safe (= me) and money (= fi), the remaining word 'always' must be 'da'. (For completeness, from statement I in = ka and from statement II is = tu.)

426. Statements I and II share only 'coin' and only the code 'pa', so coin = pa. Statements I and III share only 'new' and only the code 'zi', so new = zi. Statements II and III share only 'round' and only the code 'ru', so round = ru. Statement I, 'bright new coin' = 'zi pa mo', now leaves bright = mo. Since 'mo' is not offered among options A to D (zi = new, pa = coin, ru = round, ta = is), the correct choice is 'None of these'.

427. Statements I and II share only the word 'over' and only the digit 5, so over = 5. Statements I and III share only the word 'the' and only the digit 3, so the = 3. Statements II and III share only the word 'walk' and only the digit 7, so walk = 7. Substituting back: statement I gives bridge = 9, statement II gives there = 2 and statement III gives last = 8, which is fully consistent.

428. Step 1: Statements II and III share only the word 'bank' and only the code 're', so bank = re. Step 2: Statements I and II share only 'loss' and only the code 'po', so loss = po; hence in statement II the remaining word 'of' = zu. Step 3: Statements I and III share only 'and' and only the code 'ka', so and = ka, and statement I then gives profit = ni. Step 4: Statement III now gives customer = mi. Step 5: Statement V, 'service of bank' = 'ta zu re', with of = zu and bank = re, gives service = ta. Step 6: Statement IV, 'customer service good' = 'mi ta lo', with customer = mi and service = ta, gives good = lo. Therefore 'good bank profit' = 'lo re ni'.

429. Read each code as three parts. Part 1 is a number: credit, income and salary have 6 letters and are coded 6…; audit has 5 letters and is coded 5…; loan has 4 letters and is coded 4…. So the number is the total count of letters in the word. (It is not the count of *distinct* letters, since 'salary' has only 5 distinct letters yet is coded 6.) Part 2 is a capital letter: C, I, S, A, L, i.e. the first letter of the word. Part 3 is a symbol determined by that first letter: income (I) and audit (A) begin with a vowel and take #, while credit (C), salary (S) and loan (L) begin with a consonant and take @. The symbol cannot depend on the length, because the three 6-letter words do not all carry the same symbol; the vowel/consonant split is the only rule consistent with all five samples. Now 'balance' has 7 letters and begins with B, a consonant. Hence its code is 7B@.

430. Step 1: Statements I and III share only 'ravi' and only the code 'na', so ravi = na. Step 2: Statements II and III share only 'is' and only the code 'mi', so is = mi. Step 3: Statements II and IV share the words 'fruit' and 'costly' and the codes 'ru' and 'da'; taken alone this is ambiguous, so use statement IV against statement I: statements I and IV share only 'fruit' and only the code 'ru', so fruit = ru. Step 4: Statement IV then gives costly = da and market = vo. Step 5: Statement II is 'fresh fruit is costly' = 'so ru mi da'; removing fruit (= ru), is (= mi) and costly (= da) leaves fresh = so. (Statement I then gives eats = ki.)

431. Statements I and II have two words in common, 'gold' and 'price', and two codes in common, 'ta' and 'bo'. So {gold, price} corresponds to {ta, bo}, but which is which cannot be decided from the given data, since no other statement contains either word. Statements I and III share only the word 'daily' and only the code 'se', so daily = se is determined. Statements II and III share only the word 'falls' and only the code 'ka', so falls = ka is determined. Hence exactly two of the four listed words, namely 'daily' and 'falls', have uniquely determined codes.

432. Step 1: Statements I and III share only 'apply' and only the code 'ma', so apply = ma. Step 2: Statements II and III share only 'today' and only the code 'la', so today = la. Step 3: Statements I and IV share only 'loan' and only the code 'pe', so loan = pe. Step 4: Statements I and II share the words 'new' and 'loan' and the codes 'ku' and 'pe'; since loan = pe, we get new = ku. Step 5: Statement I, 'apply for new loan' = 'ma di ku pe', now leaves for = di. Step 6: Statement IV, 'education loan today' = 'wa pe la', leaves education = wa. Hence 'apply for education' = 'ma di wa'.

433. Statements I and II share only the word 'shares' and only the number 24, so shares = 24. Statements I and III share only 'sell' and only 17, so sell = 17. Statements II and III share only 'costly' and only 30, so costly = 30. Substituting: statement I leaves the = 9; statement II leaves are = 11; statement III leaves gold = 21. Reading the required phrase in the given order, gold $\to$ 21, are $\to$ 11, the $\to$ 9, i.e. '21 11 9'. The other options either scramble this order or use 24 (shares) in place of 9.

434. Statements I and III share only the word 'bank' and only the code 'fi', so bank = fi. Statements II and III share only the word 'is' and only the code 'pe', so is = pe; hence option E is false. Statements I and II share the words 'new' and 'branch' and the codes 'ta' and 'ru', so {new, branch} corresponds to {ta, ru} but the individual pairing is unknown; hence option A is only possibly true, not definitely true. Statement I, 'bank opens new branch' = 'fi lo ta ru', with bank = fi and 'ta', 'ru' accounted for, leaves opens = lo definitely, so option B is true. Statement II leaves ready = ka, so option D is false. Statement III leaves {very, old} corresponding to {za, mo} with no way to separate them, so option C is not definite.

435. Use statement IV, which shares exactly one word with each of the others. Statements I and IV share only 'in' and only the code 'ta', so in = ta. Statements II and IV share only 'of' and only 'ru', so of = ru. Statements III and IV share only 'and' and only 'pe', so and = pe; statement IV then gives out = do. Statements II and III share only 'silver' and only 'za', so silver = za. Now examine what is left. Statement II, 'price of silver rise' = 'mi ru za ka', reduces to {price, rise} $\to$ {mi, ka}, and no other statement separates these two words, since statement I also contains both 'rise' and 'price'. Similarly statement III, 'gold and silver today' = 'lo za pe ne', reduces to {gold, today} $\to$ {lo, ne}, and statement I again contains both 'gold' and 'today', so this pair also stays unresolved. Since neither 'price' nor 'today' can be pinned to a single code, the code for 'silver price today' cannot be determined.

436. Step 1: Statements II and III share only the word 'growth' and only the number 2, so growth = 2. Step 2: Statements I and III share only 'needs' and only 8, so needs = 8; statement III then leaves time = 4. Step 3: Statement IV, 'time money growth' = '4 6 2', with time = 4 and growth = 2, leaves money = 6. Step 4: Statements I and II share the words 'strong' and 'reforms' and the numbers 5 and 3, so {strong, reforms} $\to$ $\{5, 3\}$. Statement II is '3 7 5 2'; removing growth (= 2) and the pair $\{3, 5\}$ leaves bring = 7. Statement I is '5 8 3 9'; removing needs (= 8) and the pair $\{5, 3\}$ leaves economy = 9. Step 5: Hence money $\to$ 6, bring $\to$ 7, economy $\to$ 9, giving '6 7 9'. (The individual codes of 'strong' and 'reforms' remain undetermined, but they are not required here.)

437. Step 1: Statements I and III share only 'treat' and only 'ja', so treat = ja. Step 2: Statements II and III share only 'good' and only 'za', so good = za. Step 3: Statements III and IV share only 'doctors' and only 'pi', so doctors = pi; statement III then leaves patients = vo. Step 4: Statements IV and V share only 'are' and only 'ra', so are = ra; statement IV leaves busy = bu and statement V leaves kind = fe. Step 5: Statements I and V share only 'nurses' and only 'ho', so nurses = ho. Step 6: Statement I, 'nurses treat sick people' = 'ho ja mi ne', with nurses = ho and treat = ja, gives {sick, people} → {mi, ne}. Statement II, 'people trust good nurses' = 'ne za ku ho', with nurses = ho and good = za, gives {people, trust} → {ne, ku}. The code 'ne' occurs in both restricted lists, and the only word occurring in both is 'people', so people = ne; consequently sick = mi and trust = ku. Step 7: 'busy nurses trust patients' = 'bu ho ku vo'.

438. The eight distinct words are clerk, checks, the, ledger, is, old, retired and today. Statements I and III share only 'clerk' and only the code 'ta', so clerk = ta; statement I then leaves checks = ni, since the other two codes go to 'the' and 'ledger'. Statements II and III share only 'old' and only the code 'do', so old = do. Statements I and II share the words 'the' and 'ledger' and the codes 'ru' and 'se', so {the, ledger} → {ru, se} with no way to separate them, as neither word appears in statement III. Statement II, with 'ru', 'se' accounted for and old = do, leaves is = ka. Statement III, with clerk = ta and old = do, leaves {retired, today} → {pe, li}, again inseparable. So the determined words are clerk, checks, is and old (four of them), and the undetermined words are the, ledger, retired and today, i.e. four words cannot be determined uniquely.

439. Note first that the word 'month' occurs in all three statements and the code 'ka' occurs in all three code groups; no other word or code does. Hence month = ka. Now statements I and II share the words 'each' and 'month' and the codes 'ro' and 'ka'; since month = ka, we get each = ro. Statements I and III share 'more' and 'month' with codes 'ti' and 'ka'; since month = ka, more = ti. Statements II and III share 'offers' and 'month' with codes 'zu' and 'ka'; since month = ka, offers = zu. Statement I, 'save more each month' = 'la ti ro ka', now leaves save = la. Statement II leaves has = pi and statement III leaves this = do. Every one of the seven words is therefore pinned to a single code, so no pair is ambiguous and option E is correct.

440. Step 1: Statements I and II share only 'red' and only the code 'pa', so red = pa. Step 2: Statements I and IV share only 'are' and only the code 'nu', so are = nu. Step 3: Statements II and IV share only 'roses' and only the code 'vi', so roses = vi. Step 4: Statements II and III share only 'sweet' and only 'se', so sweet = se; statement II then leaves smell = to. Step 5: Statements III and IV share 'costly' and 'are' with codes 'ho' and 'nu'; since are = nu, costly = ho. Step 6: Statement III, 'sweet apples are costly' = 'se ge nu ho', now leaves apples = ge, and statement I leaves fruits = li. Step 7: Statement IV, 'costly roses are rare' = 'ho vi nu za', leaves rare = za. Hence 'rare red roses' = 'za pa vi'.

441. Step 1: Statements I and II share only 'station' and only the code 'ma', so station = ma. Step 2: Statements II and IV share only 'very' and only the code 'fo', so very = fo. Step 3: Statements III and IV share only 'service' and only the code 'lu', so service = lu. Step 4: Statements I and III share the words 'train' and 'late' and the codes 'ki' and 'de', so {train, late} → {ki, de} and these two stay unseparated. Statement III, 'late night train service' = 'de po ki lu', with service = lu and the pair {ki, de} used up, leaves night = po. Step 5: Therefore 'night service station' = 'po lu ma'. Checking the options: A ends in 'de' (train or late), B begins with 'ki' (train or late), C uses 'ki' in place of 'lu', and D uses 'ta' (which belongs to statement IV's leftover pair with 'bi'). The correct code 'po lu ma' is not listed, so the answer is 'None of these'.

Subtopic 2.5.1

442. Step 1: The man referred to is Rakesh's father's father. Rakesh's father is one of his sons, and he is stated to have only one son, so that only son is Rakesh's own father. Step 2: The girl is the daughter of Rakesh's father. Step 3: The daughter of one's own father is one's sister. Hence the girl is Rakesh's sister. She cannot be a cousin (a cousin would be the child of an uncle or aunt, not of Rakesh's father) and cannot be a niece (a niece is a sibling's daughter, one generation lower).

443. Step 1: The only daughter of Sunita's mother is Sunita herself, since Sunita is a female child of her mother and her mother has exactly one daughter. Step 2: The man's wife is therefore Sunita. Step 3: If Sunita is the man's wife, then the man is Sunita's husband. A brother or a son could never be described as having Sunita for a wife, so no other option fits.

444. Step 1: B is the sister of C, so B and C are siblings and share the same parents. Step 2: A is the father of B; since C has the same parents as B, A is also the father of C. Step 3: C is stated to be a son, so C is male. A male child of A is A's son. (D, being the other parent, is A's wife, but that is not what is asked.)

445. Step 1: Mohan's father's only son is Mohan himself (Mohan is male and his father has just one son). Step 2: So the phrase reduces to "she is the mother of Mohan's daughter." Step 3: The mother of Mohan's own daughter is Mohan's wife. She is not Mohan's mother, because Mohan's mother is the mother of Mohan, not of Mohan's daughter.

446. Step 1: Suman is the daughter of Prakash, and Rohit is Suman's brother, so Rohit is also a child of Prakash, i.e. Prakash is Rohit's father. Step 2: Neha is Rohit's wife. Step 3: The father of a woman's husband is her father-in-law. He is not her own father, so option A is wrong.

447. Step 1: Ramesh is the husband of Sudha, and Kiran is the daughter of Ramesh, so Kiran is the daughter of Sudha as well. Step 2: Manoj is the son of Kiran. Step 3: Sudha is therefore the mother of Manoj's mother, which makes her Manoj's (maternal) grandmother.

448. Step 1: Priya's brother's son is Priya's nephew. Step 2: The father of that boy is the boy's own father, that is, Priya's brother himself. Step 3: Hence the man is Priya's brother. He cannot be Priya's father, because Priya's father is the grandfather (not the father) of Priya's brother's son.

449. Step 1: Sarita is Mahesh's sister, and Rajesh is Mahesh's son, so Sarita is Rajesh's aunt (father's sister). Step 2: Neha is Sarita's daughter. Step 3: The daughter of one's aunt is one's cousin, so Neha is Rajesh's cousin. She is not Rajesh's sister, since Rajesh's parent is Mahesh while Neha's parent is Sarita. The information about Ravi (Sarita's brother) is extra data and does not change this.

450. Step 1: S is the daughter of R, and T is the brother of S, so T is also a child of R, i.e. T is R's son. Step 2: Q is the brother of R, so Q belongs to R's generation while T belongs to the next generation. Step 3: The brother of one's parent is one's uncle, and Q is explicitly male (brother). Hence Q is T's uncle. The relation is fully determined even though R's gender is unknown, because Q's own gender is given.

451. Step 1: C is A's child and D is C's husband, so E, the son of D, is the child of C and D. Step 2: E is therefore A's grandson (child of A's daughter C). Step 3: F is E's daughter, one generation below E, so F is A's great-granddaughter. Counting generations: A (1st), C (2nd), E (3rd), F (4th).

452. Step 1: B is the daughter-in-law of F and B is married to A, so F is A's mother (a widow). Step 2: C is the brother of A, so C is also a child of F. Step 3: D is C's son and E is D's sister, so E is C's daughter. Step 4: E is thus the daughter of F's son, i.e. F's granddaughter.

453. Step 1: The only daughter of Ashok's mother is Mohit's mother, so Mohit's mother is a daughter of Ashok's mother (and hence Ashok's sister). Step 2: Ashok's mother is therefore the mother of Mohit's mother. Step 3: Mohit's father is the husband of Mohit's mother, and the mother of a man's wife is his mother-in-law. So Ashok's mother is the mother-in-law of Mohit's father.

454. Step 1: Deepa is the mother of Sunil, and Sunil is the brother of Vinod's father, so Deepa is the mother of Vinod's father as well. Step 2: Rajat is another son of Deepa, so Rajat is also a brother of Vinod's father. Step 3: The only sister of Vinod's father is likewise a child of Deepa, which makes her Rajat's sister. Step 4: Sonia is that sister's daughter, so Sonia is the daughter of Rajat's sister, i.e. Rajat's niece.

455. Step 1: In the first generation the only male is the man himself: 1 male (his wife is female). Step 2: In the second generation there are 4 sons (male) and their 4 wives (female): 4 males. Step 3: In

the third generation each son has 3 sons and 1 daughter, so the number of grandsons is $4 \times 3 = 12$ and the granddaughters number 4. Step 4: Total males $= 1 + 4 + 12 = 17$.

456. Step 1: The mother of Vikram's wife's only brother is the mother of Vikram's wife herself, that is, Vikram's mother-in-law. Step 2: A daughter-in-law of this lady is the wife of one of her sons. She has exactly one son, namely Vikram's wife's only brother, so her only daughter-in-law is that brother's wife. (Vikram himself is her son-in-law, not a daughter-in-law, so he does not affect this count.) Step 3: The woman is therefore the wife of Vikram's wife's brother, i.e. Vikram's sister-in-law. She is not Vikram's own wife, since Vikram's wife is that man's sister and not his wife.

457. Step 1: The speaker has no brother, so "my father's son" can only mean the speaker himself. Step 2: The statement therefore reads: "that man's father is myself." Step 3: If the speaker is the father of the man in the photograph, then the man in the photograph is the speaker's son. It cannot be his own photograph, because a person cannot be his own father, and it cannot be his nephew's, since he has no siblings.

458. Step 1: A grandson of Amit's mother must be the son of one of her children. Step 2: Amit is the only child of his parents, so Amit's mother has no other child; therefore the grandson in question is Amit's own son. Step 3: The lady is the wife of Amit's son, i.e. Amit's daughter-in-law, which makes Amit her father-in-law. Without the "only child" clue the grandson could have been a nephew's, but that possibility is ruled out here.

459. Step 1: R is a parent of Q but is not the mother, so R is the father and hence male. Step 2: P and R are a married couple, so P is female, i.e. P is the mother of the household. Step 3: S is the daughter of P, so P is S's mother. Step 4: U is the brother of P, that is, the brother of S's mother, which makes U the maternal uncle of S. (T, the brother of R, would be the paternal uncle.)

460. Step 1: Rohan's grandfather is the brother of Kamal's father, so Rohan's father is the son of Kamal's father's brother, i.e. Rohan's father is a paternal cousin of Kamal. Step 2: Kamal's mother is Meera's daughter and Naveen is Meera's only son, so Naveen is the brother of Kamal's mother, i.e. Kamal's maternal uncle. Step 3: Rohan's father belongs to Kamal's paternal family, while Naveen belongs to Kamal's maternal family. The two families are connected only through the marriage of Kamal's parents, so there is no direct relation of any of the listed kinds between Rohan's father and Naveen. Hence "None of these" is correct.

461. Step 1: The four adults are A, D (brothers), B and E; the three children are C, F and G. Step 2: B is married to D, so the engineer E, who is married to one of the two brothers, must be married to A. Step 3: G is the child of B and D. Step 4: E has two children, and the only children left are C and F; so C and F are the children of A and E. Step 5: The girls are F and G, so C is a boy, i.e. C is A's son.

462. Step 1: Q's mother is the sister of P, so P and Q's mother are siblings. Step 2: Q's mother is also the daughter of M; since P is her sibling, P too is a child of M. Step 3: S is the daughter of P and T is S's sibling, so T is also a child of P. Step 4: M is the parent of P, and T is the child of P, so M is a grandparent of T. Nothing in the data fixes M's gender, so M may be T's grandfather or grandmother.

Subtopic 2.5.2

463. Break the expression into its two links. $P \div Q$: P is the daughter of Q. $Q \times R$: Q is the brother of R, so Q and R are siblings. Therefore R is a sibling of P's parent Q, i.e. R is the uncle or aunt of P. Since P is female (daughter), P is the niece of R. Note that R's own gender is not given, but 'niece' holds for either gender of R, so option B is the only correct choice.

464. $K\#L$: K is the father of L. $L@M$: L is the mother of M. So M's mother is L, and L's father is K. A parent of one's mother is a maternal grandparent; since K is male (father), K is the maternal grandfather of M. 'Paternal grandfather' would require L to be M's father, which contradicts $L@M$.

465. 'R is the maternal uncle of S' means R is a brother of S's mother. So we need R to be the brother of some person T, and T to be the mother of S: that is $R\%T$ followed by $T@S$, giving $R\%T@S$. Checking the rest: $R\#T@S$ makes R the daughter of S's mother, i.e. S's sister. $R@T\%S$ makes R the mother of T, and T the brother of S, so R is S's mother. $S\#T\%R$ makes T the father of S (male, since T is a brother) so R would be a paternal, not maternal, relation. Hence option B.

466. $P - Q$: P is the wife of Q. $Q \div R$: Q is the father of R. Since P is married to R's father, P is the mother of R. She cannot be an aunt (that would need P to be the sibling of a parent, not the spouse of one), so option A.

467. A grandfather is a male parent of a parent. Option A: $X \div Z$ makes X the father of Z (so X is male), and $Z \times Y$ makes Z the mother of Y; hence X is the father of Y's mother, i.e. Y's maternal grandfather. Option B makes X the mother of Z, so X is a grandmother. Option C makes X the son of Z and Z the father of Y, so X is Y's brother. Option D makes X a daughter, hence female. Only option A gives a grandfather.

468. $A\#B$: A is the sister of B, so A is female and A, B share the same parents. $B@C$: B is the brother of C, so B and C also share the same parents. Hence A and C are siblings of the same set of parents. As A is female, A is the sister of C. Cousin is ruled out because sibling links, not parents' siblings, are involved.

469. $P + Q$ already fixes P as the father of Q. For P to be the paternal grandfather of R, R must be the child of P's son, so Q must be the father of R. The symbol meaning 'is the father of' is $+$. Using $\div$ would make Q the mother of R, giving a maternal grandfather; using $\times$ or $-$ would make Q a sibling of R, making P the father of R.

470. 'P is the grandson of S' requires two things: P must be male, and a parent of P must be a child of S. Option B: $P@Q$ makes P the son of Q, which fixes P as male and Q as a parent of P; $Q\&S$ makes Q the daughter of S, so Q is P's mother and S is Q's parent. Hence S is a grandparent of the male P, i.e. P is the grandson of S. Checking the rest: in option A, Q is the mother of S as well as the parent of P, so P and S are siblings, not grandchild and grandparent. In option C, $P\&Q$ makes P a daughter, hence female, so P cannot be a grandson. In option D, Q is the son of P and also the child of S, so P is a parent of Q and S is Q's other parent, making P the spouse of S. Hence option B.

471. 'M is the mother-in-law of N' requires M to be female and to be the mother of N's spouse. Option A: $M \times P$ makes M the mother of P; $P \div N$ makes P the husband of N. So M is the mother of N's husband, i.e. N's mother-in-law. Option B makes M the mother of P and N a parent of P (the code does not fix N's gender), so N is either M's husband or M herself; either way M is N's spouse or N herself, never N's mother-in-law. Option C makes M the daughter of P, so M is N's daughter. Option D makes N the son of P and P the mother of M, so M and N are siblings. Hence option A.

472. Step 1: $K\#L$, so K is the wife of L. Step 2: $L * M$, so L is the son of M. Step 3: $M@N$, so M is the daughter of N. Reading upwards: N is a parent of M, M is a parent of L, so L is the grandson of N. K is married to L, so K is the wife of N's grandson. She is the daughter-in-law of M, not of N, and she is related to N only by marriage, so 'granddaughter' is wrong.

473. Step 1: $P\%Q$, so P is the sister of Q (hence P is female and P, Q share parents). Step 2: $Q!R$, so Q is the son of R; therefore R is a parent of Q and also of P. Step 3: $R\&S$, so R is the wife of S; R is the mother and S is the father of Q and P. Since P is female, P is the daughter of S.

474. A paternal aunt is the sister of one's father. So we need A to be the sister of some X, and X to be the father of B: $A \div X$ followed by $X \times B$, i.e. $A \div X \times B$. Option A makes X the mother of B, giving a maternal aunt. Option C makes A the mother of X and X the sister of B, so A is B's mother. Option D makes A the father of X, so A is male and cannot be an aunt. Hence option B.

475. Step 1: $A\%B$, so A is the brother of B (A is male, and they share parents). Step 2: $B\#C$, so B is the daughter of C; hence C is a parent of B and also of A. Step 3: $C@D$, so C is the husband of D, i.e. C is the father and D is the mother of A and B. Since A is male, A is the son of D.

476. Step 1: $P - Q$ and $Q \div R$ make P, Q, R siblings (P male, Q female). Step 2: $R \times S$, so R is the father of S; hence R is male. Step 3: $S + T$, so S is the mother of T; hence S is female. Now T's mother is S, and S's father is R, so R is the maternal grandfather of T. P is the brother of R, therefore P is the brother of T's maternal grandfather. He is not a maternal uncle, since that would require him to be a brother of T's mother S.

477. A nephew is the son of one's brother or sister, so the expression must establish (i) that M is male and (ii) that M's parent is a sibling of N. Option A: $M + R$ makes M the brother of R, which fixes M as male; $R - Q$ makes R the daughter of Q, so Q is a parent of R and hence of M; $Q + N$ makes Q the brother of N. So M's parent Q is a sibling of N and M is male, i.e. M is the nephew of N. Option B makes M a daughter, hence female. Option C makes R the father of Q, so M, the brother of R, is N's uncle rather than nephew. Option D makes M the grandchild of N. Hence option A.

478. Step 1: $K\%L$, so K is the mother of L. Step 2: $L@M$, so L is the father of M (hence L is male). Step 3: $M\#N$, so M is the sister of N; M is female and L is also the father of N. Step 4: $N \odot O$, so N is the son of O; since L is already N's father and O is a different person, O must be N's mother, i.e. L's wife. Now test the options: O is K's daughter-in-law, not daughter, so A is false. M is the daughter of L, and L is the son of K, so M is K's granddaughter – B is true. N is the son of L, not his brother, so C is false. K is the mother of L, not his mother-in-law, so D is false.

479. Take the links one at a time. $A\&B$: A is the wife of B, so A is female and B is male. $B\#C$: B is the father of C; this fixes nothing about C's gender. $C\%D$: C is the sister of D, so C is female; D's gender is still open at this point. $D\#E$: D is the father of E, so D is male, and E's gender is never specified anywhere. Therefore the persons definitely female are A and C only – exactly two. (E is the one member whose gender cannot be decided, but the question asks only for those definitely female, so 'Cannot be determined' is not required.)

480. Step 1: $A \div B$, so A is the son of B. Step 2: $B - C$, so B is the wife of C; thus B is the mother and C the father of A. Step 3: $C + D$, so C is the father of D; hence D is a sibling of A. Step 4: $D \times E$, so D is the sister of E, which means E shares the same parents as D and therefore as A too. So E is a sibling of A. However, the code fixes only D's gender (sister), never E's, so E may be either the brother or the sister of A. 'Cousin' is wrong because E shares A's parents.

481. Step 1: $M\#N$, so M is the son of N; M is male. Step 2: $N\%O$, so N is the mother of O; thus M and O are siblings. Step 3: $O@P$, so O is the brother of P; therefore P is also a child of N and a sibling of M. Step 4: $P * Q$, so P is the father of Q, which makes P male. Now Q's father is P, and M is P's brother, so M is the brother of Q's father, i.e. Q's paternal uncle. A maternal uncle would require M to be the brother of Q's mother.

482. Step 1: $P\&Q$, so P is the daughter of Q (P is female). Step 2: $Q@R$, so Q is the wife of R; hence Q is P's mother and R is P's father. Step 3: $R!S$, so R is the father of S, making S a sibling of P. Step 4: $S\%T$, so S is the brother of T, and T too is a child of R and Q. Now check: T's gender is never given, so A is not definite. P is female and R is her father, so 'P is the daughter of R' is definitely true – option B. S is P's brother, not her son, so C is false. Q is R's wife, not his daughter-in-law, so D is false.

483. Step 1: $K!L$, so K is the son of L (K is male). Step 2: $L\%M$, so L is the mother of M; hence K and M are siblings. Step 3: $M\&N$, so M is the sister of N, which makes N another child of L and therefore a sibling of K. Step 4: $N * O$, so N is the husband of O; N is male and O is female. Thus O is the wife of K's brother N, i.e. O is the sister-in-law of K. 'Daughter-in-law' is wrong because O married K's brother, not K's son.

Subtopic 2.5.3

484. Start from the innermost phrase. "My father's mother" is Rakesh's paternal grandmother. Her "only son" must be Rakesh's own father, because Rakesh's father is by definition her son and she has only one son. So the phrase reduces to "the daughter of my father". A daughter of Rakesh's father is

Rakesh's sister. She cannot be a niece (that would need her to be a child of Rakesh's brother or sister) nor a cousin (that would need her to be a child of an uncle or aunt), and the grandmother having only one son rules out any uncle on the father's side.

485. "The only daughter of my mother" is a person Anita describes; since Anita is herself female, she is a daughter of her own mother, and her mother has only one daughter, so that person is Anita herself. The statement therefore reads "Ramesh's mother is Anita". Hence Anita is Ramesh's mother. She cannot be his aunt or sister, because those would require the only daughter to be someone other than Anita, which the word "only" forbids.

486. Generation 1 contains the two brothers Mahesh and Ganesh. Generation 2 contains their children: Suresh (son of Mahesh) and Vikram (son of Ganesh). Two people whose fathers are brothers are children of siblings, i.e. cousins. They are not brothers, since they have different fathers. "Nephew" would require Suresh to be the child of Vikram's sibling, and "uncle" would require Suresh to be a sibling of Vikram's parent – both fail because Suresh and Vikram sit in the same generation.

487. Build the tree downwards. Generation 1: Harish and his wife Sarla. Generation 2: their son Vikram. Generation 3: Vikram's daughter Deepa. Sarla is therefore two generations above Deepa on the direct line, i.e. Deepa's grandmother. She is not the mother (that is Vikram's wife, who is not mentioned), not an aunt (that would need her to be a sibling of Deepa's parent), and not a mother-in-law (Deepa's marriage is not mentioned at all).

488. "The only daughter of my father" – the speaker is a woman, so she is a daughter of her father, and her father has only one daughter; hence that person is the speaker herself. The sentence becomes "His wife is this woman". If she is his wife, then he is her husband. He cannot be her brother or father (neither is married to her), and son-in-law would require him to be married to her daughter, not to her.

489. Neha is married to Rajat, so Isha, the daughter of Neha, is the daughter of the couple Rajat–Neha. Rajat is Mohan's son. Counting generations: Mohan (1) $\rightarrow$ Rajat (2) $\rightarrow$ Isha (3). Being exactly two generations above Isha in the direct line, Mohan is her grandfather. "Great-grandfather" would need three generations of separation, and "father" only one.

490. Sunita is a granddaughter of Kailash, so she is the child of one of Kailash's children. Kailash has only one child, Manoj; hence Sunita is Manoj's daughter. Rekha is Manoj's wife, so Rekha is Sunita's mother. She cannot be an aunt, since an aunt would have to be married to a sibling of Sunita's parent and Manoj has no sibling; she cannot be a grandmother, as she stands only one generation above Sunita.

491. Work from the inside out. "The only son of my father": Anil is male and is a son of his father, and his father has only one son, so this is Anil himself. Next, "the wife of the only son of my father" is Anil's own wife. Finally, "the mother of Anil's wife" is Anil's mother-in-law. She is not his mother (that would be his father's wife, a different person), not his grandmother (wrong generation on his own line), and not a sister-in-law (that is a sibling relation, not a parental one).

492. Fix the couples first: A (male) is married to B (female), and C, the brother of B, is married to F. Their children are D (son) and E (daughter). So generation 1 is A–B and C–F; generation 2 is D and E. Since C is A's wife's brother, C is A's brother-in-law, and C's son D is therefore A's nephew. D is not A's son, because D's parents are C and F; and he is not a cousin, since he belongs to the generation below A.

493. Ashok and Sarita are siblings, forming generation 1 along with Raj, who is Sonu's maternal uncle, i.e. another brother of Sarita – extra information that does not affect the required link. Generation 2 holds Rohit (Ashok's son) and Sonu and Rita (Sarita's children). Rohit's father and Rita's mother are brother and sister, so Rohit and Rita are children of siblings, i.e. cousins. She is not his sister (different parents) and not his niece (she is in the same generation, not the one below).

494. List each person by generation. Generation 1: the brothers Girdhar and Suresh. Generation 2: Ramesh (Girdhar's son) and the unnamed child of Suresh through whom Isha descends. Generation 3:

Isha, described as Suresh's granddaughter, together with her husband Nakul. Generation 4: Tarun, the son of Isha and Nakul. Distinct generation levels = 4. Note that the named people alone – Girdhar and Suresh, then Ramesh, then Isha and Nakul, then Tarun – already occupy all four levels; the unnamed parent of Isha sits in generation 2 beside Ramesh and so adds no fifth level. The tempting wrong answer is three, obtained by overlooking that Isha is a granddaughter of Suresh and mistakenly placing her in generation 2 alongside Ramesh.

495. P and Q are the couple of generation 1. Their children in generation 2 are R and S. S is married to T, and U, being the daughter of T, is the daughter of the couple S–T, placing her in generation 3. Thus U is the daughter of R's brother, which makes U the niece of R. She is not R's daughter (her parents are S and T), and not R's granddaughter (she is only one generation below R, not two).

496. Let Bharti's only brother be X. The statement says X's son is the brother of Amit's wife. Two people who are brother and sister share the same parents, so the father of Amit's wife is also X. Hence Amit's wife is the daughter of Bharti's brother, which makes Bharti her father's sister, i.e. her aunt. Bharti cannot be her mother (X's wife is the mother) nor her sister (Bharti is one generation above).

497. Place everyone by generation. A is generation 1. B, his child, is generation 2. C is B's daughter and D is C's brother, so both are children of B and belong to generation 3. E, the son of D, is generation 4. E is thus three steps below A on a straight line of descent, making him A's great-grandson. "Grandson" would require only two steps, which is the relation of C and D to A.

498. "Her son's father" is the man who fathered the lady's son, i.e. the lady's husband. That man is the son-in-law of Shashank's mother, which means he is married to a daughter of Shashank's mother. But he is married to the lady in the photograph, so the lady is a daughter of Shashank's mother – that is, Shashank's sister. Therefore Shashank is her brother. He cannot be her cousin (they share a mother), her father (his mother, not he, is the parent generation here), or her uncle.

499. Q is R's mother-in-law, so R is married to Q's son; since Q has only one son, that son is R's husband. The two couples are therefore P–Q (generation 1) and R and Q's son (generation 2). R is the mother of S and T, so S and T are the children of R and Q's only son, forming generation 3. V is described as the son of Q's only son, so V is also a child of that same couple. Counting members P, Q, Q's son, R, S, T and V gives exactly seven, so no further person exists. Hence V is a brother of T, not a cousin or nephew.

500. E is the mother of D, and D is the sister of C, so C is also a child of E. C is the father of A, and A is the brother of B, so A and B share the same parents; hence B too is a child of C. That places B two generations below E, i.e. E's grandchild. However, "A is the brother of B" tells us the gender of A, not of B, so B may be male or female. Grandson and granddaughter are both possible and neither can be established, so the relation cannot be determined.

501. Read the expression in order. 'P @ Q' gives P is the father of Q. 'Q # R' gives Q is the sister of R, so P is also the parent of R. 'R % S' gives R is the mother of S, which shows R is female. Therefore S's mother R is a daughter of P, so P is the father of S's mother, i.e. S's maternal grandfather. He is not the paternal grandfather, since the link runs through S's mother, and not a maternal uncle, which would require him to be a brother of S's mother rather than her father.

502. F is the granddaughter of E and D is a grandmother in the same family, so E is F's grandfather and D–E is one couple. The second couple is B and C, since C is the wife of B. C is the mother of F, so F is the child of B and C, i.e. generation 3. A is a grandchild of D, so A is the child of one of D's children; the only child of D present among the six named persons is B, so A too is a child of B and C. Hence A and F are siblings. Nothing in the data fixes A's gender, so A is F's brother or sister, and the exact term cannot be pinned down.

503. Preeti's mother-in-law is her husband's mother, and that lady's only son must be Preeti's husband himself. So the statement says the boy's mother's only brother is Preeti's husband. If Preeti's husband is the brother of the boy's mother, then the boy's mother is the husband's sister, and the boy, being

her son, is the son of the husband's sister – that is, his nephew. The boy is not his son (his mother is the husband's sister, not his wife) and not his cousin, since he lies one generation below.

504. R is the mother of both Q and S, so Q and S are siblings; S being called a maternal uncle confirms he is male. S is the maternal uncle of U, which means U's mother is a sister of S, i.e. a daughter of R. U's father is V, and since the six named persons are distinct, V is not P; therefore U's mother is a sister of Q rather than Q herself. So U's mother and Q are sisters. T is the son of P and Q, and U is the daughter of that sister, making T and U children of two sisters, i.e. cousins. T cannot be U's brother, since their mothers differ, nor her uncle, since they share a generation.

Subtopic 2.6.1

505. Take the branch as origin, east as $+x$ and north as $+y$. Walking 5 km north takes him to $(0, 5)$. Facing north, a right turn makes him face east; walking 3 km takes him to $(3, 5)$. Facing east, a right turn makes him face south; walking 5 km takes him to $(3, 0)$. His net displacement is 3 km along $+x$ and 0 along y, i.e. he is 3 km due East of the branch.

506. Measure bearings clockwise from north: North $= 0°$, East $= 90°$, South $= 180°$, West $= 270°$. Starting at $0°$, a clockwise turn of $90°$ gives $0° + 90° = 90°$, i.e. East. An anticlockwise turn of $180°$ subtracts: $90° - 180° = -90°$, which is the same as $-90° + 360° = 270°$. A bearing of $270°$ is West.

507. At 7 AM the sun is in the east, so every shadow points towards the west. Anil's shadow is to his right, hence west lies to his right. Now test the four facings: if he faces north his right is east; if he faces east his right is south; if he faces west his right is north; if he faces south his right is west. Only the last case matches, so Anil is facing South.

508. The eastward leg and the northward leg are perpendicular, so the two legs form the legs of a right-angled triangle whose hypotenuse is the shortest distance d. By Pythagoras, $d = \sqrt{12^2 + 9^2} = \sqrt{144 + 81} = \sqrt{225} = 15$ km.

509. Put A at $(0, 0)$ with east as $+x$ and north as $+y$. Then $B = (4, 0)$ and $C = (4, 4)$. Relative to A, point C lies 4 km to the east and 4 km to the north, so it is in the quadrant between north and east; since the two offsets are equal it is exactly along the North-East direction.

510. Facing south, the driver's left hand points east, so after the first left turn he faces east. Facing east, his right hand points south, so after the right turn he faces south. Facing south again, a left turn takes him back to east. Hence the van is finally moving towards the East.

511. Take home as $(0, 0)$. After 3 km north she is at $(0, 3)$; after 4 km east at $(4, 3)$; after 3 km south at $(4, 0)$; after 4 km west at $(0, 0)$. The northward and southward legs cancel $(3 - 3 = 0)$ and the eastward and westward legs cancel $(4 - 4 = 0)$, so the net displacement is zero and she is exactly back at her home.

512. Let the office be $(0, 0)$, east $= +x$, north $= +y$. Walking 4 km north gives $(0, 4)$. Facing north, a right turn faces east; 3 km gives $(3, 4)$. Facing east, a right turn faces south; 8 km gives $(3, 4-8) = (3, -4)$. So he is 3 km east and 4 km south of the office. Distance $= \sqrt{3^2 + 4^2} = \sqrt{9 + 16} = 5$ km, and since he is east and south of the start, the direction is South-East.

513. Start at $(0, 0)$ facing east. Walking 5 km east gives $(5, 0)$. A right turn from east faces south; 5 km gives $(5, -5)$. A right turn from south faces west; 10 km gives $(-5, -5)$. A left turn from west faces south; 5 km gives $(-5, -10)$. He is 5 km west and 10 km south of the start, so he lies in the quadrant between south and west, i.e. in the South-West direction.

514. Fix $Q = (0, 0)$ with east $= +x$ and north $= +y$. Then $P = (8, 0)$. R is 6 m north of P, so $R = (8, 6)$. S is 8 m west of R, so $S = (8 - 8, 6) = (0, 6)$. Since S and Q have the same x-coordinate and S is 6 m higher, S is exactly 6 m due North of Q.

515. Start at $(0, 0)$, east $= +x$, north $= +y$. Walking 10 km south gives $(0, -10)$. Facing south, left is east; 5 km gives $(5, -10)$. Facing east, left is north; 4 km gives $(5, -6)$. Facing north, right is east;

3 km gives $(8, -6)$. Net displacement is 8 km east and 6 km south, so the distance is $\sqrt{8^2 + 6^2} = \sqrt{64 + 36} = \sqrt{100} = 10$ km.

516. Take the branch as $(0, 0)$. Arun reaches $(0, 9)$ and then $(12, 9)$. Bhavna reaches $(0, -5)$ and then $(12, -5)$. Both have the same x-coordinate 12, so the line joining them is vertical. The distance is the difference of the y-coordinates: $9 - (-5) = 14$ km. (Arun is 14 km due north of Bhavna.)

517. Use bearings measured clockwise from north: North = 0°, North-East = 45°, East = 90°, South-East = 135°, South = 180°, South-West = 225°, West = 270°, North-West = 315°. He starts at 225°. Turning 135° clockwise: $225° + 135° = 360° \equiv 0°$, i.e. North. Turning 180° anticlockwise: $0° - 180° = -180° \equiv 180°$, i.e. South. South is not listed among options A to D, so the answer is None of these.

518. Write the given pairs as bearings clockwise from north. South-East = 135° becomes North = 0°, a change of $135° - 0° = 135°$ in the anticlockwise sense. Check with the second pair: North-East = 45° rotated 135° anticlockwise gives $45° - 135° = -90° \equiv 270°$, which is West – consistent. So the rule is 'rotate 135° anticlockwise'. Applying it to West = 270°: $270° - 135° = 135°$, which is South-East.

519. Take the office as $(0, 0)$, east $= +x$, north $= +y$. Riding 15 km north: $(0, 15)$, facing north. Right turn faces east; 4 km: $(4, 15)$. Left turn from east faces north; 3 km: $(4, 18)$. Right turn from north faces east; 4 km: $(8, 18)$. Right turn from east faces south; 3 km: $(8, 15)$. So he is 8 km east and 15 km north of the office, and the shortest distance is $\sqrt{8^2 + 15^2} = \sqrt{64 + 225} = \sqrt{289} = 17$ km.

520. Let $X = (0, 0)$, east $= +x$, north $= +y$. Manoj: 30 m east gives $(30, 0)$ facing east; a left turn faces north, 20 m gives $(30, 20)$; a left turn from north faces west, 10 m gives $Y = (20, 20)$. Neha: 10 m north gives $(0, 10)$ facing north; a right turn faces east, 20 m gives $Z = (20, 10)$. Y and Z share the x-coordinate 20, and Y is $20 - 10 = 10$ m higher, so Y is 10 m due North of Z.

521. Use bearings clockwise from north; North-West = 315°. Turn 1 (45° clockwise): $315° + 45° = 360° \equiv 0°$ (North). Turn 2 (90° anticlockwise): $0° - 90° = -90° \equiv 270°$ (West). Turn 3 (135° clockwise): $270° + 135° = 405° \equiv 45°$ (North-East). Turn 4 (180° anticlockwise): $45° - 180° = -135° \equiv 225°$, which is South-West.

522. Take the head office as $(0, 0)$ with east $= +x$ and north $= +y$. Driving 15 km north gives $(0, 15)$, facing north. Facing north, a right turn faces east; 20 km gives $(20, 15)$. Facing east, a right turn faces south; 10 km gives $(20, 15 - 10) = (20, 5)$. Facing south, a right turn faces west; 8 km gives $(20 - 8, 5) = (12, 5)$. So he ends 12 km east and 5 km north of the head office. The distance is $\sqrt{12^2 + 5^2} = \sqrt{144 + 25} = \sqrt{169} = 13$ km, and since he is both east and north of the start, the direction is North-East.

523. North-East and South-East are at 45° and 135° respectively, so the two rides are perpendicular to each other and triangle ABC is right-angled at B with $AB = BC = 12$ km. Hence $AC = \sqrt{12^2 + 12^2} = 12\sqrt{2}$ km. For the direction, resolve into components (east $= +x$, north $= +y$): the first ride gives $\left(\frac{12}{\sqrt{2}}, \frac{12}{\sqrt{2}}\right)$ and the second gives $\left(\frac{12}{\sqrt{2}}, -\frac{12}{\sqrt{2}}\right)$. Adding, the north components cancel and the east component is $\frac{24}{\sqrt{2}} = 12\sqrt{2}$. So C is $12\sqrt{2}$ km due East of A.

524. Let the starting point be $(0, 0)$ (east $= +x$, north $= +y$) and let the first stretch be d km south, reaching $(0, -d)$ while facing south. Facing south, left is east; 8 km gives $(8, -d)$. Facing east, left is north; 12 km gives $(8,\ 12 - d)$. The final position is stated to be 8 km east and 4 km north, so $12 - d = 4$, giving $d = 8$ km. (The east coordinate 8 matches automatically, confirming the setup.)

525. At sunrise the sun is in the east. His back is towards the sun, so he is facing west. Take the start as $(0, 0)$, east $= +x$, north $= +y$. Walking 6 km west gives $(-6, 0)$. Facing west, his right hand points north, so after the first right turn he walks 8 km north to $(-6, 8)$. Facing north, his right hand points east, so after the second right turn he walks 6 km east to $(0, 8)$. He is therefore 8 km due North of the starting point.

Subtopic 2.6.2

526. Take the branch as the origin. The eastward walk of 8 km and the northward walk of 6 km are perpendicular to each other, so they form the two legs of a right-angled triangle whose hypotenuse is the required straight-line distance. By Pythagoras' theorem, distance $= \sqrt{8^2 + 6^2} = \sqrt{64 + 36} = \sqrt{100} = 10$ km. Note that 14 km is the total path length walked $(8 + 6)$, not the shortest distance, so it is not the answer.

527. Since C is due East of A and B is due North of C, the segment AC is perpendicular to the segment CB. So triangle ACB is right-angled at C, with hypotenuse $AB = 25$ m and one leg $CB = 20$ m. By Pythagoras' theorem, $AC^2 = AB^2 - CB^2 = 25^2 - 20^2 = 625 - 400 = 225$, hence $AC = \sqrt{225} = 15$ m.

528. Both movements are along the same North-South line, so no Pythagoras is needed here; the displacements simply subtract. Taking North as positive, her net displacement is $20 - 12 = 8$ m. Since the positive (northward) movement is larger, she ends up 8 m to the North of the ATM. The figure 32 m is the total path length $(20 + 12)$, which is not her distance from the start.

529. Actual distance driven $= 5 + 12 = 17$ km. The two legs are perpendicular, so the straight-line distance is $\sqrt{5^2 + 12^2} = \sqrt{25 + 144} = \sqrt{169} = 13$ km. Saving $= 17 - 13 = 4$ km.

530. The two equal perpendicular legs are 10 m each. Shortest distance $= \sqrt{10^2 + 10^2} = \sqrt{200} = \sqrt{100 \times 2} = 10\sqrt{2}$ m (approximately 14.14 m). It is not 20 m, which is only the total path length.

531. The East-West separation (24 km) and the North-South separation (7 km) are perpendicular. By Pythagoras' theorem, distance $= \sqrt{24^2 + 7^2} = \sqrt{576 + 49} = \sqrt{625} = 25$ km.

532. Take the house as origin with East as $+x$ and North as $+y$. After 6 km East she is at $(6, 0)$; after 8 km North she is at $(6, 8)$; after 6 km West she is at $(0, 8)$. The eastward and westward moves cancel exactly, so her net displacement is purely northward, of magnitude 8 km. Hence she is 8 km from her house.

533. Add up the movements direction-wise. Total northward movement $= 4+4 = 8$ km; total eastward movement $= 3 + 3 = 6$ km. These two net displacements are perpendicular, so the required distance $= \sqrt{8^2 + 6^2} = \sqrt{64 + 36} = \sqrt{100} = 10$ km. (The total path walked is 14 km, which is a distractor.)

534. Take the branch as origin, East as $+x$, North as $+y$. Net eastward displacement $= 12 - 4 = 8$ km. Net northward displacement $= 9 + 6 = 15$ km. These are perpendicular, so shortest distance $= \sqrt{8^2 + 15^2} = \sqrt{64 + 225} = \sqrt{289} = 17$ km. (31 km would be the path length, and 19 km comes from wrongly adding $8 + 15 - 4$.)

535. Travelling via the junction covers $24 + 10 = 34$ km. The two roads from the junction are perpendicular, so the direct distance between the branches $= \sqrt{24^2 + 10^2} = \sqrt{576 + 100} = \sqrt{676} = 26$ km. Saving $= 34 - 26 = 8$ km.

536. Place A at the origin with East as $+x$ and North as $+y$. Then $B = (0, 4)$, $C = (3, 4)$ and $D = (3, 4 - 8) = (3, -4)$. Relative to A, the point D is 3 km to the East and 4 km to the South, so it lies in the South-East direction. Distance $AD = \sqrt{3^2 + 4^2} = \sqrt{9 + 16} = \sqrt{25} = 5$ km. Hence D is 5 km from A in the South-East direction.

537. The westward leg (8 m) and the northward leg (say x m) are perpendicular, and the straight-line distance 17 m is the hypotenuse. So $8^2 + x^2 = 17^2$, giving $64 + x^2 = 289$, hence $x^2 = 225$ and $x = 15$ m. (Note 9 m is the tempting but wrong answer $17 - 8$.)

538. Resolve each leg into East-West and North-South components. A North-East step of 12 m gives $\left(\frac{12}{\sqrt{2}}, \frac{12}{\sqrt{2}}\right) = (6\sqrt{2}, 6\sqrt{2})$, i.e. $6\sqrt{2}$ m East and $6\sqrt{2}$ m North. A North-West step of 12 m gives $(-6\sqrt{2}, 6\sqrt{2})$. Adding: the East-West components cancel, and the North components add to $12\sqrt{2}$ m. So he is $12\sqrt{2}$ m due North of the start. (Equivalently, the two legs are perpendicular to each other, so the resultant is $\sqrt{12^2 + 12^2} = 12\sqrt{2}$ m, bisecting the two directions, i.e. due North.)

539. First convert each stage to a distance. Southward: $6 \times \frac{40}{60} = 6 \times \frac{2}{3} = 4$ km. Westward: $12 \times \frac{15}{60} = 12 \times \frac{1}{4} = 3$ km. These two legs are perpendicular, so the distance from the start $= \sqrt{4^2 + 3^2} = \sqrt{16 + 9} = \sqrt{25} = 5$ km. (7 km is the total path length, a distractor.)

540. Track the facing direction at each turn, taking the branch as origin, East as $+x$ and North as $+y$. Facing North, 10 km takes him to $(0, 10)$. A right turn makes him face East; 6 km takes him to $(6, 10)$. A right turn now makes him face South; 30 km takes him to $(6, -20)$. A left turn makes him face East; 6 km takes him to $(12, -20)$. A left turn makes him face North; 4 km takes him to $(12, -16)$. So he is 12 km East and 16 km South of the branch, i.e. in the South-East direction, at a distance of $\sqrt{12^2 + 16^2} = \sqrt{144 + 256} = \sqrt{400} = 20$ km.

541. Take the office as origin, East as $+x$, North as $+y$. Vikas: eastward total $= 7 + 8 = 15$ km, northward total $= 4 + 4 = 8$ km, so he is at $(15, 8)$. Sneha: 7 km East and 7 km South puts her at $(7, -7)$. Horizontal gap $= 15 - 7 = 8$ km; vertical gap $= 8 - (-7) = 15$ km. These are perpendicular, so the distance between them $= \sqrt{8^2 + 15^2} = \sqrt{64 + 225} = \sqrt{289} = 17$ km.

542. Walking along two sides covers $60 + 80 = 140$ m. The diagonal is the hypotenuse of a right triangle with legs 60 m and 80 m, so it measures $\sqrt{60^2 + 80^2} = \sqrt{3600 + 6400} = \sqrt{10000} = 100$ m. Extra distance $= 140 - 100 = 40$ m. His speed is 4 km/h $= \frac{4000}{3600} = \frac{10}{9}$ m/s. Extra time $= \frac{40}{10/9} = 40 \times \frac{9}{10} = 36$ seconds. Since 36 seconds is not listed among the first four options, the correct choice is 'None of these'.

543. Let the northward distance be x km; then the eastward distance is $(x + 7)$ km. The two legs are perpendicular, so $x^2 + (x + 7)^2 = 13^2$. Expanding, $x^2 + x^2 + 14x + 49 = 169$, i.e. $2x^2 + 14x - 120 = 0$, i.e. $x^2 + 7x - 60 = 0$. Factorising, $(x + 12)(x - 5) = 0$, so $x = 5$ (the negative root $x = -12$ is rejected as a distance). Hence she walked 5 km North and $5 + 7 = 12$ km East. Check: $\sqrt{5^2 + 12^2} = \sqrt{169} = 13$ km, as given. Total distance actually walked $= 5 + 12 = 17$ km.

544. Place A at the origin, East as $+x$, North as $+y$. Then $B = (0, 15)$, $C = (20, 15)$, $D = (20, 15 - 15) = (20, 0)$ and $E = (20, 0 - 21) = (20, -21)$. So E lies 20 km East and 21 km South of A, i.e. in the South-East direction. Distance $AE = \sqrt{20^2 + 21^2} = \sqrt{400 + 441} = \sqrt{841} = 29$ km.

545. Set up coordinates with $A = (0, 0)$, $B = (16, 0)$, $C = (16, 6)$ and $D = (0, 6)$, so that $AB = 16$ m and $BC = 6$ m. Side CD runs from $(16, 6)$ to $(0, 6)$, so its mid-point is $M = (8, 6)$. Now $AM = \sqrt{(8 - 0)^2 + (6 - 0)^2} = \sqrt{64 + 36} = \sqrt{100} = 10$ m, and $MB = \sqrt{(16 - 8)^2 + (0 - 6)^2} = \sqrt{64 + 36} = \sqrt{100} = 10$ m. Total distance walked $= 10 + 10 = 20$ m.

546. After t hours, Ramesh is $12t$ km North of the branch and Suresh is $16t$ km East of it. These two displacements are perpendicular, so the distance between them is $\sqrt{(12t)^2 + (16t)^2} = \sqrt{144t^2 + 256t^2} = \sqrt{400t^2} = 20t$ km. In other words, they separate at a steady 20 km/h. Setting $20t = 40$ gives $t = 2$ hours.

Subtopic 2.6.3

547. Step 1: The symbol # stands for "is 10 m to the north of". So $P\#Q$ reads: P is 10 m to the north of Q. Step 2: Take Q at the origin $(0, 0)$. Then P lies 10 m above it, i.e. at $(0, 10)$. Step 3: The question asks for Q with respect to P, which is the reverse relation. Since P is north of Q, Q must be south of P: from $P(0, 10)$ we move 10 m down to reach $Q(0, 0)$. Hence Q is south of P. "North" is the trap answer obtained by reading the relation in the wrong order; east and west are ruled out because the two points share the same east-west position.

548. Step 1: Break the statement into its two links. $K@L$ means K is 5 m north of L; $L * M$ means L is 5 m east of M. Step 2: Fix M at the origin $(0, 0)$. Since L is 5 m east of M, L is at $(5, 0)$. Step 3: Since K is 5 m north of L, K is at $(5, 5)$. Step 4: Compare $K(5, 5)$ with $M(0, 0)$: K is 5 m to the east and 5 m to the north of M. A point that is both north and east of another lies in the north-east

direction from it. Plain "north" and plain "east" are wrong because K is displaced in both coordinates, and "south-east" is wrong because K is above M, not below.

549. Step 1: Place C at the origin $(0, 0)$. Step 2: B is 3 m to the west of C, so B is at $(-3, 0)$. Step 3: A is 3 m to the west of B, so A is at $(-3 - 3, 0) = (-6, 0)$. Step 4: All three points lie on one east-west line, so the distance from A to C is simply $3 + 3 = 6$ m, and since A has the smaller (more negative) east-west coordinate, A lies to the west of C. Hence 6 m, west. "6 m, east" reverses the direction, and "9 m" would need a third 3 m step that the question never gives.

550. Step 1: Fix the facing direction. A person facing north has east on the right hand and west on the left hand. Step 2: Priya is to the immediate left of Rohit, so Priya stands on Rohit's left-hand side, which is Rohit's west side. Step 3: Therefore Priya is to the west of Rohit. "East" is the standard trap that comes from using the observer's own left instead of Rohit's; north and south are impossible because the whole row lies along the east-west line.

551. Step 1: List what each real direction is called: real North is called East, real East is called South, real South is called West, real West is called North. Step 2: The man reports his direction using the coded names, so we must find which real direction carries the coded name "North". Step 3: Scanning the list, only real West is called North. Step 4: Hence, although he says North, he is actually walking towards the west. Answering "North" means forgetting to decode at all, and "East" is the answer to the reverse question (what real North is called).

552. Step 1: Take A as the reference point at position 0 on an east-west number line, with east as the positive side. Step 2: B is east of A, so $B > 0$; D is east of B, so $D > B > 0$; E lies between A and B, so $0 < E < B$. Step 3: C is west of A, so $C < 0$. Step 4: Every one of A, B, D and E is at position 0 or greater, while C alone is on the negative (western) side. Hence C is the westernmost counter. The exact gaps are never needed, because C is the only counter placed west of A.

553. Step 1: Write the eight compass points in clockwise order starting from north: N, NE, E, SE, S, SW, W, NW. Consecutive points in this list are 45° apart, so a 90° turn moves exactly two places along the list. Step 2: The guard starts at SW. Turning anticlockwise means moving backwards through the clockwise list. Step 3: Moving one place back from SW gives S; moving a second place back gives SE. Step 4: So after a 90° anticlockwise turn he faces south-east. Turning 90° clockwise instead would have given north-west, which is the trap option.

554. Step 1: Split the chain into three links: $P@Q$ (P is 3 m north of Q), $Q * R$ (Q is 3 m east of R), and $R\#S$ (R is 3 m south of S). Step 2: It is easiest to start from the last named point. Put S at $(0, 0)$. Since R is 3 m south of S, $R = (0, -3)$. Step 3: Q is 3 m east of R, so $Q = (3, -3)$. Step 4: P is 3 m north of Q, so $P = (3, -3 + 3) = (3, 0)$. Step 5: Comparing $P(3, 0)$ with $S(0, 0)$, the north-south coordinates cancel out exactly, leaving P exactly 3 m to the east of S. The southward step and the northward step are equal and opposite, which is why the answer is a plain 3 m east and not a diagonal.

555. Step 1: Put B at the origin $(0, 0)$. Step 2: A is 12 m north of B, so $A = (0, 12)$. Step 3: C is 5 m east of B, so $C = (5, 0)$. Step 4: D is 12 m north of C, so $D = (5, 12)$. Step 5: E is 9 m east of D, so $E = (5 + 9, 12) = (14, 12)$. Step 6: Compare $E(14, 12)$ with $A(0, 12)$. Both have the same north-south coordinate 12, so there is no vertical gap at all; the horizontal gap is $14 - 0 = 14$ m with E on the eastern side. Hence E is 14 m due east of A. "North-east" is wrong precisely because the two 12 m northward legs make A and E level with each other.

556. Step 1: Note the reversed wording of this code: in $X + Y$ it is the SECOND letter that is north of the first. Step 2: Start at $M = (0, 0)$. From $M + N$, N is 5 m north of M, so $N = (0, 5)$. Step 3: From $N * O$, O is 5 m east of N, so $O = (5, 5)$. Step 4: From $O * P$, P is 5 m east of O, so $P = (10, 5)$. Step 5: From $P - Q$, Q is 5 m south of P, so $Q = (10, 0)$. Step 6: Compare $M(0, 0)$ with $Q(10, 0)$: the north-south coordinates are equal, and M is 10 m to the left of Q, i.e. 10 m west of Q. Reading the code in the usual first-letter-first way produces the trap answer 10 m east.

557. Step 1: Measure compass bearings clockwise from north: N = 0°, NE = 45°, E = 90°, SE = 135°, S = 180°, SW = 225°, W = 270°, NW = 315°. Step 2: Find the fixed rotation used by the code.

Real SE (135°) is called N (0°), a shift of $0 - 135 = -135°$, i.e. $+225°$ modulo 360°. Step 3: Check this shift on the second clue: real NE is 45°, and $45 + 225 = 270°$, which is West. This matches the given statement, so the shift $+225°$ is correct. Step 4: Apply it to West: $270 + 225 = 495°$, and $495 - 360 = 135°$, which is South-East. Hence West is called South-East.

558. Step 1: Put the branch gate at the origin $(0, 0)$, with east positive along the horizontal axis and north positive along the vertical axis. Step 2: Anil goes 6 km east to $(6, 0)$, then 8 km north to $(6, 8)$. Step 3: Bhavna goes 4 km west to $(-4, 0)$, then 8 km north to $(-4, 8)$. Step 4: Both finish at the same height of 8 km, so their northward legs cancel out and no Pythagoras step is needed. Step 5: The gap between them is purely horizontal: $6 - (-4) = 10$ km, with Anil on the greater (eastern) side. So Anil is 10 km due east of Bhavna. "2 km" comes from wrongly subtracting $6 - 4$ instead of treating west as negative.

559. Step 1: Put Q at the origin $(0, 0)$. Step 2: R is 6 m south of Q, so $R = (0, -6)$. Step 3: S is 4 m east of R, so $S = (4, -6)$. Step 4: T is 3 m north of S, so $T = (4, -6 + 3) = (4, -3)$. (Point P at $(-4, 0)$ is never needed; it is included only as a distractor.) Step 5: The straight-line distance from $Q(0, 0)$ to $T(4, -3)$ is $\sqrt{4^2 + 3^2} = \sqrt{16 + 9} = \sqrt{25} = 5$ m. Step 6: T is 4 m to the east and 3 m to the south of Q, so it lies in the south-east direction. The option 7 m is the trap of adding $4 + 3$ instead of using Pythagoras.

560. Step 1: Fix the facing direction. For a person facing south, the right hand points to the west and the left hand points to the east (the reverse of the more familiar north-facing case). Step 2: Kavita is to the immediate right of Manoj, so Kavita is on Manoj's western side. Step 3: Manoj is to the immediate right of Nitin, so Manoj is on Nitin's western side. Step 4: Writing the row from east to west, the order is Nitin, Manoj, Kavita. Step 5: Nitin therefore stands at the eastern end of these three, so Nitin is to the east of Kavita. Answering "west" means treating the row as though the members were facing north.

561. Step 1: Read the four links: $A@B$ (A is 3 m north of B), $B\#C$ (B is 4 m east of C), $C * D$ (C is 3 m south of D), $D!E$ (D is 4 m west of E). Step 2: Work backwards from $E = (0, 0)$. Since D is 4 m west of E, $D = (-4, 0)$. Step 3: C is 3 m south of D, so $C = (-4, -3)$. Step 4: B is 4 m east of C, so $B = (-4 + 4, -3) = (0, -3)$. Step 5: A is 3 m north of B, so $A = (0, -3 + 3) = (0, 0)$. Step 6: A has landed on exactly the same coordinates as E. The route walks 4 m west then 4 m east (cancelling), and 3 m south then 3 m north (also cancelling), so the path is a closed loop. The shortest distance is therefore 0 m. The option 5 m is the trap of blindly applying $\sqrt{3^2 + 4^2}$ without checking whether the legs cancel.

562. Step 1: Use bearings measured clockwise from north: N = 0°, NE = 45°, E = 90°, SE = 135°, S = 180°, SW = 225°, W = 270°, NW = 315°. Step 2: Find the fixed shift used by the code. Real NE (45°) is called S (180°), so coded name = real $+(180 - 45)$ = real $+135°$. Step 3: Verify on the second clue: real E is 90°, and $90 + 135 = 225°$, which is South-West. This matches the given statement, so the shift $+135°$ is confirmed. Step 4: Invert the shift to decode. The courier's stated direction is the coded name West = 270°, so his real bearing is $270 - 135 = 135°$, i.e. he is really riding south-east. Step 5: Now apply the physical turn. A turn is a real rotation of his body, not a name, so the code does not touch it: clockwise adds to the bearing, giving $135 + 90 = 225°$. Step 6: A bearing of 225° is south-west, so he finishes riding towards the south-west. The option south-east is the trap of decoding correctly but forgetting the turn, and north-east comes from applying the shift forwards ($270 + 135 = 405 \equiv 45°$) instead of inverting it.

563. Step 1: Put the house at $(0, 0)$ with east positive and north positive, then track each leg. Step 2: 15 m east takes him to $(15, 0)$. Step 3: 8 m north takes him to $(15, 8)$. Step 4: 5 m west takes him to $(10, 8)$. Step 5: 8 m south takes him to $(10, 0)$. Step 6: 4 m west takes him to $(6, 0)$. Step 7: 8 m north takes him to $(6, 8)$. Step 8: The net displacement from the house is 6 m east and 8 m north, so the straight-line distance is $\sqrt{6^2 + 8^2} = \sqrt{36 + 64} = \sqrt{100} = 10$ m. The option 6 m is his east-west displacement alone and 14 m is the trap of adding $6 + 8$, but the question asks for the direct distance, which needs Pythagoras.

564. Step 1: Put Q at the origin $(0, 0)$. Step 2: P is 8 m north of Q, so $P = (0, 8)$. Step 3: R is 6 m west of P, so $R = (-6, 8)$. Step 4: S is 10 m south of R, so $S = (-6,\ 8 - 10) = (-6, -2)$. Step 5: T is 6 m east of S, so $T = (-6 + 6,\ -2) = (0, -2)$. Step 6: Compare $T(0, -2)$ with $Q(0, 0)$. The 6 m west and the 6 m east cancel exactly, so T sits directly below Q on the same north-south line. Step 7: The vertical gap is $10 - 8 = 2$ m, and since T has the lower coordinate, T is 2 m to the south of Q. The option 2 m north reverses the sense, 4 m south comes from wrongly adding the 8 m and 10 m legs as $10 - 8 + 2$, and 10 m south-west is a doubly wrong distractor: the distance 10 m does belong to R, but $R = (-6, 8)$ is 10 m to the NORTH-west of Q, and in any case the question asks about T, not R.

565. Step 1: Use bearings clockwise from north, so north-east is 45°. A clockwise turn adds to the bearing and an anticlockwise turn subtracts from it, always reduced modulo 360°. Step 2: First turn: $45 + 135 = 180°$, so he now faces south. Step 3: Second turn: $180 - 180 = 0°$, so he now faces north. Step 4: Third turn: $0 + 90 = 90°$, so he now faces east. Step 5: Hence his final facing direction is east. Note that "south" and "north" are only intermediate positions and are offered as traps for candidates who stop after the first or second turn.

566. Step 1: Put the head office at $(0, 0)$, east positive and north positive. Step 2: Vikram goes 9 km north to $(0, 9)$, then 12 km east, finishing at $(12, 9)$. Step 3: Anjali goes 5 km south to $(0, -5)$, then 12 km east to $(12, -5)$, then 26 km north, finishing at $(12,\ -5 + 26) = (12, 21)$. Step 4: Both stop at the same east-west coordinate 12, because each covered exactly 12 km east. So the gap between them is purely north-south and no Pythagoras step is needed. Step 5: The gap is $21 - 9 = 12$ km, and since Anjali's coordinate is larger, she is 12 km due north of Vikram. The option 16 km comes from wrongly computing $21 - 5$, the option 21 km is merely Anjali's own north coordinate (her distance north of the head office) rather than the gap between the two riders, and 12 km south simply reverses the sense of a correct calculation.

567. Step 1: Read the four links: $P + Q$ (P is 6 m south of Q), $Q - R$ (Q is 6 m east of R), $R - S$ (R is 6 m east of S), $S * T$ (S is 6 m north of T). Step 2: Start from the last point, $T = (0, 0)$. Since S is 6 m north of T, $S = (0, 6)$. Step 3: R is 6 m east of S, so $R = (6, 6)$. Step 4: Q is 6 m east of R, so $Q = (12, 6)$. Step 5: P is 6 m south of Q, so $P = (12,\ 6 - 6) = (12, 0)$. Step 6: Compare $P(12, 0)$ with $T(0, 0)$. The single 6 m northward step and the single 6 m southward step cancel, so P lies on the same horizontal line as T, exactly $6 + 6 = 12$ m to its east. Step 7: The true answer, 12 m east, is not printed among the first four options: 12 m west has the wrong direction, 12 m north-east wrongly assumes a diagonal, and 18 m east wrongly adds the vertical leg. Hence "None of these" is correct.

Subtopic 2.7.1

568. For a single ordered list, Rank from top + Rank from bottom = Total +1. Here the total is 40 and the rank from top is 12. So rank from bottom $= 40 - 12 + 1 = 29$. (The common slip is to write $40 - 12 = 28$, which forgets that Ravi himself must be counted once in each direction.) Hence Ravi is 29th from the bottom, which is option C.

569. Position from left + Position from right = Total +1. With total = 25 and position from left = 9, position from right $= 25 - 9 + 1 = 17$. So Sunita is 17th from the right end, which is option B.

570. When both ranks belong to the same person, Total = Rank from top + Rank from bottom −1, because that person is counted twice in the sum. So Total $= 7 + 18 - 1 = 24$. (Writing $7 + 18 = 25$ double-counts Anil.) Hence there are 24 candidates, which is option A.

571. Here we are given a count of people behind Meena, not her rank from the back. The queue splits into three parts: the persons ahead of Meena, Meena herself, and the persons behind her. Persons ahead of her $= 11 - 1 = 10$. So Total $= 10 + 1 + 6 = 17$. Equivalently, her position from the back is $6 + 1 = 7$, and Total $= 11 + 7 - 1 = 17$. Hence option C.

572. Rank from top = Total − Rank from bottom +1 $= 45 - 22 + 1 = 24$. Now check the given options: they are 22, 23, 25 and 26. The value 24 does not appear among options A to D, so the correct choice is 'None of these', option E.

573. First bring both positions to the same reference end. Rekha's position from the left $= 20-9+1 = 12$. Kavita is at position 8 from the left and Rekha at position 12 from the left. The girls strictly between them occupy positions 9, 10 and 11, i.e. $12 - 8 - 1 = 3$ girls. Hence option B.

574. Counting from the left end, moving towards the right increases the position number. New position from left $= 14 + 5 = 19$. (Check that this is legitimate: $19 \leq 32$, so she is still inside the row.) Hence Pooja is 19th from the left, option A.

575. Step 1: Bring both positions to the same reference end. Babita's position from the left $= 27 - 13 + 1 = 15$. Step 2: Compare the two left-positions before subtracting. Anita is at 18 from the left and Babita at 15 from the left, so Babita actually stands to the *left* of Anita even though her rank was quoted from the right end. The naive subtraction $15 - 18 - 1$ is negative and meaningless; the count between two distinct positions is $|18 - 15| - 1$. Step 3: Girls strictly between them occupy positions 16 and 17, i.e. $18 - 15 - 1 = 2$ girls. Hence option A. (Had the two computed positions come out equal, the two names would denote the same girl and 'None of these' would be the only defensible choice.)

576. Step 1: Fix the two seats. Rahul's seat is the 18th from the left. Sameer's seat, counted from the left, is $45 - 25 + 1 = 21$st. Step 2: After the interchange, Sameer occupies Rahul's old seat, i.e. the 18th seat from the left. Step 3: Convert to the right end. Sameer's position from the right $= 45 - 18 + 1 = 28$. Hence option B. (Note that 25th is his old position and 21st is his old position from the left; neither is the answer asked for.)

577. Step 1: Both of the given ranks belong to Nisha, so the total number of employees $= 12+22-1 = 33$. Step 2: Now use this total for Priya. Priya's position from the right $= 33 - 15 + 1 = 19$. Hence Priya is 19th from the right end, option C.

578. Sanjay's rank from the top counts the candidates above him plus Sanjay himself: candidates above him $= 17 - 1 = 16$. Of these 16, nine are removed, leaving $16 - 9 = 7$ candidates above him. His revised rank from the top $= 7 + 1 = 8$. Equivalently, each cancellation above him pushes him up by one place: $17 - 9 = 8$. Hence option A. (The total of 60 is not needed for this part; it is given only to tempt a bottom-rank calculation.)

579. Step 1: Both ranks are Gopal's, so the present number of boys $= 19 + 10 - 1 = 28$. Step 2: The required strength is 35, so the number of boys to be added $= 35 - 28 = 7$. Hence option B. (A frequent error is to compute $19 + 10 = 29$ and answer 6.)

580. Step 1: Kiran is at position 15 from the left. The 12 persons between them occupy positions 16 to 27. Step 2: Lalit, being immediately after them, is at position $15 + 12 + 1 = 28$ from the left. Step 3: Lalit's position from the right $= 50 - 28 + 1 = 23$. Hence option A.

581. Step 1: Suresh's position from the front $= 10 + 5 = 15$. Step 2: Suresh is 7th from the end, and both of these ranks now belong to Suresh, so Total $= 15 + 7 - 1 = 21$. Hence there are 21 persons in the queue, option D. (Using Rekha's 10 with Suresh's 7 directly would be wrong, as the two ranks must belong to the same person.)

582. Step 1: Both of Rohit's ranks are within the list of successful candidates only, so the number of successful candidates $= 16 + 29 - 1 = 44$. Step 2: The failed candidates appeared but are not in that merit list, so the number who appeared $= 44 + 3 = 47$. Step 3: The absentees had registered but did not appear, so the number registered $= 47 + 5 = 52$. Hence option D.

583. Step 1: Because the rows face each other, the left end of Row A faces the right end of Row B. So the trainee sitting opposite the 9th from the left of Row A is the 9th from the right of Row B. Vandana is therefore 9th from the right end of Row B. Step 2: Convert to the left end: Vandana's position from the left of Row B $= 25 - 9 + 1 = 17$. Step 3: Anil sits 4 seats from her towards the left end, so his position from the left $= 17 - 4 = 13$. Hence option B.

584. Step 1: Farhan's position from the left $= 55 - 30 + 1 = 26$. Deepa is at position 24 from the left. Step 2: An interchange only swaps who sits where; the two occupied seats remain the 24th and

the 26th. So the number of employees between them is unchanged by the swap. Step 3: Employees strictly between positions 24 and 26 occupy position 25 only, i.e. $26 - 24 - 1 = 1$ employee. Hence option C.

585. Step 1: In Mathematics, rank from the bottom $X = 65 - 27 + 1 = 39$. Step 2: In English, rank from the top $Y = 65 - 27 + 1 = 39$. Step 3: Therefore $X - Y = 39 - 39 = 0$. The symmetry is the point: since the same total 65 and the same given rank 27 are used in both subjects, the complementary ranks must be equal, so their difference is zero regardless of the actual value. Hence option A.

586. Step 1: New total $= 39 + 6 - 4 = 41$ persons. Step 2: The 6 new persons all join to Kamal's left, so each pushes his count from the left up by one: his new position from the left $= 17 + 6 = 23$. The 4 who leave are at the right end, which does not affect his count from the left. Step 3: New position from the right $= 41 - 23 + 1 = 19$. (Consistency check: $23 \leq 41$, and the four who left were beyond position 23, so Kamal was not among them.) Hence option B.

587. Step 1: Students above Neha $= 12 - 1 = 11$; students below her $= 46 - 12 = 34$. Step 2: Count the girls. Girls above her $= 5$, girls below her $= 14$, and Neha herself is a girl, so the class has $5 + 14 + 1 = 20$ girls. Step 3: Within the girls-only ranking, exactly 14 girls rank below Neha, so her rank from the bottom among girls $= 14 + 1 = 15$. (Cross-check: her rank from the top among girls $= 5 + 1 = 6$, and $6 + 15 - 1 = 20$, the total number of girls.) Hence option D.

588. Let the total be N. Sneha's position from the top is 9. Tarun's position from the top is $N - 15 + 1 = N - 14$. The number of candidates strictly between them is $|(N - 14) - 9| - 1 = 4$, so $|N - 23| = 5$, giving $N = 28$ or $N = 18$. Both cases are genuinely possible: if $N = 28$, Tarun is 14th from the top and Sneha 9th, with positions 10 to 13 (four candidates) between them; if $N = 18$, Tarun is 4th from the top and Sneha 9th, with positions 5 to 8 (again four candidates) between them, Tarun now being above Sneha. Since the question asks for the minimum, the answer is 18, option A. (Answering 28 is the trap of assuming Sneha must rank above Tarun.)

Subtopic 2.7.2

589. From the first statement, Bhavna $<$ Amit $<$ Chetan. From the second statement, Chetan $<$ Divya $<$ Esha. Joining the two chains at Chetan gives the single order Bhavna $<$ Amit $<$ Chetan $<$ Divya $<$ Esha. The person at the extreme right of this chain is the tallest, i.e. Esha.

590. Rohit older than Sanjay and younger than Tarun gives Sanjay $<$ Rohit $<$ Tarun. Umesh younger than Sanjay gives Umesh $<$ Sanjay. Combining: Umesh $<$ Sanjay $<$ Rohit $<$ Tarun. Every person is placed in one complete chain, so nothing is undetermined; the leftmost person, Umesh, is the youngest.

591. Since no sack is heavier than W and all four weights are different, W is the heaviest. Y heavier than Z but lighter than X gives Z $<$ Y $<$ X. Placing W on top, the complete order from heaviest to lightest is W, X, Y, Z. Hence the second heaviest sack is X.

592. Meena is 3 years younger than Nisha, so Meena $= 26 - 3 = 23$ years. Priya is 4 years older than Meena, so Priya $= 23 + 4 = 27$ years.

593. For a single line of n persons, position from one end + position from the other end $= n + 1$. Here $n = 8$ and Kavita's position from the shortest end is 3, so her position from the tallest end $= 8 - 3 + 1 = 6$, i.e. sixth.

594. Apart from F there are $6 - 1 = 5$ boxes. F is heavier than exactly 3 of them, so the remaining $5 - 3 = 2$ boxes must be heavier than F. Equivalently, with 3 boxes below it F stands 4th from the lightest end, and $6 - 4 + 1 = 3$rd from the heaviest end, which again leaves exactly 2 boxes heavier than F.

595. Bipin $<$ Anil and Anil $<$ Charu give Bipin $<$ Anil $<$ Charu. Deepak $<$ Bipin and Charu $<$ Ekta complete the chain: Deepak $<$ Bipin $<$ Anil $<$ Charu $<$ Ekta. The tallest is Ekta and the second tallest is Charu. Charu is not listed in options (A)-(D), so the answer is None of these.

596. Let Chirag's age be x years. Then Bhuvan $= 2x$ and Aarti $= 2x+5$. Sum: $x+2x+(2x+5) = 55$, i.e. $5x + 5 = 55$, so $5x = 50$ and $x = 10$. Hence Bhuvan $= 20$ and Aarti $= 20 + 5 = 25$ years.

597. Take Sudha $= 160$ cm. Then Ramesh $= 160 + 8 = 168$ cm; Tanvi $= 160 - 5 = 155$ cm; Uday $= 155 + 12 = 167$ cm; Vikram $= 168 - 3 = 165$ cm. Arranging: Tanvi 155 $<$ Sudha 160 $<$ Vikram 165 $<$ Uday 167 $<$ Ramesh 168. The tallest is Ramesh at 168 cm.

598. B $= 48$ kg. A $= 48 + 4 = 52$ kg. C $= 52 - 6 = 46$ kg. D $= 46 + 3 = 49$ kg. Arranging in descending order: A 52 $>$ D 49 $>$ B 48 $>$ C 46. The third heaviest is B, weighing 48 kg.

599. Original number of candidates $= 12 + 18 - 1 = 29$. Suresh stands with 11 candidates taller than him. Three new candidates are taller than Suresh, so the number of candidates taller than him becomes $11 + 3 = 14$. Hence his position from the tallest end $= 14 + 1 = 15$th. (His position from the shortest end stays 18th, and the new total is $15 + 18 - 1 = 32 = 29 + 3$, which confirms the count.)

600. Let the present ages be M and N. Given $M = 2N$. Ten years ago: $M - 10 = 3(N - 10)$. Substituting $M = 2N$: $2N - 10 = 3N - 30$, so $N = 20$. Hence $M = 2 \times 20 = 40$ years. Check: ten years ago they were 30 and 10, and $30 = 3 \times 10$.

601. The definite chain is Lalit $<$ Kiran $<$ Om $<$ Manish. Separately, Naveen $<$ Manish, but Naveen is not compared with Om, Kiran or Lalit. So Manish is certainly the heaviest, but the second position could be Om (if Naveen is lighter than Om) or Naveen (if Naveen is heavier than Om). Since two different persons are possible, the second heaviest cannot be determined.

602. Anita $= 58$ kg. Babita $= 58 - 6 = 52$ kg. Chhaya $= 52 - 4 = 48$ kg. Average of Babita and Chhaya $= (52 + 48)/2 = 50$ kg, so Divya $= 50 + 3 = 53$ kg. Descending order: Anita 58 $>$ Divya 53 $>$ Babita 52 $>$ Chhaya 48. The third heaviest is Babita, weighing 52 kg.

603. Let the present ages be $5x$ and $4x$. After 8 years: $(5x + 8)/(4x + 8) = 6/5$. Cross-multiplying, $5(5x + 8) = 6(4x + 8)$, i.e. $25x + 40 = 24x + 48$, so $x = 8$. Present ages are Rakesh $= 40$ and Suman $= 32$, sum $= 72$. Five years from now each is 5 years older, so the required sum $= 72 + 10 = 82$ years.

604. Arrange everyone from tallest to shortest. Ravi occupies the 7th position from the tallest end, so 7 persons (including Ravi) lie from the tallest end up to Ravi. Since Ravi is taller than Sunil, Sunil lies to Ravi's right with exactly 5 persons in between. Beyond Sunil, counting from the shortest end, Sunil is 9th, so 9 persons (including Sunil) lie from Sunil to the shortest end. These three blocks do not overlap. Total $= 7 + 5 + 9 = 21$.

605. Total weight $= 5 \times 62 = 310$ kg. Removing the heaviest and lightest, the middle three weigh $310 - 78 - 45 = 187$ kg. Call them $a > b > c$ with $45 < c$ and $a < 78$. The third heaviest of the five cartons is b. To maximise b, make a as large as possible: $a = 77$. Then $b + c = 187 - 77 = 110$ with $c > 45$ and $c < b$. Taking $c = 46$ gives $b = 64$, which satisfies $64 < 77$ and $64 > 46$. Trying $b = 65$ forces $c = 45$, which is not allowed since all weights are distinct and 45 is already the lightest. Hence the maximum possible value of b is 64 kg.

606. Let the son's present age be S and the manager's be F. Given $F = 3S + 3$. Three years hence: $F + 3 = 2(S + 3) + 10$. Substituting, $3S + 3 + 3 = 2S + 6 + 10$, i.e. $3S + 6 = 2S + 16$, so $S = 10$. Then $F = 3 \times 10 + 3 = 33$ years. Check: in 3 years the ages are 36 and 13, and $2 \times 13 + 10 = 36$.

607. Chandan is heavier than exactly two friends, so from the lightest end he is 3rd, i.e. 4th from the heaviest end. Above him, Chandan $<$ Bharat $<$ Esha $<$ Farhan fills the top three positions in the order Farhan, Esha, Bharat. Below Chandan lie the remaining two, Deepa and Amit, and since Amit is heavier than Deepa the order is Amit then Deepa. The full order from heaviest to lightest is Farhan, Esha, Bharat, Chandan, Amit, Deepa. The person heavier than exactly one friend is 5th in this order, namely Amit.

608. Present total age $= 5 \times 28 = 140$ years. The youngest is 8, so the other four members total $140 - 8 = 132$ years now. Eight years ago each of those four was 8 years younger, so their total then

was $132 - 4 \times 8 = 132 - 32 = 100$ years. At that moment the family had only these 4 members, so the average age was $100/4 = 25$ years.

609. Initially Rahul's position from the heaviest end $= 45 - 19 + 1 = 27$th, so 26 trainees are heavier than him and 18 are lighter. After 10 heavier trainees leave, the number heavier than Rahul becomes $26 - 10 = 16$, so his position from the heaviest end $= 16 + 1 = 17$th. (Check: 6 lighter leave, so 12 remain lighter; the new total is $16 + 1 + 12 = 29 = 45 - 16$, consistent.)

Subtopic 2.7.3

610. For a single row, position from left + position from right = total $+1$. Here total = 40 and position from left = 17. So position from right $= 40 - 17 + 1 = 24$. A quick check: there are 16 employees to Rohit's left, so $40 - 16 - 1 = 23$ employees stand to his right, which makes him the 24th person counted from the right end. Hence option A.

611. When one person's rank is counted from both ends, that person gets counted twice, so total = (rank from top) + (rank from bottom) $- 1$. Here total $= 12 + 21 - 1 = 32$. Verify: 11 candidates are above Priya and 20 are below her, giving $11 + 1 + 20 = 32$. Hence option C.

612. Both positions are measured from the same end, so the number strictly between them is the difference of the positions minus 1. That is $15 - 7 - 1 = 7$. Listing helps: the persons standing between them occupy places $8, 9, 10, 11, 12, 13$ and 14 from the front, which is 7 customers. Hence option D.

613. Anil is 8th from the left. "6th to the right of Anil" means we add 6 to Anil's position from the left: Kavita is $8 + 6 = 14$th from the left. Now convert to the right end: position from right $= 25 - 14 + 1 = 12$. Hence option B.

614. First find the original strength of the row: total $= 11 + 20 - 1 = 30$. Adding 5 trainees at the left end simply increases the strength: $30 + 5 = 35$. (Ramesh's position from the right stays 20th, while his position from the left becomes $11 + 5 = 16$th, and $16 + 20 - 1 = 35$ confirms the count.) Hence option D.

615. Bring both positions to a common end. Sohan is 12th from the right, so from the left he is $30 - 12 + 1 = 19$th. Mohan is 12th from the left. Number of employees strictly between them $= 19 - 12 - 1 = 6$. Hence option A.

616. Write each statement as an inequality chain. "Rakesh more than Sunil but less than Mohit" gives Mohit > Rakesh > Sunil. "Deepa more than Mohit but less than Vinod" gives Vinod > Deepa > Mohit. Joining at Mohit: Vinod > Deepa > Mohit > Rakesh > Sunil. The highest is Vinod and the second highest is Deepa. Hence option B.

617. Work in terms of position from the left end throughout. Ravi is 22nd from the left. Meena is 8th to Ravi's right, so Meena is $22 + 8 = 30$th from the left. Sonia is 5th to Meena's left, so Sonia is $30 - 5 = 25$th from the left. Converting to the right end: $45 - 25 + 1 = 21$. Hence option C.

618. After the interchange Anil occupies the seat that Sunil originally occupied. That seat is 15th from the right end, and we are told the same seat is 22nd from the left end. So the total $= 22 + 15 - 1 = 36$. (Anil's original data, 12th from the left, is only there to check consistency: $12 < 22$, so Anil genuinely moved rightwards, which is possible.) Hence option A.

619. Convert Pooja's position to the left end: $52 - 26 + 1 = 27$, so Pooja is 27th from the left. Kiran is 19th from the left. The number of employees strictly between them $= 27 - 19 - 1 = 7$. Since 7 does not appear among options A to D, the correct choice is "None of these". Hence option E.

620. Amit's two positions fix the strength of the row: total $= 10 + 15 - 1 = 24$. Now bring Bina to the left end: Bina is $24 - 12 + 1 = 13$th from the left. Amit is 10th from the left. Persons strictly between them $= 13 - 10 - 1 = 2$ (they occupy the 11th and 12th places from the left). Since the total is known, the answer is determinate. Hence option B.

621. Chain the statements: $Q > R$, $R > S$, $S > P$ and $T > Q$. This gives the complete order $T > Q > R > S > P$. So R lies strictly between $P = 120$ and $Q = 260$. Test the options: $110 < 120$ is too small; 275 and 305 exceed 260; 260 equals Q, which is not allowed since all counts are different. Only 230 satisfies $120 < R < 260$, and it also leaves room for S (any value between 120 and 230). Hence option D.

622. Sanjay is 34th from the top, so Vandana is 34th from the bottom. Converting Vandana's rank to the top: rank from top $= 90 - 34 + 1 = 57$. Hence option B. (Note the two are different officers: Sanjay is 34th from the top while Vandana is 57th from the top.)

623. Initially Nitin's position from the right $= 35 - 14 + 1 = 22$nd, meaning 21 employees stand to his right. The 3 employees who leave from his left do not change how many people are to his right, so they do not affect the count from the right end. The 4 employees who leave from his right reduce that number to $21 - 4 = 17$. So Nitin is now $17 + 1 = 18$th from the right end. Hence option C.

624. Convert both to positions from the left. Ramesh is 25th from the left. Sheela is 20th from the right, so from the left she is $60 - 20 + 1 = 41$st. The midpoint of positions 25 and 41 is $\dfrac{25 + 41}{2} = 33$, so Tarun is 33rd from the left (there are 7 persons between him and each of them, confirming he is exactly midway). Position from the right $= 60 - 33 + 1 = 28$. Hence option C.

625. List the given relations: Chetan > Anita, Chetan > Dinesh, Bhaskar > Chetan, Anita > Esha, Esha > Farhan, Dinesh > Esha. Bhaskar > Chetan > Dinesh places Bhaskar and Chetan above Dinesh, so those two are certain. Esha and Farhan are below Dinesh, since Dinesh > Esha > Farhan. That leaves only Anita. Nothing links Anita and Dinesh, either directly or through a chain: both sit below Chetan and both sit above Esha, so either order is consistent. For instance Bhaskar > Chetan > Anita > Dinesh > Esha > Farhan satisfies every condition, and so does Bhaskar > Chetan > Dinesh > Anita > Esha > Farhan. Hence Anita cannot be counted, and exactly 2 employees – Bhaskar and Chetan – definitely draw more than Dinesh. Note that the count itself is fixed, so "Cannot be determined" is wrong. Hence option B.

626. Ankit is 17th from the top. Since 6 trainees lie between them and Bhavna is below Ankit, Bhavna's rank from the top $= 17 + 6 + 1 = 24$. Bhavna is also 12th from the bottom, so the class strength $= 24 + 12 - 1 = 35$. Check: 23 trainees are above Bhavna and 11 below her, giving $23 + 1 + 11 = 35$. Hence option A.

627. Naveen's position from the left $= 30 - 9 + 1 = 22$nd, and Mira is 12th from the left. So Om occupies one of the places from 13th to 21st from the left – nine possible places. Nothing in the data narrows this down to a single place, so a unique position cannot be fixed. Options A, B and C each name one arbitrary place out of nine, and option D names two of the nine; none of them is forced by the data. Hence option E.

628. Rohan's original position from the back $= 48 - 19 + 1 = 30$th, i.e. 29 customers stand behind him. The 7 customers served were ahead of him, so they do not change the number behind him – his position from the back stays 30th. The 5 new customers join at the back, so now $29 + 5 = 34$ customers stand behind him, making him $34 + 1 = 35$th from the back. Hence option C.

629. Sameer is 16th from the left, so the number of employees to his left is $16 - 1 = 15$. Let the number to his right be x. The condition gives $15 = \dfrac{x}{3}$, so $x = 15 \times 3 = 45$. Total = (left) + (Sameer) + (right) $= 15 + 1 + 45 = 61$. Check: Sameer's position from the right is $45 + 1 = 46$th, and $16 + 46 - 1 = 61$. Hence option B.

630. Convert each sentence into a chain. From the first: Tarun > Ravi > Sunil. From the second: Vijay > Umesh > Tarun. From the third: Sunil > Wasim > Yash. Joining them at the common names Tarun and Sunil gives the full order Vijay > Umesh > Tarun > Ravi > Sunil > Wasim > Yash. Counting from the top: 1st Vijay, 2nd Umesh, 3rd Tarun, 4th Ravi. Hence option B.

Subtopic 2.8.1

631. Number the positions from the left: 1–7, 2–B, 3–@, 4–3, 5–K, 6–#, 7–9, 8–M, 9–5, 10–%, 11–T, 12–2, 13–\$, 14–P, 15–8. Now test every digit against the element standing immediately to its right. 7 (pos. 1) is followed by B, a letter – counted. 3 (pos. 4) is followed by K, a letter – counted. 9 (pos. 7) is followed by M, a letter – counted. 5 (pos. 9) is followed by %, a symbol – rejected. 2 (pos. 12) is followed by \$, a symbol – rejected. 8 (pos. 15) is the last element, so nothing follows it – rejected. The qualifying digits are 7, 3 and 9, i.e. three in all.

632. First locate the fourth element from the left end. Counting M, 4, %, K, the fourth element is K, standing at position 4. Moving six places to the right of position 4 takes us to position $4 + 6 = 10$. Counting on from position 5: position 5 is 7, position 6 is @, position 7 is P, position 8 is 2, position 9 is #, position 10 is R. Hence the required element is R. Note that 9 occupies position 11, which is seventh and not sixth to the right, so it is only a trap option.

633. List the symbols together with the element standing immediately to their left. The symbols are # (pos. 3), @ (pos. 5), % (pos. 9), \$ (pos. 12) and & (pos. 16). Checking each: # is preceded by J, a letter – rejected; @ is preceded by 8, a digit – counted; % is preceded by L, a letter – rejected; \$ is preceded by N, a letter – rejected; & is preceded by 7, a digit – counted. Only @ and & qualify, so the answer is two.

634. The letters in the arrangement are D (pos. 2), K (pos. 5), R (pos. 8), M (pos. 10), T (pos. 14) and P (pos. 16). Examine what stands immediately to the left of each. D is preceded by @, a symbol – counted. K is preceded by #, a symbol – counted. R is preceded by %, a symbol – counted. M is preceded by 8, a digit – rejected. T is preceded by &, a symbol – counted. P is preceded by 6, a digit – rejected. Four letters (D, K, R and T) qualify.

635. The arrangement contains 15 elements. Counting from the right end: the first is B, the second is 5, the third is T, the fourth is % and the fifth is 2. Equivalently, the nth element from the right of a 15-element series is the $(15 - n + 1)$th from the left, so the fifth from the right is the $15 - 5 + 1 = 11$th from the left, which is 2. Hence the required element is 2.

636. The digits are 4 (pos. 2), 7 (pos. 4), 2 (pos. 7), 5 (pos. 10), 8 (pos. 13) and 3 (pos. 16). Check the element immediately to the right of each. 4 is followed by # – counted. 7 is followed by K, a letter – rejected. 2 is followed by M, a letter – rejected. 5 is followed by \$ – counted. 8 is followed by & – counted. 3 is the last element, so nothing follows it – rejected. Exactly three digits qualify. Since three is not offered in options (A) to (D), the correct response is "None of these".

637. Remove every symbol (@, #, \$, % and &) and keep the remaining elements in their original order. The reduced series is P, 2, K, 5, M, 7, R, 3, T, 9, W. Counting from the left: first P, second 2, third K, fourth 5, fifth M, sixth 7. Hence 7 is sixth from the left end. M is fifth and R is seventh, which is why they appear as distractors.

638. We need the pattern letter–digit–symbol, so take each digit and check both of its neighbours. 4 (pos. 2): preceded by M, a letter, and followed by @, a symbol – counted. 7 (pos. 4): preceded by @, a symbol – rejected at the first condition. 2 (pos. 6): preceded by K, a letter, and followed by #, a symbol – counted. 9 (pos. 10): preceded by %, a symbol – rejected. 5 (pos. 12): preceded by T, a letter, and followed by \$, a symbol – counted. 3 (pos. 16): preceded by &, a symbol – rejected. 8 (pos. 18): preceded by N, a letter, but it is the last element so nothing follows it – rejected. Three digits satisfy both conditions.

639. We need the pattern symbol–letter–digit. Test each letter. K (pos. 2): preceded by @ and followed by 5 – counted. R (pos. 4): preceded by 5, a digit – rejected. M (pos. 6): preceded by # and followed by 3 – counted. B (pos. 8): preceded by 3, a digit – rejected. P (pos. 11): preceded by 7, a digit – rejected. T (pos. 13): preceded by \$ and followed by 2 – counted. W (pos. 16): preceded by & and followed by 9 – counted. D (pos. 18): preceded by 9, a digit – rejected. Four letters (K, M, T and W) qualify.

640. The fourth element from the left stands at position 4 and the twelfth from the left stands at position 12. The position exactly midway between them is $\frac{4+12}{2} = 8$. Now count up to position 8: 1–3, 2–K, 3–@, 4–7, 5–M, 6–#, 7–2, 8–P. Hence P is the required element. Position 7 holds 2 and position 9 holds %, which is why those two appear as distractors.

641. Step 1: drop every digit (5, 2, 7, 3, 9 and 4). The remaining elements, in order, are R, @, K, #, M, %, P, \$, T, &, B – eleven elements in all. Step 2: the third element from the left of this new series is K, at position 3. Step 3: fourth to the right of position 3 is position $3 + 4 = 7$. Counting on: position 4 is #, position 5 is M, position 6 is % and position 7 is P. The required element is P.

642. We are looking for the pattern symbol–X–symbol, where X may be a digit or a letter. Scan every element that has neighbours on both sides. 5 (pos. 2): between @ and # – counted. K (pos. 4): between # and % – counted. 2 (pos. 6): between % and \$ – counted. M (pos. 8): between \$ and 7 – rejected. 7 (pos. 9): between M and & – rejected. T (pos. 11): between & and # – counted. 9 (pos. 13): between # and P – rejected. P (pos. 14): between 9 and @ – rejected. The first and the last elements have only one neighbour each and are rejected. Four elements (5, K, 2 and T) qualify.

643. Step 1: list the symbols from the left – @ (pos. 3), # (pos. 5), % (pos. 9), \$ (pos. 11) and & (pos. 14). The third symbol from the left is %, at position 9. Step 2: list the digits from the right – 8 (pos. 18), 3 (pos. 16), 5 (pos. 13), 7 (pos. 10), and so on. The second digit from the right is 3, at position 16. Step 3: the elements lying strictly between positions 9 and 16 occupy positions 10 to 15, that is $16 - 9 - 1 = 6$ elements, namely 7, \$, T, 5, & and B. Hence six.

644. Examine the three parts of each label separately. First letters: B, F, J occupy positions 2, 6 and 10 in the alphabet, increasing by 4 each time, so the next first letter is at position $10 + 4 = 14$, namely N. Middle numbers: 2, 6, 10 are exactly the alphabet positions of the first letters, so the next number is 14. Third letters: D, H, L are at positions 4, 8 and 12, each being the first letter's position plus 2; the next is at position $14 + 2 = 16$, namely P. Putting the three parts together gives $N14P$. Option (A) uses the wrong letters, (C) uses 13 in place of 14, and (D) starts with M (position 13, breaking the gap of 4), so all are rejected.

645. The five interchanges taken together simply reverse the first ten elements, while positions 11 to 15 remain untouched. The original first ten elements are M, 3, @, K, 7, #, P, 2, %, R; reversed they become R, %, 2, P, #, 7, K, @, 3, M. So the new arrangement reads R, %, 2, P, #, 7, K, @, 3, M, 5, \$, T, 9, &. The ninth element from the left now stands at position 9; fourth to its left is position $9 - 4 = 5$. Position 5 of the new arrangement holds #. Hence the required element is #.

646. We need the pattern digit–symbol–letter. Take each symbol in turn. @ (pos. 2): preceded by 7, a digit, and followed by K, a letter – counted. % (pos. 5): preceded by 3, a digit, and followed by M, a letter – counted. \$ (pos. 7): preceded by M, a letter – rejected. # (pos. 10): preceded by T, a letter – rejected. & (pos. 12): preceded by 2, a digit, and followed by B, a letter – counted. @ (pos. 16): preceded by P, a letter – rejected. Exactly three symbols (@, % and &) satisfy both conditions.

647. Step 1: among the single-digit numbers the perfect squares are 1, 4 and 9, since $1^2 = 1$, $2^2 = 4$ and $3^2 = 9$. In the arrangement these occur as 4 (pos. 1), 9 (pos. 4) and 1 (pos. 11). Drop all three. The new arrangement is K, @, M, 3, #, P, 7, %, T, \$, 6, B, &, 5, R, 2, N – seventeen elements. Step 2: the sixth element from the left of this new series is P, at position 6. Step 3: fifth to the right of position 6 is position $6 + 5 = 11$. Counting on: position 7 is 7, position 8 is %, position 9 is T, position 10 is \$ and position 11 is 6. The required element is 6.

648. Split each code into its three parts. First letters: D, H, L occupy alphabet positions 4, 8 and 12, increasing by 4, so the next is position 16, namely P. Middle numbers: 4, 9, 16 are 2^2, 3^2 and 4^2, so the next is $5^2 = 25$. Third letters: G, K, O occupy positions 7, 11 and 15, each being the corresponding first letter's position plus 3; the next is position $16 + 3 = 19$, namely S. Combining the parts, the fourth code is $P25S$. Option (B) breaks the pattern of squares, (C) starts from the wrong letter, and (D) ends in R (position 18, a gap of 2 instead of 3).

649. Step 1: drop every symbol. The resulting arrangement is K, 5, M, 3, P, 7, R, T, 2, 6, B, 9, W, N, 4, D – sixteen elements. Step 2: test each digit of this new series for letters on both sides. 5 (pos. 2): between K and M – counted. 3 (pos. 4): between M and P – counted. 7 (pos. 6): between P and R – counted. 2 (pos. 9): between T and 6, and the right neighbour is a digit – rejected. 6 (pos. 10): between 2 and B, and the left neighbour is a digit – rejected. 9 (pos. 12): between B and W – counted. 4 (pos. 15): between N and D – counted. Five digits qualify. Note that dropping the symbols first is essential: in the original arrangement 5 (next to @), 9 (next to \$) and 4 (next to @) each have a symbol as one neighbour and would fail, so only 3 and 7 would have qualified without the drop step.

650. When a series is reversed, the element that follows a given element in the new order is exactly the element that preceded it in the original order. So the question reduces to this: in the original arrangement, how many letters are immediately preceded by a digit? Test each letter. M (pos. 2) is preceded by 3 – counted. K (pos. 4) is preceded by @ – rejected. P (pos. 6) is preceded by 7 – counted. T (pos. 9) is preceded by 2 – counted. B (pos. 12) is preceded by 5 – counted. R (pos. 14) is preceded by \$ – rejected. W (pos. 16) is preceded by 9 – counted. N (pos. 18) is preceded by & – rejected. D (pos. 20) is preceded by 4 – counted. Six letters (M, P, T, B, W and D) qualify.

651. Step 1: drop the symbols @, #, %, \$, & and the second @. The remaining elements, in the original order, are P, 4, 9, K, M, 2, T, 5, B, 7, R, 3, W, 8 – fourteen elements. Step 2: write these in reverse order: 8, W, 3, R, 7, B, 5, T, 2, M, K, 9, 4, P. Step 3: count eight places from the left of this reversed series – 8, W, 3, R, 7, B, 5, T. The eighth element is T. Equivalently, the eighth from the left of the reversed series is the eighth from the right of the fourteen-element series, i.e. its $14 - 8 + 1 = 7$th element, which is again T.

Subtopic 2.8.2

652. Write positions: $A = 1, B = 2, \ldots, Z = 26$. The 12th letter from the left is L (position 12). Moving 5 places to the right means adding 5 to the position: $12 + 5 = 17$. The letter at position 17 is Q. Hence the required letter is Q. ($P = 16$ would be only 4 to the right, $R = 18$ would be 6 to the right.)

653. Look at the two letters separately. First letters: $A(1), B(2), C(3), D(4)$ increase by 1, so the next is $E(5)$. Second letters: $Z(26), Y(25), X(24), W(23)$ decrease by 1, so the next is $V(22)$. Combining, the missing term is EV. (Note that each pair also satisfies the opposite-letter rule, sum of positions $= 27$: $5 + 22 = 27$, which confirms EV.)

654. Write the positional value of each letter: $B = 2$, $A = 1$, $N = 14$, $K = 11$. Adding, 2+1+14+11 = 28. The value 28 is not listed among options A to D, so the correct choice is 'None of these'. (A common slip is to take $N = 13$, which wrongly gives 27.)

655. Convert to positions: $C = 3$, $F = 6$, $I = 9$, $L = 12$. The difference between consecutive terms is constant: $6 - 3 = 3$, $9 - 6 = 3$, $12 - 9 = 3$. So the next position is $12 + 3 = 15$, and the letter at position 15 is O. Hence the answer is O.

656. The 8th letter is H and the 18th letter is R. The letter exactly midway occupies the average of the two positions: $\dfrac{8 + 18}{2} = 13$. The letter at position 13 is M. Hence M is the required letter. ($L = 12$ and $N = 14$ are one step away on either side.)

657. Two letters are 'opposite' when the sum of their positions is 27, that is, the opposite of the nth letter is the $(27 - n)$th letter. Here G is at position 7, so its opposite is at position $27 - 7 = 20$. The letter at position 20 is T. Hence T is the answer. ($S = 19$ is opposite to H, and $U = 21$ is opposite to F.)

658. Positions are $B = 2$, $D = 4$, $G = 7$, $K = 11$. The gaps are $4 - 2 = 2$, $7 - 4 = 3$, $11 - 7 = 4$; they increase by 1 each time. The next gap must be 5, giving position $11 + 5 = 16$. The letter at position 16 is P. Hence the answer is P.

659. The letters of $BANKING$ are B, A, N, K, I, N, G (seven letters, with N repeated). Arranged alphabetically they become A, B, G, I, K, N, N. Counting from the right end: first is N, second is N, third is K. Hence the required letter is K. (Forgetting that N occurs twice makes students answer I.)

660. Step 1: The 4th letter from the right end is at position $26 - 4 + 1 = 23$, which is W. Step 2: Moving 9 places to the left of W means subtracting 9 from its position: $23 - 9 = 14$. The letter at position 14 is N. Hence the answer is N. (Taking $26 - 4 = 22$ in Step 1 is the usual error and leads to M.)

661. First letters: $A(1), F(6), K(11), P(16)$ increase by 5, so the next first letter is at position $16+5 = 21$, that is U. Second letters: $C(3), H(8), M(13), R(18)$ also increase by 5, so the next is at position $18+5 = 23$, that is W. Also, within each pair the second letter is 2 ahead of the first, and $21+2 = 23$ confirms this. The required term is UW, which is not listed in options A to D, so the answer is 'None of these'.

662. Letters of $DEPOSIT$: D, E, P, O, S, I, T. Consonants (D, P, S, T) move one step back: $D \to C$, $P \to O$, $S \to R$, $T \to S$. Vowels (E, O, I) move one step forward: $E \to F$, $O \to P$, $I \to J$. The new set of letters is C, F, O, P, R, J, S. Arranged alphabetically: C, F, J, O, P, R, S. The third letter from the left is J.

663. Value of $DEBIT$: $D = 4$, $E = 5$, $B = 2$, $I = 9$, $T = 20$, so the total is $4+5+2+9+20 = 40$. Value of $CREDIT$: $C = 3$, $R = 18$, $E = 5$, $D = 4$, $I = 9$, $T = 20$, so the total is $3+18+5+4+9+20 = 59$. The required excess is $59 - 40 = 19$.

664. Positions: $Z = 26$, $W = 23$, $S = 19$, $N = 14$. The letters move backwards by $26 - 23 = 3$, then $23 - 19 = 4$, then $19 - 14 = 5$. The gaps grow by 1, so the next step back is 6: $14 - 6 = 8$. The letter at position 8 is H. Hence the answer is H. (Subtracting 5 again would wrongly give I.)

665. Write the word with word-positions and alphabet-positions: $B(1, 2)$, $A(2, 1)$, $N(3, 14)$, $K(4, 11)$, $E(5, 5)$, $R(6, 18)$, $S(7, 19)$. A pair qualifies when the gap of word-positions equals the gap of alphabet-positions. Checking: B–A has word gap 1 and alphabet gap $|2 - 1| = 1$, so it qualifies. R–S has word gap 1 and alphabet gap $|19 - 18| = 1$, so it qualifies. Every other pair fails, for example A–E has word gap 3 but alphabet gap 4, and N–K has word gap 1 but alphabet gap 3. Hence exactly two pairs qualify.

666. After reversing only the first thirteen letters, the arrangement reads $M\,L\,K\,J\,I\,H\,G\,F\,E\,D\,C\,B\,A\,N\,O\,P\,Q\,R\,S$ Step 1: the 5th letter from the left is I (place 5). Step 2: 8 places to the right of place 5 is place $5 + 8 = 13$, which holds A. Step 3: 6 places to the left of place 13 is place $13 - 6 = 7$, which holds G. Hence the answer is G.

667. The eight letters of $RECOVERY$ are R, E, C, O, V, E, R, Y, with E and R each appearing twice. Arranged alphabetically they are C, E, E, O, R, R, V, Y occupying places 1 to 8. Step 1: the fourth letter from the right end is at place $8 - 4 + 1 = 5$, which is R. Step 2: three places to the left of place 5 is place $5 - 3 = 2$, which is E. Hence the answer is E. (A common slip is to read the fourth letter from the right as place $8 - 4 = 4$, that is O, and then move three places left to place 1, wrongly giving C.)

668. Positions in $AUDIT$: $A = 1$, $U = 21$, $D = 4$, $I = 9$, $T = 20$. Adding 3 to each: $1 + 3 = 4$ (D), $21 + 3 = 24$ (X), $4 + 3 = 7$ (G), $9 + 3 = 12$ (L), $20 + 3 = 23$ (W). The new letters are D, X, G, L, W; in alphabetical order they are D, G, L, W, X. The first letter is D with value 4 and the last is X with value 24, so the required sum is $4 + 24 = 28$.

669. Positions: $B = 2$, $E = 5$, $J = 10$, $Q = 17$. The differences are $5 - 2 = 3$, $10 - 5 = 5$, $17 - 10 = 7$, that is, successive odd numbers. The next difference must be 9, giving $17 + 9 = 26$. The letter at position 26 is Z. (Equivalently the positions are $n^2 + 1$ for $n = 1, 2, 3, 4, 5$: $2, 5, 10, 17, 26$.) Hence the answer is Z.

670. This is an alternating series, so separate the terms in odd places from those in even places. Terms in odd places are A, F, K with positions 1, 6, 11, increasing by 5 each time. Terms in even places are C, D, E with positions 3, 4, 5, increasing by 1 each time. The required term is the seventh, which lies in an odd place, so it continues the first sequence: $11 + 5 = 16$. The letter at position 16 is P. Hence the answer is P. (Continuing the even-place sequence instead would give F, and treating the series as a single chain would give the unrelated value L.)

671. In the reversed arrangement the letter occupying place k is the letter whose normal alphabet value is $27-k$. Step 1: the 15th letter from the left has value $27-15 = 12$, which is L. Step 2: 7 places to the right of place 15 is place $15+7 = 22$, whose letter has value $27-22 = 5$, which is E. Hence the answer is E. (A common slip is to locate L correctly in Step 1 but then step 7 places forward in the normal alphabet, $12+7 = 19$, wrongly giving S.)

672. The original word has nine letters: P, O, R, T, F, O, L, I, O, in which O occurs three times. Arranged alphabetically they become F, I, L, O, O, O, P, R, T. Now compare the two rows place by place: place 1 has P against F, place 2 has O against I, place 3 has R against L, place 4 has T against O, place 5 has F against O, place 6 has O against O, place 7 has L against P, place 8 has I against R, and place 9 has O against T. Only place 6 carries the same letter in both rows. Hence exactly one letter keeps its position. (Overlooking that O appears three times, so that places 4, 5 and 6 of the sorted row are all O, is the usual source of error.)

Subtopic 2.8.3

673. Number the elements from the left: (1) 4, (2) @, (3) R, (4) 9, (5) #, (6) T, (7) 2, (8) %, (9) 7, (10) M, (11) &, (12) 5, (13) !, (14) P, (15) 3, (16) *, (17) K. Now test each digit against the element standing immediately to its right. 4 is followed by @, a symbol – counted. 9 is followed by #, a symbol – counted. 2 is followed by %, a symbol – counted. 7 is followed by M, a letter – rejected. 5 is followed by !, a symbol – counted. 3 is followed by *, a symbol – counted. The digits that qualify are 4, 9, 2, 5 and 3, that is 5 digits in all.

674. List the letters with the element standing immediately to their left. M is the very first element, so it has nothing before it – rejected. P has @ before it, a symbol – counted. K has 2 before it, a digit – rejected. B has # before it, a symbol – counted. T has 9 before it, a digit – rejected. R has & before it, a symbol – counted. D has * before it, a symbol – counted. The qualifying letters are P, B, R and D, so the required count is 4.

675. The symbols present are &, @, #, % , ! and *. Examine the element that comes immediately after each of them. & is followed by L, a letter – rejected. @ is followed by 5, a digit – counted. # is followed by 4, a digit – counted. % is followed by M, a letter – rejected. ! is followed by 3, a digit – counted. * is followed by 6, a digit – counted. Hence @, #, ! and * qualify, giving a count of 4.

676. The digits in the arrangement are 4, 9, 3, 7, 2, 5 and 8. Check what stands immediately to the left of each. 4 is preceded by K, a letter – counted. 9 is preceded by @, a symbol – rejected. 3 is preceded by #, a symbol – rejected. 7 is preceded by &, a symbol – rejected. 2 is preceded by % , a symbol – rejected. 5 is preceded by R, a letter – counted. 8 is preceded by N, a letter – counted. Only 4, 5 and 8 qualify, so the answer is 3.

677. A letter qualifies only if BOTH neighbours satisfy the condition, so check the left neighbour and the right neighbour together. P: left # (symbol), right 4 (digit) – counted. M: left 4 (digit) – rejected at once. T: left @ (symbol), right 7 (digit) – counted. R: left & (symbol), right 2 (digit) – counted. B: left % (symbol) but right K (letter) – rejected. K: left B (letter) – rejected. D: left ! (symbol), right 3 (digit) – counted. F: left * (symbol), right 8 (digit) – counted. The qualifying letters are P, T, R, D and F, that is 5 letters.

678. The symbols are @, #, % , &, ! and *. Look at the element immediately to the left of each. @ is preceded by T, a letter – counted. # is preceded by K, a letter – counted. % is preceded by 3, a digit – rejected. & is preceded by M, a letter – counted. ! is preceded by P, a letter – counted. * is

preceded by Q, a letter – counted. Five symbols, namely @, #, &, ! and *, satisfy the condition, so the answer is 5.

679. Scan the sequence from left to right and stop at every place where one digit is immediately followed by another digit. The pairs are: (3, 5) at the start – counted; (2, 4) coming after K – counted; (9, 8) coming after # – counted; (6, 1) coming after % – counted; (5, 2) at the extreme right end – counted. All other adjacent positions have a letter or a symbol on at least one side, for example 5 is followed by @, 7 by K, 4 by #, 8 by M, 1 by T and 4 by R. Hence there are 5 such pairs.

680. Step 1: Remove the symbols @, #, % , &, ! and *. The remaining elements, in the same order, are: 5, K, 3, M, 8, 2, R, T, 7, B, 4, 9, P, Q, 6 – fifteen elements in all. Step 2: In this new arrangement check the neighbour on the right of every digit. 5 is followed by K – counted. 3 is followed by M – counted. 8 is followed by 2, a digit – rejected. 2 is followed by R – counted. 7 is followed by B – counted. 4 is followed by 9, a digit – rejected. 9 is followed by P – counted. 6 is the last element and has nothing after it – rejected. Therefore 5 digits qualify.

681. We need blocks of the pattern letter, digit, symbol read left to right. Start from every letter and test the next two elements. K, 4, @ – letter, digit, symbol – counted. M, 3, # – letter, digit, symbol – counted. B, 2, R – the third element is a letter – rejected. R is followed by % , not a digit – rejected. T, 5, & – letter, digit, symbol – counted. P, 8, Q – the third element is a letter – rejected. Q, 9, ! – letter, digit, symbol – counted. The four qualifying blocks are (K 4 @), (M 3 #), (T 5 &) and (Q 9 !), so the answer is 4.

682. Step 1: The arrangement has 20 elements. Counting from the left, the fifth element is @, which occupies position 5. Step 2: The sixth element from the right end occupies position $20 - 6 + 1 = 15$ from the left, which is the symbol !. Step 3: The elements strictly between them are those at positions 6 to 14, and the number of such positions is $14 - 6 + 1 = 9$. These are M, 5, K, % , 9, T, &, 4 and B. Hence 9 elements lie between them.

683. Step 1: First collect every letter whose left neighbour is a symbol. P has % before it, M has @ before it, R has # before it, B has & before it, D has ! before it and F has * before it. The letters K, T and Q fail this first test because their left neighbours are 4, R and D respectively. Step 2: From the six shortlisted letters remove those whose right neighbour is a digit. P is followed by 4 – removed. M is followed by 7 – removed. R is followed by T, a letter – retained. B is followed by 9 – removed. D is followed by Q, a letter – retained. F is followed by 5 – removed. Only R and D survive both conditions, so the answer is 2.

684. Step 1: Note the shortcut. When the order is reversed, the element that was on the right of a given element comes to its left. So a symbol will be preceded by a digit in the reversed arrangement exactly when that symbol is followed by a digit in the original arrangement. Step 2: In the original arrangement check the right neighbour of every symbol. @ is followed by M, a letter – rejected. # is followed by 8, a digit – counted. % is followed by K, a letter – rejected. & is followed by 5, a digit – counted. ! is followed by 9, a digit – counted. * is followed by 4, a digit – counted. Four symbols qualify, so in the reversed arrangement 4 symbols will have a digit immediately before them.

685. Test each digit for both conditions together. 5: left # (symbol), right M (letter) – counted. 2: left M, a letter – rejected. 7: left @ (symbol), right R (letter) – counted. 4: left % (symbol), right B (letter) – counted. 9: left ! (symbol), right K (letter) – counted. 3: left K, a letter – rejected. 6: left & (symbol), right P (letter) – counted. 8: left * (symbol), right Q (letter) – counted. The qualifying digits are 5, 7, 4, 9, 6 and 8, so the count is 6.

686. Step 1: Drop the letters K, M, T, B, R, P and Q. What remains, in order, is: 9, @, #, 2, % , 7, &, 5, !, 3, *, 8. Step 2: In this reduced arrangement inspect the left neighbour of each symbol. @ has 9 on its left – counted. # has @ on its left, another symbol – rejected. % has 2 on its left – counted. & has 7 on its left – counted. ! has 5 on its left – counted. * has 3 on its left – counted. Note that dropping the letters brought @ and # next to each other, which is why # fails. Hence 5 symbols qualify.

687. Step 1: Find the symbols that have a digit on both sides. @ lies between 4 and 7. # lies between 6 and 5. % lies between 3 and 9. & lies between 2 and 8. ! lies between 1 and 6. * lies between 7 and 4. All six symbols pass this first test. Step 2: Now apply the sum condition, remembering that the sum must be strictly greater than 10. For @, $4 + 7 = 11 > 10$ – counted. For #, $6 + 5 = 11 > 10$ – counted. For % , $3 + 9 = 12 > 10$ – counted. For &, $2 + 8 = 10$, which is not greater than 10 – rejected. For !, $1 + 6 = 7$ – rejected. For *, $7 + 4 = 11 > 10$ – counted. Therefore 4 symbols satisfy both conditions.

688. Step 1: Drop the digits 3, 5, 7, 2, 9 and 4. The remaining elements, in the original order, are: M, @, K, #, P, T, % , B, R, &, D, Q, !, F, *. Step 2: Reversal turns a right neighbour into a left neighbour. So a letter will have a symbol before it after reversal exactly when it has a symbol after it in the list of Step 1. Step 3: Check the right neighbour of each letter in that list. M is followed by @ – counted. K is followed by # – counted. P is followed by T, a letter – rejected. T is followed by % – counted. B is followed by R, a letter – rejected. R is followed by & – counted. D is followed by Q, a letter – rejected. Q is followed by ! – counted. F is followed by * – counted. Six letters, namely M, K, T, R, Q and F, qualify, so the answer is 6.

689. Step 1: Shortlist the letters whose left neighbour is a symbol. R has # before it, K has @ before it, M has % before it, B has & before it, T has ! before it and P has * before it. The letters Q and D fail because their left neighbours are P and 2 respectively. Step 2: Now the right neighbour of each shortlisted letter must be a digit divisible by 3, that is one of 3, 6 or 9. R is followed by 6, and $6 = 3 \times 2$ – counted. K is followed by 4, which is not a multiple of 3 – rejected. M is followed by 9, and $9 = 3 \times 3$ – counted. B is followed by 7 – rejected. T is followed by 3 – counted. P is followed by 5 – rejected. Only R, M and T survive, so the required count is 3.

690. Step 1: Locate the third digit from the left. Reading digits from the left they are 5 (position 1), 7 (position 4) and 2 (position 7). So the reference point is the digit 2 at position 7. Step 2: Locate the fourth letter from the right. Reading letters from the right end they are D (position 22), Q (position 20), P (position 17) and T (position 14). So the second reference point is T at position 14. Step 3: The elements strictly between positions 7 and 14 are those at positions 8 to 13, namely R, % , 9, B, & and 4. Among these only % and & are symbols. Hence 2 symbols lie between them.

691. Step 1: The arrangement has 21 elements, so every third element from the left means the elements at positions $3, 6, 9, 12, 15, 18$ and 21. Reading them off, these are M, K, % , T, B, P and 8. Step 2: The symbols originally present are @ (position 2), # (position 5), % (position 9), & (position 11), ! (position 14) and * (position 17) – six symbols in all. Step 3: Of these, only % stands at a position that is a multiple of 3, so only % is removed. The remaining symbols are @, #, &, ! and *, that is 5 symbols.

692. Step 1: Number the elements from the left: (1) M, (2) 4, (3) @, (4) 7, (5) K, (6) 3, (7) #, (8) R, (9) 9, (10) T, (11) 5, (12) % , (13) B, (14) 2, (15) !, (16) 6, (17) P, (18) 8, (19) &, (20) Q, (21) 1. Step 2: Keep only the digits whose left neighbour is a letter: 4 (after M), 3 (after K), 9 (after R), 5 (after T), 2 (after B), 8 (after P) and 1 (after Q). The digits 7 and 6 are rejected because they follow @ and ! respectively. Step 3: From this list keep only those standing at an even-numbered position: 4 at position 2 – counted; 3 at position 6 – counted; 9 at position 9, odd – rejected; 5 at position 11, odd – rejected; 2 at position 14 – counted; 8 at position 18 – counted; 1 at position 21, odd – rejected. Hence 4 digits satisfy both conditions.

693. The symbols in the arrangement are #, @, % , &, ! and *. Test both neighbours of each. # has K on its left and 5 on its right – letter then digit, counted. @ has 5 on its left, a digit – rejected immediately. % has R on its left and 8 on its right – counted. & has T on its left and 2 on its right – counted. ! has B on its left and 9 on its right – counted. * has P on its left and 4 on its right – counted. Five symbols, namely #, % , &, ! and *, satisfy both conditions. Since 5 does not appear among the first four options, the correct choice is None of these.

Subtopic 2.8.4

694. First number the letters of DEPOSIT: $D(1)$, $E(2)$, $P(3)$, $O(4)$, $S(5)$, $I(6)$, $T(7)$. So the 5th, 6th and 7th letters are S, I and T. Now list all $3! = 6$ arrangements of S, I, T: SIT, STI, IST, ITS, TSI, TIS. Checking each against standard English: SIT is a meaningful word; ITS is a meaningful word (possessive pronoun); STI, IST, TSI are not words; TIS is only a poetic contraction of 'it is' and is not accepted as a standard word. Hence exactly two meaningful words, SIT and ITS, can be formed. Answer: Two.

695. Number the letters of LOCKER: $L(1)$, $O(2)$, $C(3)$, $K(4)$, $E(5)$, $R(6)$. The required letters are O, C, E, R. Trying to arrange these four letters into an English word, the only meaningful word is CORE. (Arrangements such as OCRE, CERO, RECO are not standard English words.) Writing CORE out: C is first, O is second, R is third, E is fourth. So the third letter is R. Answer: R.

696. The letters of CUSTOMER are C, U, S, T, O, M, E, R – eight distinct letters. Sorting them alphabetically: C, E, M, O, R, S, T, U. Counting from the left: first C, second E, third M, fourth O. So the fourth letter from the left is O. Answer: O.

697. First count the letters available in MANAGEMENT: M twice, A twice, N twice, E twice, G once, T once. Now test each option. MAGNET needs M, A, G, N, E, T – one of each, all available. MEANT needs M, E, A, N, T – all available. MAGENTA needs A twice plus M, G, E, N, T – two A's are available, so it can be formed. MANGE needs M, A, N, G, E – all available. ANTENNA breaks up as A, N, T, E, N, N, A, so it needs N three times and A twice; the two A's are available, but MANAGEMENT supplies only two N's against the three required. Hence ANTENNA alone cannot be formed. Answer: ANTENNA.

698. The original word is B, A, N, K, I, N, G. Sorted alphabetically the letters become A, B, G, I, K, N, N. Compare the two strings position by position: position 1, B against A – different; position 2, A against B – different; position 3, N against G – different; position 4, K against I – different; position 5, I against K – different; position 6, N against N – same; position 7, G against N – different. Exactly one letter, the N at the sixth place, keeps its position. Answer: One.

699. The stock of letters in CALCULATOR is: C twice, A twice, L twice, and U, T, O, R once each. Test each option. CIRCULAR requires the letter I, which is not present at all, so it fails. TAROT requires T twice, but only one T is available, so it fails. CATALOGUE requires G and E, neither of which is present, so it fails. ACCURATE requires E, which is not present, so it fails. COLLAR requires C once, O once, L twice, A once and R once – every one of these is available (two L's are in stock), so COLLAR can be formed. Answer: COLLAR.

700. Number the letters of PARTNERSHIP: $P(1)$, $A(2)$, $R(3)$, $T(4)$, $N(5)$, $E(6)$, $R(7)$, $S(8)$, $H(9)$, $I(10)$, $P(11)$. The required letters are P, A, T and H. Arranging these four letters, the only standard English word obtainable is PATH. (PHAT is only informal slang and HAPT, TAPH etc. are not words, so exactly one word exists and the answer is neither X nor Y.) In PATH the letters run P, A, T, H, so the second letter is A. Answer: A.

701. Number the twelve letters of CONSTITUTION: $C(1)$, $O(2)$, $N(3)$, $S(4)$, $T(5)$, $I(6)$, $T(7)$, $U(8)$, $T(9)$, $I(10)$, $O(11)$, $N(12)$. The letters asked for are the 3rd $= N$, the 5th $= T$, the 8th $= U$ and the 10th $= I$, that is the set N, T, U, I. Now search for words using all four letters exactly once. UNIT is a meaningful English word. Other arrangements such as TUIN, NUIT, INTU and UTIN are not English words. Hence exactly one meaningful word can be formed. Answer: One.

702. Step 1: sort the letters of FRIENDS. The letters are F, R, I, E, N, D, S; alphabetically they become D, E, F, I, N, R, S. Step 2: pick positions 2, 3, 4 and 5 from this new string: E, F, I and N. Step 3: form a word from E, F, I, N. The only standard English word is FINE (NEIF is an obscure dialect form and FEIN, NIFE are not standard words). Step 4: FINE reads F, I, N, E, so its last letter is E. Answer: E.

703. Count the letters of DISTRIBUTION: D once, I three times, S once, T twice, R once, B once, U once, O once, N once. Now test the options. TRADITION needs an A, which is absent – rejected.

INTRUSION needs N twice, but only one N is available – rejected. DISTORTION needs O twice, but only one O is available – rejected. NUTRITION needs N twice as well – rejected. DISTORT needs D, I, S, T twice, O and R; two T's are available and every other letter is in stock, so DISTORT can be formed. Answer: DISTORT.

704. Number the letters of BENEFICIARY: $B(1)$, $E(2)$, $N(3)$, $E(4)$, $F(5)$, $I(6)$, $C(7)$, $I(8)$, $A(9)$, $R(10)$, $Y(11)$. The required letters are B, E, A and R. Now check how many meaningful words these four letters produce: BEAR (the animal, or to carry) is a word; BARE (uncovered) is a word; BRAE (a hillside, listed in standard dictionaries) is also a word. Since at least two meaningful words – BEAR and BARE – can be formed, the condition 'more than one such word' is satisfied, so no single third letter can be named. The correct response is therefore 'Y'. Answer: Y.

705. Number the nine letters of CLEARANCE: $C(1)$, $L(2)$, $E(3)$, $A(4)$, $R(5)$, $A(6)$, $N(7)$, $C(8)$, $E(9)$. The letters asked for are the 1st $= C$, the 3rd $= E$, the 4th $= A$ and the 5th $= R$, that is the set C, E, A, R. Now search through the arrangements of these four letters. CARE (concern, or to look after) is a meaningful word; RACE (a contest of speed) is a meaningful word; ACRE (a unit of land area) is also a meaningful word. Other strings such as CERA, ARCE, CRAE and REAC are not English words. Hence exactly three meaningful words – CARE, RACE and ACRE – can be formed. Answer: Three.

706. The original word is S, E, C, U, R, I, T, Y. Swapping in pairs: S and E become E, S; C and U become U, C; R and I become I, R; T and Y become Y, T. The new arrangement is therefore $E(1)$, $S(2)$, $U(3)$, $C(4)$, $I(5)$, $R(6)$, $Y(7)$, $T(8)$. Picking positions 1, 2, 5 and 8 gives E, S, I, T. From these four letters the meaningful English words are SITE and TIES. (TEIS, ISET, SEIT and similar strings are not words.) Hence two words can be formed. Answer: Two.

707. The word ACCOUNTANT has the letters A, C, C, O, U, N, T, A, N, T. The vowels present are A, O, U and A; dropping them leaves the consonants C, C, N, T, N, T. Sorting these six consonants alphabetically gives C, C, N, N, T, T. Counting from the left: first C, second C, third N, fourth N. So the fourth letter from the left is N. Answer: N.

708. Number the letters of SHAREHOLDER: $S(1)$, $H(2)$, $A(3)$, $R(4)$, $E(5)$, $H(6)$, $O(7)$, $L(8)$, $D(9)$, $E(10)$, $R(11)$. The required letters are A, E, L and D. Now hunt for words using all four letters exactly once. DEAL (an agreement) is a word; LEAD (to guide, or the metal) is a word; DALE (a valley) is a word; LADE (to load, as in a bill of lading) is also a standard word. That already gives four meaningful words, which is more than three, so no smaller option can be correct. Answer: More than three.

709. Step 1: the letters of MERCHANT are M, E, R, C, H, A, N, T, all distinct. Arranged alphabetically they give A, C, E, H, M, N, R, T. Step 2: replace each by its successor in the alphabet: $A \to B$, $C \to D$, $E \to F$, $H \to I$, $M \to N$, $N \to O$, $R \to S$, $T \to U$. The final arrangement is B, D, F, I, N, O, S, U. Step 3: count from the right end – first from the right is U, second is S, third is O. Answer: O.

710. Step 1: number the ten letters of INVESTMENT – $I(1)$, $N(2)$, $V(3)$, $E(4)$, $S(5)$, $T(6)$, $M(7)$, $E(8)$, $N(9)$, $T(10)$. Step 2: the first five letters are I, N, V, E, S; reversed they read S, E, V, N, I. The last five letters are T, M, E, N, T; reversed they read T, N, E, M, T. Step 3: the new arrangement is therefore $S(1)$, $E(2)$, $V(3)$, $N(4)$, $I(5)$, $T(6)$, $N(7)$, $E(8)$, $M(9)$, $T(10)$. Step 4: positions 2, 5, 6 and 9 give E, I, T and M. Step 5: from these four letters the meaningful English words are ITEM (a single article), TIME, MITE (a tiny creature) and EMIT (to give out). That is four words, which is more than three, so no smaller option can be correct. Answer: More than three.

711. Step 1: list the thirteen letters of CONSOLIDATION – C, O, N, S, O, L, I, D, A, T, I, O, N. Their tally is A once, C once, D once, I twice, L once, N twice, O three times, S once, T once. Step 2: in alphabetical order this becomes $A(1)$, $C(2)$, $D(3)$, $I(4)$, $I(5)$, $L(6)$, $N(7)$, $N(8)$, $O(9)$, $O(10)$, $O(11)$, $S(12)$, $T(13)$. Step 3: the required positions give A, D, O and T. Step 4: the only meaningful English word from A, D, O, T is TOAD. Its letters run T, O, A, D, so the third letter is A. Answer: A.

712. Step 1: number the eleven letters of PERFORMANCE – $P(1)$, $E(2)$, $R(3)$, $F(4)$, $O(5)$, $R(6)$, $M(7)$, $A(8)$, $N(9)$, $C(10)$, $E(11)$. The vowels sit at positions 2, 5, 8 and 11 and do not move. Step 2: the consonants, in order, occupy positions 1, 3, 4, 6, 7, 9, 10 and read P, R, F, R, M, N, C. Reversed they read C, N, M, R, F, R, P, and these are put back into the same consonant slots. Step 3: the new arrangement is $C(1)$, $E(2)$, $N(3)$, $M(4)$, $O(5)$, $R(6)$, $F(7)$, $A(8)$, $R(9)$, $P(10)$, $E(11)$. Step 4: positions 1, 2, 3 and 5 give C, E, N, O. From these four letters the meaningful words are CONE and ONCE; no other arrangement such as ECON or NOCE is a word. Answer: Two.

713. Step 1: the ten letters of SETTLEMENT are S, E, T, T, L, E, M, E, N, T, that is E three times, T three times and S, L, M, N once each. Step 2: alphabetically they become $E(1)$, $E(2)$, $E(3)$, $L(4)$, $M(5)$, $N(6)$, $S(7)$, $T(8)$, $T(9)$, $T(10)$. Step 3: striking off every alternate letter beginning with the first removes positions 1, 3, 5, 7 and 9, that is one E, another E, the M, the S and one T. The surviving letters are those at positions 2, 4, 6, 8 and 10, namely E, L, N, T, T. Step 4: test the options against this stock. MELT needs M, which was struck off. TEEN needs two E's, but only one E survives. SENT and NEST both need S, which was struck off. LENT needs L, E, N, T – every one of these survives. Answer: LENT.

714. Number the ten letters of MAINSTREAM: $M(1)$, $A(2)$, $I(3)$, $N(4)$, $S(5)$, $T(6)$, $R(7)$, $E(8)$, $A(9)$, $M(10)$. The required letters are A, N, T and E. Scanning the arrangements of these four letters, the meaningful English words are NEAT and ANTE (the stake put up in a card game); ETNA is a proper noun and so is not admissible, while strings such as TANE, NATE and AENT are not words. The question, however, asks only for words that begin with a consonant. ANTE begins with the vowel A and is therefore excluded, leaving only NEAT, which begins with the consonant N. Hence exactly one qualifying word exists. Answer: One.

Subtopic 2.8.5

715. Write the word with position numbers: $B_1\,A_2\,N_3\,K_4\,I_5\,N_6\,G_7$. A pair qualifies when the number of letters lying between the two letters in the word equals the number lying between them in the alphabet.
(i) B–A (positions 1 and 2): no letter between them in the word; in the alphabet A and B are consecutive, so no letter between them. Qualifies.
(ii) I–G (positions 5 and 7): one letter (N) between them in the word; in the alphabet G, H, I has one letter (H) between them. Qualifies.
Checking the remaining combinations: A–N needs 12 letters between but has none (they are adjacent in the word), N–K needs 2 but has none, K–I needs 1 but has none, N–G needs 6 but has none, and no other combination matches. Hence exactly 2 pairs.

716. Positions: $D_1\,E_2\,P_3\,O_4\,S_5\,I_6\,T_7$.
(i) D–E (1,2): 0 letters between in the word; D and E are consecutive, 0 between.
(ii) P–O (3,4): 0 letters between in the word; O and P are consecutive.
(iii) D–I (1,6): 4 letters between in the word (E, P, O, S); in the alphabet E, F, G, H lie between D and I, i.e. 4.
(iv) E–I (2,6): 3 letters between in the word (P, O, S); in the alphabet F, G, H, i.e. 3.
(v) P–T (3,7): 3 letters between in the word (O, S, I); in the alphabet Q, R, S, i.e. 3.
No other combination fits, so the count is 5.

717. Positions: $S_1\,A_2\,V_3\,I_4\,N_5\,G_6\,S_7$.
Test the pair I–G (positions 4 and 6): one letter (N) lies between them in the word, and in the alphabet G, H, I has exactly one letter (H) between them. This pair qualifies.
Every other combination fails: S–A needs 17 letters between but has none, A–V needs 20, V–I needs 12, I–N needs 4 but has none, N–G needs 6 but has none, G–S needs 11 but has none, and the wider combinations are even further apart in the alphabet. Hence exactly 1 pair.

718. Positions: $L_1\,I_2\,Q_3\,U_4\,I_5\,D_6\,I_7\,T_8\,Y_9$.
For neighbouring letters (gap 1 in the word) we need letters consecutive in the alphabet: $LI, IQ, QU, UI, ID, DI, IT$

– none of these is a consecutive alphabet pair.
For a gap of 2 we need an alphabet difference of 2; the gap-2 pairs are positions $(1,3),(2,4),(3,5),(4,6),(5,7),(6,8),($
namely $LQ(5), IU(12), QI(8), UD(17), I\text{–}I(0), DT(16), IY(16)$ – none.
For larger gaps the required alphabet differences $(3,4,\dots)$ are never met either, because the word repeats I (difference 0) and mixes far-apart letters such as L, Q, U, Y. Hence no pair qualifies; the answer is None.

719. Positions: $M_1\,A_2\,N_3\,A_4\,G_5\,E_6\,R_7$.
(i) A–E (positions 2 and 6): 3 letters between them in the word (N, A, G); in the alphabet B, C, D lie between A and E, i.e. 3. Also E comes after A in the alphabet, so it is a forward pair.
(ii) N–R (positions 3 and 7): 3 letters between them in the word (A, G, E); in the alphabet O, P, Q lie between N and R, i.e. 3, and R follows N. Forward pair.
No other forward combination matches (for example M–N at positions 1 and 3 has one letter between in the word but none in the alphabet). Hence 2 forward pairs.

720. Number the letters: $C_1\,A_2\,L_3\,C_4\,U_5\,L_6\,A_7\,T_8\,O_9\,R_{10}$.
AC (positions 2 and 4): one letter (L) lies between them in the word, and in the alphabet A, B, C has exactly one letter (B) between them – this pair qualifies.
LU (positions 3 and 5): one letter between in the word, but L to U has 8 letters between them – fails.
CU (positions 4 and 5): no letter between in the word, but 17 letters lie between C and U – fails.
TO (positions 8 and 9): no letter between in the word, but O to T has 4 letters between them – fails.
Since the pair AC works, "None of these" is not correct.

721. Positions: $T_1\,R_2\,A_3\,N_4\,S_5\,F_6\,E_7\,R_8$.
(i) A–E (3,7): 3 letters between in the word (N, S, F); in the alphabet B, C, D, i.e. 3. Qualifies.
(ii) N–R (4,8): 3 letters between in the word (S, F, E); in the alphabet O, P, Q, i.e. 3. Qualifies.
(iii) F–E (6,7): no letter between in the word; E and F are consecutive in the alphabet. Qualifies.
Other combinations such as T–R (1,2) need one letter between in the word but have none, and R–S (2,5) needs no gap but has two letters between. Total = 3 pairs.

722. Positions: $M_1\,E_2\,R_3\,C_4\,H_5\,A_6\,N_7\,D_8\,I_9\,S_{10}\,E_{11}$.
(i) E–C (2,4): 1 letter between in the word (R); alphabet C, D, E gives 1.
(ii) E–H (2,5): 2 letters between in the word (R, C); alphabet F, G gives 2.
(iii) E–A (2,6): 3 letters between in the word (R, C, H); alphabet B, C, D gives 3.
(iv) R–N (3,7): 3 letters between in the word (C, H, A); alphabet O, P, Q gives 3.
(v) C–A (4,6): 1 letter between in the word (H); alphabet B gives 1.
No further combination matches, so the answer is 5.

723. Step 1: Arrange B, A, N, K, E, R alphabetically: $A_1\,B_2\,E_3\,K_4\,N_5\,R_6$.
Step 2: Test the pairs. Adjacent positions need consecutive alphabet letters: AB (difference 1) qualifies; BE (difference 3), EK (6), KN (3), NR (4) do not.
Gap of 2 needs an alphabet difference of 2: AE (4), BK (9), EN (9), KR (7) – none.
Gap of 3 needs difference 3: AK (10), BN (12), ER (13) – none. Larger gaps fail similarly.
So exactly 1 pair, namely A–B.

724. Number every element of the arrangement, digits included: $K_1\,5_2\,M_3\,P_4\,8_5\,R_6\,T_7\,3_8\,W_9\,Y_{10}\,2_{11}\,B_{12}$.
(i) K–M (positions 1 and 3): one element (5) lies between them; in the alphabet K, L, M has one letter (L) between them. Qualifies.
(ii) P–R (positions 4 and 6): one element (8) lies between them; in the alphabet Q lies between P and R. Qualifies.
(iii) T–W (7 and 9): one element between them, but U, V (two letters) lie between T and W – fails.
(iv) W–Y (9 and 10): no element between them, but X lies between W and Y – fails.
No other combination works, so the count is 2.

725. Count the qualifying pairs word by word.
TELLER $(T_1E_2L_3L_4E_5R_6)$: no combination matches – for instance T–R (1,6) has 4 letters between in the word but only S, i.e. 1 letter, in the alphabet; L–E (3,5) has one letter between in the word

but six (F, G, H, I, J, K) in the alphabet. So 0 pairs.
LOCKER: *C*–*E* (positions 3 and 5) has one letter (K) between in the word and D between in the alphabet – 1 pair.
CASHIER: *A*–*E* (2,6) has 3 letters between (S, H, I) and B, C, D in the alphabet; *H*–*I* (4,5) are adjacent in both – 2 pairs.
MORTGAGE: only *M*–*G* (1,7), with 5 letters between in the word and H, I, J, K, L in the alphabet – 1 pair.
SALARY: no combination matches – 0 pairs.
The maximum, 2, occurs in CASHIER.

726. Positions: $C_1\, H_2\, E_3\, N_4\, N_5\, A_6\, I_7$.
(i) *C*–*E* (1,3): one letter (H) between in the word; in the alphabet D lies between C and E. Qualifies.
(ii) *C*–*I* (1,7): five letters between in the word (H, E, N, N, A); in the alphabet D, E, F, G, H – five. Qualifies.
(iii) *E*–*I* (3,7): three letters between in the word (N, N, A); in the alphabet F, G, H – three. Qualifies.
Others fail: *H*–*E* (2,3) needs 2 letters between but has none; *N*–*A* (5,6) needs 12; *A*–*I* (6,7) needs 7.
Total = 3.

727. PENSION: $P_1\, E_2\, N_3\, S_4\, I_5\, O_6\, N_7$.
P–*N* (1,3): one letter (E) between in the word, and O lies between N and P – qualifies.
P–*S* (1,4): two letters (E, N) between in the word, and Q, R in the alphabet – qualifies.
O–*N* (6,7): adjacent in both – qualifies. That is 3 pairs.
BONDS: $B_1\, O_2\, N_3\, D_4\, S_5$. *O*–*N* (2,3) are adjacent in the word and consecutive in the alphabet – qualifies. *N*–*D* needs 9 letters between, *D*–*S* needs 14; both fail. That is 1 pair.
Total = $3 + 1 = 4$.

728. Positions: $I_1\, N_2\, T_3\, E_4\, R_5\, E_6\, S_7\, T_8$.
(i) *T*–*R* (3,5): one letter (E) between in the word; S lies between R and T. Qualifies.
(ii) *N*–*S* (2,7): four letters between in the word (T, E, R, E); in the alphabet O, P, Q, R – four. Qualifies.
(iii) *N*–*T* (2,8): five letters between in the word (T, E, R, E, S); in the alphabet O, P, Q, R, S – five. Qualifies.
(iv) *S*–*T* (7,8): adjacent in the word and consecutive in the alphabet. Qualifies.
Pairs such as *I*–*N* (1,2) fail, since 4 letters separate them in the alphabet but none in the word. Total = 4.

729. Positions: $P_1\, O_2\, R_3\, T_4\, F_5\, O_6\, L_7\, I_8\, O_9$. Work through the qualifying pairs.
(i) *P*–*O* (1,2): adjacent in the word, consecutive in the alphabet.
(ii) *P*–*R* (1,3): one letter (O) between in the word, Q in the alphabet.
(iii) *P*–*I* (1,8): six letters between in the word (O, R, T, F, O, L); alphabet J, K, L, M, N, O – six.
(iv) *O*–*I* (2,8): five letters between in the word (R, T, F, O, L); alphabet J, K, L, M, N – five.
(v) *R*–*O* (3,6): two letters between in the word (T, F); alphabet P, Q – two.
(vi) *T*–*O* (4,9): four letters between in the word (F, O, L, I); alphabet P, Q, R, S – four.
(vii) *F*–*I* (5,8): two letters between in the word (O, L); alphabet G, H – two.
No eighth pair exists, so the answer is 7.

730. Positions: $D_1\, E_2\, B_3\, E_4\, N_5\, T_6\, U_7\, R_8\, E_9$.
(i) *D*–*E* (1,2): adjacent in the word, consecutive in the alphabet. Qualifies.
(ii) *D*–*B* (1,3): one letter (E) between in the word; C lies between B and D. Qualifies.
(iii) *T*–*U* (6,7): adjacent in the word, consecutive in the alphabet. Qualifies.
(iv) *T*–*R* (6,8): one letter (U) between in the word; S lies between R and T. Qualifies.
Tempting but wrong: *D*–*E* at (1,4) has two letters between in the word but none in the alphabet; *E*–*B* at (2,3) has none in the word but two (C, D) in the alphabet; *U*–*R* at (7,8) has none in the word but two (S, T) in the alphabet. Total = 4.

731. Step 1 (find x): $M_1\, A_2\, N_3\, A_4\, G_5\, E_6\, M_7\, E_8\, N_9\, T_{10}$. The pair *A*–*E* (positions 2 and 6) has 3 letters between in the word (N, A, G) and B, C, D in the alphabet; the pair *A*–*E* (positions 4 and 8) has

3 letters between in the word (G, E, M) and again 3 in the alphabet. No other combination fits, so $x = 2$.
Step 2 (find y): alphabetical arrangement is $A_1\, A_2\, E_3\, E_4\, G_5\, M_6\, M_7\, N_8\, N_9\, T_{10}$. Here E–G (positions 3 and 5) has one letter (E) between in the word and F in the alphabet; M–N (positions 7 and 8) are adjacent in both. Nothing else fits, so $y = 2$.
Therefore $x - y = 2 - 2 = 0$.

732. Step 1: Apply the shift to $S, E, C, U, R, I, T, I, E, S$ to get $U_1\, G_2\, E_3\, W_4\, T_5\, K_6\, V_7\, K_8\, G_9\, U_{10}$ (no letter passes Z, so nothing wraps around).
Step 2: A uniform shift moves every letter by the same amount, so the alphabetical gap between any two letters is unchanged, and their positions in the group are unchanged; hence the count must equal that of the original word.
Step 3: Verify directly. G–K (positions 2 and 6): three letters between in the group (E, W, T) and H, I, J in the alphabet – qualifies (this came from E–I in SECURITIES). T–V (positions 5 and 7): one letter (K) between in the group and U in the alphabet – qualifies (from R–T). No other pair fits. Hence the answer is 2.

733. Number all elements, symbols and digits included: $B_1\, 7_2\, K_3\, @_4\, L_5\, N_6\, 3_7\, P_8\, \#_9\, Z_{10}\, 5_{11}\, R_{12}\, T_{13}\, 2_{14}$.
(i) K–N (3,6): two elements between $(@, L)$; alphabet L, M – two. Qualifies.
(ii) K–P (3,8): four elements between $(@, L, N, 3)$; alphabet L, M, N, O – four. Qualifies.
(iii) N–P (6,8): one element between (3); alphabet O – one. Qualifies.
(iv) L–T (5,13): seven elements between $(N, 3, P, \#, Z, 5, R)$; alphabet M, N, O, P, Q, R, S – seven. Qualifies.
Near misses: R–T (12,13) are adjacent in the arrangement but have S between them in the alphabet; P–Z (8,10) have one element between but nine letters in the alphabet. Total = 4.

734. Count the qualifying pairs in each word.
MORTGAGE ($M_1O_2R_3T_4G_5A_6G_7E_8$): only M–G (1,7), with five letters between in the word (O, R, T, G, A) and H, I, J, K, L in the alphabet – exactly 1.
PROFITS ($P_1R_2O_3F_4I_5T_6S_7$): O–S (3,7) has three letters between (F, I, T) and P, Q, R in the alphabet; T–S (6,7) are adjacent in both – 2 pairs.
BALANCE ($B_1A_2L_3A_4N_5C_6E_7$): B–A (1,2), L–N (3,5) and A–C (4,6) all qualify – 3 pairs.
VOUCHER ($V_1O_2U_3C_4H_5E_6R_7$): only C–E (4,6), with H between in the word and D in the alphabet – exactly 1.
CAPITAL ($C_1A_2P_3I_4T_5A_6L_7$): P–L (3,7) has three letters between (I, T, A) and M, N, O in the alphabet; I–L (4,7) has two between (T, A) and J, K in the alphabet – 2 pairs.
Words with exactly one pair: MORTGAGE and VOUCHER, i.e. 2 words.

735. Step 1: Reverse OVERDRAFT to obtain $T_1\, F_2\, A_3\, R_4\, D_5\, R_6\, E_7\, V_8\, O_9$.
Step 2: Look for forward pairs. A–E (positions 3 and 7): three letters between them in the group (R, D, R) and B, C, D in the alphabet, with E later than A – qualifies. R–V (positions 4 and 8): three letters between them in the group (D, R, E) and S, T, U in the alphabet, with V later than R – qualifies.
Step 3: The pair R–O (positions 6 and 9) also satisfies the counting condition (two letters between in the group, P, Q in the alphabet), but O comes *before* R in the alphabet, so it is a backward pair and must be excluded.
Hence the number of forward pairs is 2.

Subtopic 2.9.1

736. Apply the rule once. Input: 34 bank 71 loan 26 cash. The extreme left element is 34; shifting it to the extreme right gives
Step I: bank 71 loan 26 cash 34.
Now the extreme left element is bank; shifting it to the extreme right gives
Step II: 71 loan 26 cash 34 bank.

Counting from the left in Step II: 1st = 71, 2nd = loan, 3rd = 26. Hence the third element from the left is 26. (cash is 4th, 34 is 5th, so none of the other choices fits.)

737. In Step I the last element 19 moves to the front:
Step I: 19 rupee 45 credit 82 debit.
In Step II the last element of Step I, i.e. debit, moves to the front:
Step II: debit 19 rupee 45 credit 82.
Reading Step II from the right: 1st = 82, 2nd = credit. So the required element is credit. (45 is third from the right, rupee is fourth and debit is sixth, so they are all wrong.)

738. Write the successive steps.
Input: loan 27 cash 61 draft
Step I: 27 cash 61 draft loan
Step II: cash 61 draft loan 27
Step III: 61 draft loan 27 cash
Step IV: draft loan 27 cash 61
The required arrangement first appears at Step IV. (Step V would return the line to the original input, since with 5 elements the pattern repeats after 5 steps.)

739. Input: 16 fund 39 asset 52 ledger 74 (seven elements). The last two are ledger and 74; moving them, in order, to the front:
Step I: ledger 74 16 fund 39 asset 52.
The last two of Step I are asset and 52; moving them to the front:
Step II: asset 52 ledger 74 16 fund 39.
Counting from the left: 1st = asset, 2nd = 52, 3rd = ledger, 4th = 74. Hence the answer is 74 (ledger is 3rd, 16 is 5th and 52 is 2nd).

740. Input: teller 23 vault 48 audit 65. Shifting the first two (teller, 23) to the right end:
Step I: vault 48 audit 65 teller 23.
Shifting the first two of Step I (vault, 48) to the right end:
Step II: audit 65 teller 23 vault 48.
In Step II, 65 is at position 2 and 23 is at position 4; the single element between them, at position 3, is teller. (vault and 48 stand after 23, and audit stands before 65.)

741. Move the leftmost element to the extreme right each time.
Input: 89 branch 34 cheque 57
Step I: branch 34 cheque 57 89
Step II: 34 cheque 57 89 branch
Step III: cheque 57 89 branch 34
Hence option A is Step III. Option D is Step I and option B is Step II, while option C is Step IV, so none of them is correct.

742. Each step moves the last element to the front.
Input: draft 41 kiosk 68 passbook 93
Step I: 93 draft 41 kiosk 68 passbook
Step II: passbook 93 draft 41 kiosk 68
Step III: 68 passbook 93 draft 41 kiosk
Step IV: kiosk 68 passbook 93 draft 41
kiosk reaches the extreme left in Step IV, i.e. after four steps. (Equivalently, kiosk starts at position 3 and each step pushes every element one place to the right, so it needs $6 - 3 + 1 = 4$ steps in a line of six elements.)

743. Compare the steps. In Step I only the last element 47 has been carried to the front, i.e. the last one element is shifted to the beginning. In Step II the last two elements of Step I (82, cash) have been carried to the front in the same order. So in Step n the last n elements are shifted, in order, to the beginning.
Step II is 82 cash 47 bank 36 loan. Its last three elements are bank, 36, loan; shifting them to the

front gives
Step III: bank 36 loan 82 cash 47,
which is exactly the original input (the total shift $1+2+3=6$ equals the number of elements). Hence option A.

744. In Step I the first one element (29) has been shifted to the extreme right. In Step II the first two elements of Step I (vault, mandate) have been shifted to the extreme right in the same order. So in Step n the first n elements are shifted to the right end, and the pattern of shifts is $1, 2, 3, \ldots$
Step II: 64 payee 18 slip 29 vault mandate. Shifting its first three elements (64, payee, 18) to the right end:
Step III: slip 29 vault mandate 64 payee 18.
There are seven elements, so the fourth from the right is the $7-4+1=4$th from the left, which is mandate.

745. The line has seven elements, so the middle position is the fourth from the left. Each step moves every element one place to the left, so audit, which starts at position 1, moves to position 7 after Step I and then climbs down:
Step I: 46 draft 19 ledger 73 surplus audit (audit at 7)
Step II: draft 19 ledger 73 surplus audit 46 (audit at 6)
Step III: 19 ledger 73 surplus audit 46 draft (audit at 5)
Step IV: ledger 73 surplus audit 46 draft 19 (audit at 4)
Thus audit reaches the middle in Step IV, i.e. after four steps.

746. In each step the last two elements are carried to the front, i.e. the whole line is shifted two places to the right in a circular manner. After k steps the total circular shift is $2k$ places. The line contains seven elements, so the input reappears when $2k$ is a multiple of 7, i.e. when 7 divides $2k$. Since 7 and 2 have no common factor, the least such k is $k=7$.
(Check: after 7 steps the shift is $2\times 7=14=2\times 7$ places, a whole number of full rounds, so every element is back in its original place. No smaller value works, because $2, 4, 6, 8, 10, 12$ are not multiples of 7.)

747. Identify the rule. In Step I the first element of the input (63) has been shifted to the extreme right. In Step II the second element of Step I (38) has been shifted to the extreme right. In Step III the third element of Step II (92) has been shifted to the extreme right. So in Step n the element standing at the nth place from the left is moved to the end.
Step III is quota lien 63 38 92. Its fourth element from the left is 38. Moving 38 to the extreme right:
Step IV: quota lien 63 92 38.
Hence option A. Option B wrongly interchanges quota and lien, which the rule never does.

748. Each step carries the last element to the front, so after three steps the last three elements of the input, in their original order, stand at the beginning.
Step I: nominee 71 escrow 46 tender 88 clause 32
Step II: 32 nominee 71 escrow 46 tender 88 clause
Step III: clause 32 nominee 71 escrow 46 tender 88
There are eight elements. The fifth from the right is the $8-5+1=4$th from the left, i.e. 71. Three places to the left of position 4 is position 1, which is clause.

749. Shift the leading pair to the end each time.
Input: 55 payee 39 draft 82 kiosk 17
Step I: 39 draft 82 kiosk 17 55 payee
Step II: 82 kiosk 17 55 payee 39 draft
Step III: 17 55 payee 39 draft 82 kiosk
In Step III, payee is at position 3 and 82 is at position 6. The elements between them are 39 (position 4) and draft (position 5), i.e. two elements.

750. Step I shifts the first one element to the end, Step II shifts the first two elements of Step I to the end, Step III again shifts only the first one element. So the shifts alternate $1, 2, 1, 2, \ldots$ places to the

left.
Step IV therefore shifts the first two elements of Step III (escrow, 91) to the end:
Step IV: 42 lien surety 76 escrow 91, which is the input itself (total shift $1+2+1+2=6=$ number of elements).
Step V shifts one element:
Step V: lien surety 76 escrow 91 42.
This is identical to Step I, so option B is correct; option A is Step IV, not Step V.

751. Treat the line as two blocks of three. In the first block 34 bond quota becomes quota 34 bond, i.e. it is shifted one place to the right in a circular manner. In the second block payee 57 vault becomes 57 vault payee, i.e. it is shifted one place to the left in a circular manner. Step II repeats the same operation on Step I, which confirms the rule.
Since each block has three elements, three steps restore both blocks. Hence Step III is the input itself, Step IV is the same as Step I and Step V is the same as Step II.
Step V: bond quota 34 vault payee 57. The fourth element from the left is vault.

752. In Step I the last element (tender) is placed at the first position; in Step II the last element (91) is placed at the second position; in Step III the last element (payee) is placed at the third position. So in Step n the element at the extreme right is lifted out and inserted at the nth place from the left.
Step III: tender 91 payee 48 mortgage 23. Its last element 23 is inserted at the fourth place:
Step IV: tender 91 payee 23 48 mortgage.
Now the last element mortgage is inserted at the fifth place:
Step V: tender 91 payee 23 mortgage 48.
Hence option B; option A is Step IV, not Step V.

753. In each step the last three elements are carried, in order, to the front, i.e. the line of eight elements is shifted three places to the right in a circular manner. After k steps the net circular right shift is $3k$ places, reduced modulo 8.
The required arrangement kiosk 52 demand 83 payee 46 ledger 17 is obtained from the input by moving the last seven elements to the front, i.e. a right shift of 7 places.
So we need $3k \equiv 7 \pmod 8$. Testing: $k=1$ gives 3; $k=2$ gives 6; $k=3$ gives $9 \equiv 1$; $k=4$ gives $12 \equiv 4$; $k=5$ gives $15 \equiv 7$.
Hence the arrangement appears at Step V.

754. The line has nine elements and each step is a circular left shift of one place, so Step VII is the input shifted seven places to the left: the arrangement begins with the 8th element of the input.
Input positions: 1 = 58, 2 = tender, 3 = 31, 4 = quota, 5 = 74, 6 = escrow, 7 = 29, 8 = payee, 9 = 66.
Step VII: payee 66 58 tender 31 quota 74 escrow 29.
The sixth element from the left in Step VII is quota (positions: 1 = payee, 2 = 66, 3 = 58, 4 = tender, 5 = 31, 6 = quota). Three places to the right of position 6 is position 9, which is 29.

755. In Step n the first n elements are shifted to the extreme right, so the cumulative circular left shift after n steps is $1+2+\cdots+n$. With seven elements these totals are reduced modulo 7:
after Step I: 1; after Step II: 3; after Step III: 6; after Step IV: $10 \equiv 3$; after Step V: $15 \equiv 1$; after Step VI: $21 \equiv 0$.
Step IV has the same net shift (3) as Step II, so the two arrangements coincide. Indeed, shifting the first four elements of Step III (85, 62, warrant, 39) to the end gives payee 18 clause 85 62 warrant 39, which is Step II.
Step V equals Step I and Step VI equals the input, so option B alone is correct.

756. Note that the odd places always hold numbers and the even places always hold words. Taking the numbers in order, $47, 82, 15$ becomes $15, 47, 82$ in Step I, i.e. the numbers shift one place to the right circularly among the number-slots. Taking the words, mandate, surety, ledger becomes surety, ledger, mandate, i.e. the words shift one place to the left circularly among the word-slots. Step II follows the same rule.
Each group has three members, so after three steps both groups return to their original order: Step

III is the input itself, and therefore Step IV is the same as Step I.
Step IV: 15 surety 47 ledger 82 mandate. Here surety is at position 2 and ledger at position 4, so the element between them, at position 3, is 47.

Subtopic 2.9.2

757. Apply the rule term by term. First number: $24+1 = 25$. Second: $17+2 = 19$. Third: $36+3 = 39$. Fourth: $45 + 4 = 49$. Fifth: $12 + 5 = 17$. So Step I is 25, 19, 39, 49, 17. Now add them: $25 + 19 = 44$; $44 + 39 = 83$; $83 + 49 = 132$; $132 + 17 = 149$. Hence the required sum is 149, which is option C. Options A, B and D differ from the correct total, so they are wrong.

758. Apply $2n-5$ to each input number. $2\times8-5 = 11$; $2\times12-5 = 19$; $2\times15-5 = 25$; $2\times21-5 = 37$; $2 \times 30 - 5 = 55$. Step I is therefore 11, 19, 25, 37, 55. Checking each for a perfect square: 11, 19, 37 and 55 lie between consecutive squares and are not squares, while $25 = 5^2$ is a perfect square. Only one such number exists, so the answer is C.

759. Test each number for divisibility by 3. 9 is divisible, so $9 \div 3 = 3$. 14 is not, so $14 \times 3 = 42$. 21 is divisible, so $21 \div 3 = 7$. 20 is not, so $20 \times 3 = 60$. 36 is divisible, so $36 \div 3 = 12$. Step I is 3, 42, 7, 60, 12. The first number is 3 and the last is 12, so their sum is $3 + 12 = 15$. Hence B. Note that only the two extreme numbers are wanted; adding the whole of Step I would give $3 + 42 + 7 + 60 + 12 = 124$, which is not what the question asks for.

760. Multiply the digits of each number. 34 gives $3 \times 4 = 12$. 52 gives $5 \times 2 = 10$. 71 gives $7 \times 1 = 7$. 26 gives $2 \times 6 = 12$. 43 gives $4 \times 3 = 12$. Step I is 12, 10, 7, 12, 12. Numbers strictly greater than 10 are 12, 12 and 12, that is three numbers. Note that 10 is not greater than 10, so it must be excluded; counting it would wrongly give four. Hence the answer is C.

761. Find the digit sum of each number first. 47 gives $4 + 7 = 11$; 63 gives $6 + 3 = 9$; 85 gives $8 + 5 = 13$; 29 gives $2 + 9 = 11$; 56 gives $5 + 6 = 11$. Now double each: 22, 18, 26, 22, 22. So Step I is 22, 18, 26, 22, 22. The largest of these is 26, which comes from 85, the number with the largest digit sum. Hence D. Option C (24) does not occur in Step I at all.

762. The largest number of the input is 60. Halving it gives $60 \div 2 = 30$, and this goes to the extreme left. The remaining numbers, in their original order, are 18, 45, 32, 27. So Step I is 30, 18, 45, 32, 27. Counting from the left, the first number is 30, the second is 18 and the third is 45. Hence the answer is C. Option B (32) would be third only if the halved number 30 were not counted as a member of the line, and option A (18) is merely the second number of Step I.

763. Classify each input number and operate. 23 is odd, so $23 + 7 = 30$. 40 is even, so $40 - 4 = 36$. 15 is odd, so $15 + 7 = 22$. 62 is even, so $62 - 4 = 58$. 31 is odd, so $31 + 7 = 38$. Step I is 30, 36, 22, 58, 38. The largest value is 58 and the smallest is 22, so the required difference is $58 - 22 = 36$. Hence D. A common error is to take the difference of the largest and smallest inputs ($62 - 15 = 47$), which is not asked.

764. Step I (add 5): 11, 14, 17, 20, 23. Step II (multiply by 2): 22, 28, 34, 40, 46. Step III (subtract the position number): $22 - 1 = 21$; $28 - 2 = 26$; $34 - 3 = 31$; $40 - 4 = 36$; $46 - 5 = 41$. So Step III is 21, 26, 31, 36, 41. Adding: $21 + 26 = 47$; $47 + 31 = 78$; $78 + 36 = 114$; $114 + 41 = 155$. Hence the sum is 155, option C.

765. Apply the rule step by step. Step I: the leftmost number 5 becomes $5 \times 2 = 10$ and goes to the right end, giving 8, 11, 14, 10. Step II: the leftmost number is now 8, and $8 \times 2 = 16$ goes to the right end, giving 11, 14, 10, 16. Step III: the leftmost number is 11, and $11 \times 2 = 22$ goes to the right end, giving 14, 10, 16, 22. In Step III, the rightmost number is 22, so the second from the right is 16. Hence C.

766. Step I: the smallest number of the input is 12; doubling gives 24, which moves to the right end. Step I is 34, 27, 19, 45, 24. Step II: the smallest number now is 19; doubling gives 38, which moves to the right end. Step II is 34, 27, 45, 24, 38. Step III: the smallest number now is 24; doubling gives 48,

which moves to the right end. Step III is 34, 27, 45, 38, 48. The two extreme ends of Step III are 34 and 48, whose sum is $34 + 48 = 82$. Hence C.

767. Step I (reverse the digits): 14, 27, 35, 62, 48. Step II (numerical difference from the corresponding input): $|14 - 41| = 27$; $|27 - 72| = 45$; $|35 - 53| = 18$; $|62 - 26| = 36$; $|48 - 84| = 36$. So Step II is 27, 45, 18, 36, 36. Test divisibility by 9: $27 = 9 \times 3$, $45 = 9 \times 5$, $18 = 9 \times 2$, $36 = 9 \times 4$ and $36 = 9 \times 4$. All five qualify. This is no accident: the difference between a two-digit number and its reverse is 9 times the difference of its digits, so it is always a multiple of 9. Hence D.

768. Step I (ascending order): 14, 21, 27, 36, 48. Step II (sums of adjacent pairs): $14 + 21 = 35$; $21 + 27 = 48$; $27 + 36 = 63$; $36 + 48 = 84$. So Step II is 35, 48, 63, 84. The largest number is 84 and the smallest is 35, so the difference is $84 - 35 = 49$. Hence C. Note that the sums stay in increasing order because Step I is increasing, so the extremes are simply the first and last sums.

769. Step I (multiply by 3): 27, 39, 51, 63, 75. Step II (subtract 12): 15, 27, 39, 51, 63. Step III (divide by 3): 5, 9, 13, 17, 21. The second number of Step II is 27 and the first number of Step III is 5. Their product is $27 \times 5 = 135$. Hence C. Incidentally, the whole machine is equivalent to $n - 4$, which is why Step III is the input reduced by 4.

770. Step I: position 1 is $16 \times 2 = 32$; position 2 is $24 \div 2 = 12$; position 3 is $18 \times 2 = 36$; position 4 is $36 \div 2 = 18$; position 5 is $21 \times 2 = 42$. So Step I is 32, 12, 36, 18, 42. Step II (descending order): 42, 36, 32, 18, 12. With five numbers the middle position is the third, which holds 32. Hence B.

771. Step I: 48 is even, so $48 \div 2 = 24$; 27 is odd, so $27 + 3 = 30$; 36 is even, so $36 \div 2 = 18$; 15 is odd, so $15 + 3 = 18$. Step I is 24, 30, 18, 18, and 9 does not appear. Step II: $24 \div 2 = 12$; $30 \div 2 = 15$; $18 \div 2 = 9$; $18 \div 2 = 9$. Step II is 12, 15, 9, 9, and here 9 appears for the first time. Hence B. There is no need to go further, since the question asks for the first occurrence.

772. Step I (Row A minus Row B, position-wise): $56 - 29 = 27$; $43 - 17 = 26$; $78 - 45 = 33$; $61 - 38 = 23$; $39 - 22 = 17$. Step I is 27, 26, 33, 23, 17. Step II (product of the digits): $2 \times 7 = 14$; $2 \times 6 = 12$; $3 \times 3 = 9$; $2 \times 3 = 6$; $1 \times 7 = 7$. Step II is 14, 12, 9, 6, 7. Step III (ascending order): 6, 7, 9, 12, 14. The second number is 7 and the fourth is 12, so the required sum is $7 + 12 = 19$. Hence B.

773. Step I (multiply by 4): 48, 72, 84, 108. Step II (subtract the digit sum of each Step I number): 48 has digit sum $4 + 8 = 12$, giving $48 - 12 = 36$; 72 has digit sum 9, giving $72 - 9 = 63$; 84 has digit sum 12, giving $84 - 12 = 72$; 108 has digit sum 9, giving $108 - 9 = 99$. Step II is 36, 63, 72, 99. Step III (divide by 3): 12, 21, 24, 33. Sum of Step II $= 36 + 63 + 72 + 99 = 270$. Sum of Step III $= 12 + 21 + 24 + 33 = 90$. The required difference is $270 - 90 = 180$. Hence C. (Subtracting the digit sum always leaves a multiple of 9, so the division by 3 is exact.)

774. Step I: the end numbers are 13 and 28; their sum is 41. The remaining numbers are 25, 17, 32, 19, and 41 is placed at the right end, giving 25, 17, 32, 19, 41. Step II: the end numbers are 25 and 41; their sum is 66. The remaining numbers are 17, 32, 19, giving 17, 32, 19, 66. Step III: the end numbers are 17 and 66; their sum is 83. The remaining numbers are 32, 19, giving 32, 19, 83. The sum of Step III is $32 + 19 + 83 = 134$. Hence C.

775. Step I (product of the digits): $4 \times 7 = 28$; $6 \times 3 = 18$; $8 \times 5 = 40$; $9 \times 2 = 18$; $3 \times 8 = 24$. Step I is 28, 18, 40, 18, 24. Step II (descending order): 40, 28, 24, 18, 18. Step III (multiply each by its position): $40 \times 1 = 40$; $28 \times 2 = 56$; $24 \times 3 = 72$; $18 \times 4 = 72$; $18 \times 5 = 90$. Step III is 40, 56, 72, 72, 90. Adding: $40 + 56 = 96$; $96 + 72 = 168$; $168 + 72 = 240$; $240 + 90 = 330$. Hence the sum is 330, option C. Note that the two equal numbers 18 contribute differently because the weights 4 and 5 depend on position, so the descending arrangement of Step II must be carried out before the weighting.

776. Step I: $18 < 50$ gives 36; $62 \geq 50$ gives 37; $45 < 50$ gives 90; $30 < 50$ gives 60; $55 \geq 50$ gives 30. Step I is 36, 37, 90, 60, 30. Step II: 36 gives 72; 37 gives 74; 90 gives 65; 60 gives 35; 30 gives 60. Step II is 72, 74, 65, 35, 60. Step III: 72 gives 47; 74 gives 49; 65 gives 40; $35 < 50$ gives 70; 60 gives 35. Step III is 47, 49, 40, 70, 35. Adding: $47 + 49 = 96$; $96 + 40 = 136$; $136 + 70 = 206$; $206 + 35 = 241$. Hence C.

777. Step I: the leftmost number 20 becomes $20 \times 3 = 60$ and goes to the right end; the others become $34 - 2 = 32$, $27 - 2 = 25$, $41 - 2 = 39$. Step I is 32, 25, 39, 60. Step II: the leftmost number 32 becomes 96 and goes to the right end; the others become $25 - 2 = 23$, $39 - 2 = 37$, $60 - 2 = 58$. Step II is 23, 37, 58, 96. Step III: the leftmost number 23 becomes 69 and goes to the right end; the others become $37 - 2 = 35$, $58 - 2 = 56$, $96 - 2 = 94$. Step III is 35, 56, 94, 69. The highest number is 94 and the lowest is 35, so the difference is $94 - 35 = 59$. Hence C.

Subtopic 2.9.3

778. Compare the input with Step I. The number 18 (the smallest number of the line) has been picked up and placed at the extreme left; every other element keeps its original relative order. In Step II the next smallest number 29 is picked up and placed at the extreme left, pushing 18 one place to the right. So the rule is: in each step the smallest number not yet arranged is shifted to the extreme left end.
Step III: the next smallest number is 45, so we get 45 29 18 loan fund 63 rate.
Step IV: the next smallest number is 63, so we get 63 45 29 18 loan fund rate.
Now all four numbers stand at the left in descending order (last shifted number is leftmost) and the words loan, fund, rate remain in their original order, so no further step is possible. Option (A) is wrong because the numbers finish in descending, not ascending, order; option (B) wrongly interchanges loan and fund, which the machine never does; option (D) is only Step III.

779. In Step I the word bank is taken out and placed at the extreme right end. Among the words bank, cash, debit, offer, bank comes first in alphabetical order. In Step II the next word in alphabetical order, cash, is placed at the extreme right end, so it goes to the right of bank. Hence the rule is: in each step the alphabetically earliest word not yet arranged is shifted to the extreme right end, while the numbers keep their original relative order.
Step III: the next word alphabetically is debit, which is lifted from its place and put at the extreme right, giving 32 17 49 offer bank cash debit.
Option (B) is Step IV (after offer has also been shifted); option (C) wrongly reorders the numbers, which this machine never touches; option (D) shifts the wrong word.

780. In the illustration $36 \to 3 + 6 = 9$, $19 \to 1 + 9 = 10$, $74 \to 7 + 4 = 11$, $52 \to 5 + 2 = 7$, $63 \to 6 + 3 = 9$. So Step I replaces every number by the sum of its digits, keeping the positions unchanged. Step I of the illustration is 9 10 11 7 9, and Step II is 7 9 9 10 11, i.e. the same values arranged in ascending order.
For the input 57 84 29 46 63:
Step I: $5 + 7 = 12$, $8 + 4 = 12$, $2 + 9 = 11$, $4 + 6 = 10$, $6 + 3 = 9$, i.e. 12 12 11 10 9.
Step II: arrange these in ascending order: 9 10 11 12 12.
Option (A) is Step I itself; option (B) wrongly changes one 12 into 13; option (C) is not in ascending order.

781. The input has six elements. In Step I the first element (bank) and the sixth element (36) have exchanged places; nothing else moved. In Step II the second element (24) and the fifth element (note) have exchanged places. So the machine interchanges the outermost pair first, then the next inner pair, and so on.
Step III must therefore interchange the third and fourth elements of the Step II line. Step II is 36 note pay 51 24 bank, whose third and fourth elements are pay and 51. Interchanging them gives 36 note 51 pay 24 bank.
With six elements only three such pairs exist, so Step III is the last step. Option (A) is Step II, not the last step; option (C) puts bank back at the left, which never happens; option (D) swaps the wrong pair.

782. The words in the line are branch (6 letters), fee (3 letters), deposit (7 letters) and loan (4 letters). In Step I the shortest word fee moves to the extreme left; in Step II the next shortest word loan moves to the extreme left, pushing fee one place right. So in each step the shortest word not yet arranged is shifted to the extreme left end, while the numbers keep their original relative order.
Step III shifts the next shortest word, branch, to the extreme left:

Step III: branch loan fee 34 17 82 deposit 59.
Counting from the right end: 59 is first, deposit is second, 82 is third and 17 is fourth. Hence the required element is 17.

783. In Step I of the illustration each number becomes the sum of its digits and each word becomes its number of letters: 52 → 7, branch → 6, 38 → 11, fee → 3, 16 → 7, note → 4. Step II is 4 7 3 11 6 7, which is exactly the Step I line written in the reverse order.
For the input 47 deposit 65 cash 23 rate:
Step I: $4 + 7 = 11$, deposit has 7 letters, $6 + 5 = 11$, cash has 4 letters, $2 + 3 = 5$, rate has 4 letters, giving 11 7 11 4 5 4.
Step II: reverse this line: 4 5 4 11 7 11.
Option (A) is Step I; option (B) is sorted, not reversed; option (D) reverses only part of the line.

784. In Step I every element has moved one place to the right and the last element (19) has come round to the first place. Step II repeats the same cyclic shift by one place. So each step is a cyclic right shift by one position.
Step III: 27 file 19 pen 34 desk.
Step IV: desk 27 file 19 pen 34.
The third element from the left in Step IV is file, which is not listed among options (A) to (D). Hence None of these is correct.

785. Step I shifts the smallest number 27 to the extreme left. Step II shifts gold, the alphabetically earliest word, to the extreme right. Step III again shifts a number, the next smallest 41, to the extreme left. So the machine alternates: odd steps move the smallest remaining number to the extreme left, even steps move the alphabetically earliest remaining word to the extreme right.
Step III is 41 27 63 site mint gold.
Step IV: the next word alphabetically is mint; move it to the extreme right, giving 41 27 63 site gold mint.
Step V: the next smallest number is 63; move it to the extreme left, giving 63 41 27 site gold mint.
Option (A) is Step VI (after site has moved); option (C) is Step III with the words altered; option (D) has the words in an order the machine never produces.

786. In the illustration $12 + 5 = 17$, $5 + 9 = 14$, $9 + 3 = 12$ and $3 + 7 = 10$, so each step replaces the line by the sums of successive adjacent pairs, shortening the line by one number each time. The machine stops when a single number is left.
For the input 8 14 6 11 5:
Step I: $8 + 14 = 22$, $14 + 6 = 20$, $6 + 11 = 17$, $11 + 5 = 16$, i.e. 22 20 17 16.
Step II: $22 + 20 = 42$, $20 + 17 = 37$, $17 + 16 = 33$, i.e. 42 37 33.
Step III: $42 + 37 = 79$, $37 + 33 = 70$, i.e. 79 70.
Step IV: $79 + 70 = 149$.
So the last step is 149.

787. In Step I each word is written with its letters in reverse order: note becomes eton, bank becomes knab, fund becomes dnuf, cash becomes hsac. In Step II these reversed words are arranged in alphabetical order of the reversed forms: dnuf, eton, hsac, knab (d, e, h, k). Note that this is a genuine sorting and not merely an interchange of the end words: dnuf moves from the third place to the first and knab from the second place to the fourth, so every word changes its position.
For the input loan debit rate ledger:
Step I: loan → naol, debit → tibed, rate → etar, ledger → regdel.
Step II: arrange naol, tibed, etar, regdel alphabetically by their first letters e, n, r, t: etar, naol, regdel, tibed.
Option (A) is Step I; option (B) is the reverse alphabetical order; option (C) has regdel and naol interchanged.

788. Compare the input with Step I. Two elements have moved: the smallest number 26 has gone to the extreme left, and ledger, the longest word (6 letters against rupee 5 and cash 4), has gone

to the extreme right. All other elements keep their relative order. So in every step the machine simultaneously shifts the smallest unarranged number to the extreme left and the longest unarranged word to the extreme right.
Step I is 26 34 rupee 71 cash 58 ledger.
In Step II the smallest number still unarranged is 34, which moves to the extreme left (pushing 26 one place right), and the longest word still unarranged is rupee, which moves to the extreme right (to the right of ledger).
Step II: 34 26 71 cash 58 ledger rupee.
Option (A) keeps 26 at the left, ignoring the new shift; option (B) moves 58, which is not the smallest remaining number; option (D) disturbs cash without reason.

789. In Step I of the illustration 3416 becomes 6413, 7529 becomes 9527 and 8264 becomes 4268: in each number the first and the last digits are interchanged while the two middle digits stay where they are. Step II arranges the resulting numbers in descending order.
For the input 5827 4396 7148 2635:
Step I: 5827 $\rightarrow$ 7825, 4396 $\rightarrow$ 6394, 7148 $\rightarrow$ 8147, 2635 $\rightarrow$ 5632.
Step II: arrange 7825, 6394, 8147, 5632 in descending order: 8147 7825 6394 5632.
The second number from the left end is 7825. Option (A) is the first from the left, option (C) the third and option (D) the fourth.

790. Number the positions of the input as 1 to 7: 24(1), mint(2), 51(3), gold(4), 37(5), bond(6), 46(7).
Step I is 24 51 37 46 mint gold bond, that is the elements standing at the odd positions (24, 51, 37, 46) written first in order, followed by the elements standing at the even positions (mint, gold, bond).
Apply the same rule to Step I. Its odd-position elements are 24, 37, mint, bond and its even-position elements are 51, 46, gold, giving 24 37 mint bond 51 46 gold, which is exactly the given Step II. The rule is confirmed.
Step III: in Step II the odd-position elements are 24, mint, 51, gold and the even-position elements are 37, bond, 46, so Step III is 24 mint 51 gold 37 bond 46.
This is precisely the input line, so the input reappears at Step III.

791. In the illustration 500 $\rightarrow$ 600, 800 $\rightarrow$ 960, 300 $\rightarrow$ 360, 600 $\rightarrow$ 720. Each amount is multiplied by 1.2, i.e. increased by 20% (for example $800 + \frac{20}{100} \times 800 = 800 + 160 = 960$). Step II then arranges the revised amounts in ascending order.
For the input Rs. 450 Rs. 750 Rs. 250 Rs. 900:
Step I: $450 \times 1.2 = 540$, $750 \times 1.2 = 900$, $250 \times 1.2 = 300$, $900 \times 1.2 = 1080$, i.e. 540 900 300 1080.
Step II: ascending order gives 300 540 900 1080.
The largest amount is Rs. 1080 and the second largest is Rs. 900, so the required difference is $1080 - 900 = 180$, i.e. Rs. 180.

792. In Step I each word is replaced by the sum of the alphabetical positions of its first and last letters, and each number by the product of its digits. Check: bank gives $b = 2$, $k = 11$, sum 13; 34 gives $3 \times 4 = 12$; mode gives $m = 13$, $e = 5$, sum 18; 27 gives $2 \times 7 = 14$; pen gives $p = 16$, $n = 14$, sum 30. This matches 13 12 18 14 30. Step II arranges these values in descending order.
For the input gold 46 wire 58 cash:
gold: $g = 7$, $d = 4$, so $7 + 4 = 11$.
46: $4 \times 6 = 24$.
wire: $w = 23$, $e = 5$, so $23 + 5 = 28$.
58: $5 \times 8 = 40$.
cash: $c = 3$, $h = 8$, so $3 + 8 = 11$.
Step I: 11 24 28 40 11.
Step II: descending order gives 40 28 24 11 11.
Option (A) is ascending; option (B) is not in order; option (D) miscomputes one of the words as 12.

793. Compare each line with the one before it. In Step I only the first two elements, 34 and bond, have changed places, so the block of the first two elements has been written in reverse order. In Step II the line bond 34 17 of Step I has become 17 34 bond, that is the block of the first three elements

reversed, the rest being untouched. In Step III the block 17 34 bond cash of Step II has become cash bond 34 17, that is the block of the first four elements reversed. So in Step n the machine reverses the block formed by the first $n+1$ elements and leaves the remaining elements as they are. (The rule is not merely a shift of one element to the front: that would have turned Step I into 17 bond 34 cash 52 gold, which is not what Step II shows.)
Step III is cash bond 34 17 52 gold.
Step IV reverses the first five elements, cash bond 34 17 52, giving 52 17 34 bond cash gold.
Step V reverses the first six elements, that is the whole line, giving gold cash bond 34 17 52.
Counting from the left end of Step V, gold is first, cash is second and bond is third. Hence the required element is bond.

794. Step I of the illustration is the input written in reverse order. In Step II each number of the Step I line is reduced by the sum of its own digits: $71-(7+1)=63$, $38-(3+8)=27$, $62-(6+2)=54$, $45-(4+5)=36$. Step III arranges those results in ascending order.
For the input 84 29 57 63:
Step I: reverse the line, giving 63 57 29 84.
Step II: $63-(6+3)=54$, $57-(5+7)=45$, $29-(2+9)=18$, $84-(8+4)=72$, i.e. 54 45 18 72.
Step III: ascending order gives 18 45 54 72.
Counting from the right end, 72 is first and 54 is second, so the required number is 54.

795. In Step I every letter of every word is replaced by the letter that comes immediately after it in the alphabet: cash gives $c \to d$, $a \to b$, $s \to t$, $h \to i$, i.e. dbti; bond gives $b \to c$, $o \to p$, $n \to o$, $d \to e$, i.e. cpoe. In Step II each word obtained in Step I is written with its letters in reverse order: dbti becomes itbd and cpoe becomes eopc.
For the input loan mint:
Step I: loan gives $l \to m$, $o \to p$, $a \to b$, $n \to o$, i.e. mpbo; mint gives $m \to n$, $i \to j$, $n \to o$, $t \to u$, i.e. njou.
Step II: reverse each word: mpbo becomes obpm and njou becomes uojn.
So Step II is obpm uojn. Option (A) is Step I; option (B) merely reverses the original words without the letter shift; option (C) reverses the second word incorrectly.

796. In Step I the elements in positions $(1,2)$, $(3,4)$ and $(5,6)$ have been interchanged. In Step II the elements in positions $(2,3)$ and $(4,5)$ have been interchanged. Step III again interchanges $(1,2)$, $(3,4)$, $(5,6)$. So odd steps swap the pairs starting at position 1 and even steps swap the pairs starting at position 2.
Step III: cash bank debt 21 47 34.
Step IV (swap positions $2,3$ and $4,5$): cash debt bank 47 21 34.
Step V (swap $1,2$; $3,4$; $5,6$): debt cash 47 bank 34 21.
Step VI (swap $2,3$ and $4,5$): debt 47 cash 34 bank 21.
The reverse of the input 21 bank 34 cash 47 debt is debt 47 cash 34 bank 21, which is exactly Step VI.

797. In Step I each number is replaced by the sum of the digits of its square and each word by the number of consonants in it. Check: $24^2=576$ and $5+7+6=18$; audit has consonants d, t, i.e. 2; $13^2=169$ and $1+6+9=16$; cash has consonants c, s, h, i.e. 3. This matches 18 2 16 3. Note that audit has 5 letters and 3 vowels, so the word rule can be neither the letter count (5) nor the letter count reduced by one (4); only the consonant count gives 2. Step II arranges these values in ascending order.
For the input 18 branch 23 fee:
$18^2=324$, and $3+2+4=9$.
branch has consonants b, r, n, c, h, i.e. 5.
$23^2=529$, and $5+2+9=16$.
fee has only the consonant f, i.e. 1.
Step I: 9 5 16 1.
Step II: ascending order gives 1 5 9 16.
Option (A) is Step I; option (B) is not fully sorted; option (C) wrongly counts the consonants of branch as 6.

798. In Step I the eight numbers are paired from the two ends and each pair is replaced by the positive difference: first with eighth $|12 - 33| = 21$, second with seventh $|45 - 19| = 26$, third with sixth $|38 - 54| = 16$, fourth with fifth $|27 - 61| = 34$. This gives 21 26 16 34. Step II arranges those four values in descending order, 34 26 21 16. Step III replaces the line by the sums of adjacent pairs: $34 + 26 = 60$, $26 + 21 = 47$, $21 + 16 = 37$.
For the input 34 57 19 82 46 23 71 65:
Step I: $|34 - 65| = 31$, $|57 - 71| = 14$, $|19 - 23| = 4$, $|82 - 46| = 36$, i.e. 31 14 4 36.
Step II: descending order gives 36 31 14 4.
Step III: $36 + 31 = 67$, $31 + 14 = 45$, $14 + 4 = 18$, i.e. 67 45 18.
Option (A) is out of order; options (B) and (D) use wrong sums.

Subtopic 2.10.1

799. From I: R is west of Q, so relative to Q point R lies on the west side. P is north of R, so relative to Q point P lies both to the west and to the north. Hence P is to the north-west of Q. The direction is fixed (only the exact distance is unknown, and the question asks only for direction), so I alone is sufficient. From II: Q is south-east of P; reversing the direction, P is north-west of Q. So II alone is also sufficient. Both statements independently give the same answer, north-west. Hence either statement alone suffices.

800. From I: P is a daughter of Q's mother, so P and Q share the same mother, i.e. they are siblings. The word 'daughter' fixes that P is female. A female sibling of Q is Q's sister. So I alone gives the exact relation. From II: P is one of the two children of Q's father, so P is again a sibling of Q, but nothing tells us whether P is male or female. P could be Q's brother or Q's sister, so the relation is not determined. Hence only statement I is sufficient.

801. Each statement alone contains three words and three codes with no repetition, so no single code can be matched to a single word from one statement. Taking both together: statement I has words {money, is, power} with codes {sa, ti, la}; statement II has words {power, of, money} with codes {la, ti, ka}. The words common to both statements are 'money' and 'power', and the codes common to both are 'ti' and 'la'. So {money, power} corresponds to {ti, la}, but we cannot tell which of the two codes belongs to 'money'. (We can only conclude that 'is' = sa and 'of' = ka.) Hence even both statements together are not sufficient.

802. From I: for a class of n students, rank from top $= n -$ rank from bottom $+ 1$. So Sunita's rank from the top $= 40 - 18 + 1 = 23$. Statement I alone is sufficient. From II: Ramesh is 18th from the top; a student 5 ranks below him is at position $18 + 5 = 23$ from the top. Statement II alone is also sufficient (the class strength is not even needed here). Both give 23rd from the top, so either statement alone suffices.

803. From I: $D > A > B$ and $D > A > C$. Nothing is said about E, who could draw more than D. So I alone is not sufficient. From II: $C > E > B$ and $D > E$. Nothing is said about A, who could be the highest. So II alone is not sufficient. Combining: from I, $D > A$, $A > B$, $A > C$; from II, $D > E$. So D is greater than A and E directly, and greater than B and C through A. Thus D draws the highest salary. Both statements together are necessary.

804. From I: position from the left $= 25 - 8 + 1 = 18$. This is unique, so I alone is sufficient. From II: Meena is at position 10 from the left. If 7 children stand between Meena and Vikram, Vikram is at $10 + 7 + 1 = 18$ or at $10 - 7 - 1 = 2$. Statement II does not say on which side of Meena Vikram stands, so two positions remain possible and II alone is not sufficient. Hence only statement I is sufficient.

805. Let Rakesh's present age be R and his father's present age be F. From I: $R - 5 = \dfrac{F - 5}{3}$, one equation in two unknowns, so I alone is not sufficient. From II: $F = 47$, which says nothing about R, so II alone is not sufficient. Combining: $F - 5 = 42$, so $R - 5 = \dfrac{42}{3} = 14$, giving $R = 19$ years. Both statements together are necessary.

806. Number the six seats 1 to 6 around the table so that moving one step to a person's right means moving to the next higher number (cyclically). With 6 seats, the seat opposite seat k is seat $k+3$. Put Naveen at seat 1; the seat opposite him is seat 4. From I: Amit is second to the left of Naveen, i.e. at seat $1-2=5$. Divya is an immediate neighbour of Amit, so Divya is at seat 4 or seat 6. Since it is not settled which, seat 4 may hold Divya, Bhavna, Chetan or Esha. I alone is not sufficient. From II: Bhavna is third to the right of Naveen, i.e. at seat $1+3=4$, which is exactly the seat opposite Naveen. So II alone answers the question: Bhavna sits opposite Naveen.

807. From I: R is the sister of Q, so R and Q have the same mother. M is R's mother, therefore M is also Q's mother. The question asks how Q is related to M, i.e. whether Q is M's son or M's daughter. Nothing in I fixes the sex of Q — the phrase 'only sister of Q' is equally consistent with Q being a boy or a girl (a girl can also have exactly one sister). So I alone is not sufficient. From II: it only tells us Q's father has two children; it does not even link M to Q. Not sufficient. Combining: we learn the two children are Q and R, but the sex of Q is still unknown, so we cannot say 'son' or 'daughter'. Even both statements together are not sufficient.

808. From I: the first sentence has words {bank, gives, loan} with codes {mo, pa, ni} and the second has words {loan, is, costly} with codes {ni, ta, ke}. The only word appearing in both sentences is 'loan', and the only code appearing in both code sets is 'ni'. Since the codes are one-to-one, the shared word must carry the shared code, so 'loan' = 'ni'. Statement I alone is sufficient. From II: 'gives costly gift' = 'pa ke zo' contains three fresh words and three codes with no repeated word to compare against, and the word 'loan' does not appear at all, so II alone gives no information about 'loan'. Hence only statement I is sufficient.

809. A chain of inequalities gives a definite conclusion between its two ends only if all the signs point the same way; a strict $>$ anywhere in such a chain makes the overall relation strict. From I: $P > Q$, $Q = R$ and $R \geq S$. All links run in the same direction, and the first link is strict, so $P > S$. Definite answer: yes. I alone is sufficient. From II: $S < T$, $T \leq Q$ and $Q < P$. Reading it from the right, $P > Q \geq T > S$, so again $P > S$. Definite answer: yes. II alone is also sufficient. Since each statement independently settles the question, either statement alone is sufficient.

810. From I: 'exactly two persons between' means the floor numbers differ by 3. With Bhaskar on floor 5, Anjali is on floor $5-3=2$ or floor $5+3=8$; both lie within 1 to 8, so two possibilities remain and I alone is not sufficient. From II: Anjali is on an even floor above Bhaskar's floor, but Bhaskar's floor is not given here, so Anjali could be on floor 2, 4, 6 or 8. Not sufficient. Combining: the candidates from I are 2 and 8; II requires Anjali's floor to be above 5, which rules out floor 2 and leaves floor 8 (which is indeed even). So Anjali lives on floor 8, and both statements together are necessary.

811. From I: take Y as the origin, east as the positive x direction and north as the positive y direction. Walking 5 km east reaches $(5, 0)$. Facing east, a left turn means facing north; walking 3 km reaches $(5, 3)$. Facing north, another left turn means facing west; walking 8 km reaches $(5-8,\ 3) = (-3, 3)$. So X is 3 km west and 3 km north of Y, i.e. X is to the north-west of Y. I alone is sufficient. From II: Z is fixed relative to Y, but X is only said to be 3 km from Z — it may lie in any direction around Z, so the direction of X from Y is not determined. II alone is not sufficient. Hence only statement I is sufficient.

812. Number the seats 1 to 6 from left to right. From II, C is at seat 1. From I, A is three seats to the left of D, so (A, D) is $(1, 4)$, $(2, 5)$ or $(3, 6)$; seat 1 is taken by C, leaving $(2, 5)$ or $(3, 6)$. Case $A = 2$, $D = 5$: B must be next to A, i.e. at seat 1 or 3; seat 1 is C, so $B = 3$, leaving seats 4 and 6 for E and F. But III needs $|E - F| = 3$, whereas $|4 - 6| = 2$, so this case is impossible. Case $A = 3$, $D = 6$: B is at seat 2 or 4, and E, F take the two seats left over from $\{2, 4, 5\}$. III needs a gap of 3, and the only such pair inside $\{2, 4, 5\}$ is $(2, 5)$; so E and F occupy seats 2 and 5 and B takes seat 4. Hence seat 6 is D, the extreme right end. Now check dispensability. Without III both cases survive and the right end is D in one and E or F in the other, so III is needed. Without II, seat 1 is not fixed and B is unplaced, so several arrangements survive. Without I, A and D float freely. Therefore all three statements are necessary.

813. Number the eight seats 1 to 8 around the table so that moving one step to a person's right means moving to the next higher number (cyclically); then the seat opposite seat k is seat $k+4$. Place Q at seat 1; the required seat, third to the right of Q, is seat 4. From I: P is opposite Q, so P is at seat 5. R is second to the left of P, i.e. at seat $5-2=3$. T is third to the right of R, i.e. at seat $3+3=6$. S is next to T, i.e. at seat 5 or 7; seat 5 is P, so S is at seat 7. Seats 2, 4 and 8 are still free for U, V and W, so seat 4 is not decided: I alone is not sufficient. From II alone, no seat is anchored at all, so it is not sufficient. Combining: U must be next to Q (seat 1), so U is at seat 2 or seat 8. If U is at seat 2, then V and W take seats 4 and 8; V must be two to the right of W, but $4 \neq 8+2$ and $8 \neq 4+2$, so this fails. If U is at seat 8, then V and W take seats 2 and 4; W at seat 2 gives V at seat 4, which works. Hence seat 4 is V, so V sits third to the right of Q, and both statements together are necessary.

814. From I: the two sentences share exactly one word, 'today', and their code sets {ka, lo, mi, ne} and {ne, pa, zo} share exactly one code, 'ne'. So 'today' = 'ne', and the remaining words 'new', 'branch', 'opened' correspond in some order to 'ka', 'lo', 'mi'. The code for 'branch' cannot be isolated, so I alone is not sufficient. From II: compare the second and third sentences — 'new manager arrived' = {mi, ta, ru} and 'manager visited branch' = {ta, vi, lo} share only the word 'manager' and only the code 'ta', so 'manager' = 'ta'. Now compare the first and third sentences — 'branch manager is new' = {lo, ta, pa, mi} and 'manager visited branch' = {ta, vi, lo} share the words {branch, manager} and the codes {lo, ta}. Since 'manager' is already fixed as 'ta', the remaining pairing forces 'branch' = 'lo'. Statement II alone is sufficient.

815. From I: put A at the origin with east as $+x$ and north as $+y$. Walking 9 m east gives $B=(9,0)$. Facing east, a left turn faces north; 12 m gives $C=(9,12)$. Facing north, a left turn faces west; 9 m gives $D=(9-9,\ 12)=(0,12)$. Facing west, a left turn faces south; 15 m gives $E=(0,\ 12-15)=(0,-3)$. Since $A=(0,0)$ and $E=(0,-3)$ lie on the same vertical line, $AE=3$ m. I alone is sufficient. From II: measuring northwards from F, point A is at $+4$ m and point E is at $+1$ m on the same line, so $AE=4-1=3$ m. II alone is also sufficient. Both routes give 3 m, so either statement alone answers the question.

816. Number the seats 1 to 7 from left to right; the middle seat is seat 4. From I: G is at an extreme end, so G is at seat 1 or seat 7. 'B sits third to the right of G' means B is at seat $G+3$. If G were at seat 7, then B would be at seat 10, which does not exist; so G must be at seat 1 and B at seat 4. Seat 4 is the middle seat, so B sits in the middle — statement I alone is sufficient. From II: it only fixes $|D-A|=3$ and $C=A+1$; for example D at 3 with A at 6, C at 7, or A at 2 with C at 3 and D at 5 — the occupant of seat 4 differs, so II alone is not sufficient. From III: it only fixes $|E-F|=3$, which never pins down seat 4, so III alone is not sufficient. Hence only statement I is sufficient.

817. Number the months January to August as 1 to 8. Among these, the months with 31 days are January (1), March (3), May (5), July (7) and August (8). From I: exactly two months lie between them, so the month numbers differ by 3, and Rekha's month is one of $1, 3, 5, 7, 8$. The possibilities for Pankaj are: Rekha 1 $\Rightarrow$ Pankaj 4; Rekha 3 $\Rightarrow$ Pankaj 6; Rekha 5 $\Rightarrow$ Pankaj 2 or 8; Rekha 7 $\Rightarrow$ Pankaj 4; Rekha 8 $\Rightarrow$ Pankaj 5. Many options, so I alone is not sufficient. From II: Pankaj comes after Rekha and before July, so Pankaj's month is at most 6 — that alone leaves several months, so II alone is not sufficient. Combining, apply 'Pankaj after Rekha' and 'Pankaj before month 7' to the list from I: Rekha 1, Pankaj 4 is valid; Rekha 3, Pankaj 6 is valid; Rekha 5, Pankaj 2 fails (Pankaj is earlier); Rekha 5, Pankaj 8 fails (after July); Rekha 7, Pankaj 4 fails; Rekha 8, Pankaj 5 fails. Two valid cases remain, April and June, so even both statements together are not sufficient.

818. From I: Sunil is at rank 10 from the top. Vinay ranks below him with exactly 20 candidates in between, so Vinay's rank from the top is $10+20+1=31$. Statement I alone is sufficient. From II: if Aarti's rank from the top is 16, the number of candidates scoring more than Aarti is $16-1=15$. The number scoring more than Vinay is twice this, i.e. $2\times 15=30$. A candidate with exactly 30 candidates above him is at rank $30+1=31$ from the top. Statement II alone is also sufficient. Both give rank 31, consistent with a batch of 45, so either statement alone answers the question.

819. From I: we get Farida $<$ Deepak $<$ Girish with Farida not at Rs. 1,200, so Farida is Rs. 1,500

or Rs. 1,800. If Farida is Rs. 1,500, Deepak could be Rs. 1,800 (Girish Rs. 2,000 or Rs. 2,400) or Rs. 2,000 (Girish Rs. 2,400). Two different values for Deepak survive, so I alone is not sufficient. From II: we need two of the five listed prices adding to Rs. 3,300. Checking the pairs, $1200 + 1500 = 2700$, $1200 + 1800 = 3000$, $1200 + 2000 = 3200$, $1200 + 2400 = 3600$, $1500 + 1800 = 3300$, $1500 + 2000 = 3500$, $1500 + 2400 = 3900$, $1800 + 2000 = 3800$, $1800 + 2400 = 4200$, $2000 + 2400 = 4400$. The only pair summing to Rs. 3,300 is {Rs. 1,500, Rs. 1,800}. Since Farida's article is cheaper, Farida bought the Rs. 1,500 article and Deepak the Rs. 1,800 one. Statement II alone is sufficient.

Subtopic 2.11.1

820. An assumption is something the speaker takes for granted for the statement to make sense. The advertiser is trying to sell the product by promising stain removal; this appeal works only if buyers actually care about stain-free clothes. Hence I is taken for granted and is implicit. Assumption II is far stronger than anything the advertisement needs. Claiming that one's own product removes "even the toughest stains" does not presuppose that every rival product fails; the advertiser may simply believe his product is better or equally good. An assumption that is broader or more extreme than the statement requires is never implicit. Hence only I is implicit, and option A is correct.

821. Apply the negation test to each assumption. Negate I: suppose entries could be updated without the passbook. Then asking customers to carry it would be pointless, so the notice collapses. I is therefore implicit. Negate II: suppose the customers hold no passbooks at all. Then a request to bring passbooks is meaningless, and again the notice collapses. II is therefore implicit as well. Since both are indispensable to the notice, option E is correct. Note that the notice does not assume customers usually forget their passbooks, but that idea is not among the given assumptions.

822. The bank has chosen to publicise a free add-on benefit. It would do so only if it believed that such a benefit pulls customers in; so I is taken for granted and is implicit. Assumption II converts a marketing pull into an absolute necessity: it says the scheme would attract nobody at all without the cover. The bank need not believe this — the deposit may also carry attractive interest, safety and convenience. Since II is an extreme claim not required by the statement, it is not implicit. Hence only I is implicit and option A is correct.

823. The bank is redirecting customers to an alternative ATM. If that alternative were also out of order, the advice would be useless; so the bank takes its working condition for granted and I is implicit. Likewise, the bank mentions the distance of 500 metres precisely because it believes the customers can cover it; if they could not reach the other branch, the suggestion would again be pointless. So II is implicit. Both assumptions are necessary for the notice to serve any purpose, and option E is correct.

824. The whole appeal of the advertisement rests on speed. If the bank could not actually process applications quickly, its own claim of twenty-four hours would be baseless; so the bank takes its own capability for granted and II is implicit. Assumption I claims a monopoly. The advertisement addresses people who want a *quick* loan; it neither says nor needs that no other bank lends at all — indeed, competition is the very reason for advertising speed. Hence I is not implicit, and only II is implicit. Option B is correct.

825. The statement is a plain announcement of a decision about diesel. Assumption I brings in petrol, a different commodity about which the statement says nothing; a decision on diesel does not presuppose any decision on petrol. Assumption II is a prediction about future consumer behaviour, and an extreme one at that — a rise of Rs. 2 per litre hardly presupposes that people will stop buying diesel vehicles altogether. Predictions of consequences are inferences at best, never assumptions. Since neither idea is taken for granted by the announcement, option D is correct.

826. The rule offers the applicant a choice between two documents. The bank cannot be assuming that every applicant holds an Aadhaar card, for then the mention of the voter identity card would be unnecessary; equally it cannot be assuming that every applicant holds a voter identity card. So neither I alone nor II alone is implicit. What the bank does take for granted is that the applicant possesses at

least one of the two, that is, either I or II holds. This is the standard pattern for statements framed with "either ... or". Hence option C is correct.

827. Step 1: identify the nature of the measure. A penal charge linked to a balance threshold is a deterrent; a bank imposes it only if it wants fewer low-balance accounts or wants those balances raised. So II is taken for granted and is implicit. Step 2: test I. A deterrent is announced in advance precisely so that some customers change their behaviour; if the bank believed nobody would respond, announcing the threshold would serve no purpose. So I is implicit. Step 3: test III. It says *all* such customers will close their accounts, which is both an extreme prediction and contrary to the bank's own interest in retaining customers. Extreme predictions of consequence are not assumptions. Hence only I and II are implicit, and option A is correct.

828. Step 1: test I. The bank is waiving a screening test for a group of candidates. It can justify the waiver only if it believes graduation marks already screen these candidates adequately; otherwise the waiver would defeat the purpose of the preliminary test. So I is implicit. Step 2: test II. A concession framed for a category is framed only if the bank expects the category to be non-empty; a rule about a group that certainly does not exist would be pointless. So II is implicit. Step 3: test III. The notice exempts high scorers from the preliminary test; it does not bar the others. They simply write the preliminary test as usual and can very much be recruited. III contradicts the natural reading and is not implicit. Hence only I and II are implicit, and option B is correct.

829. Step 1: test I. An organisation issues a deadline only when it believes the deadline is achievable with the resources available; an impossible instruction would not be issued. So I is implicit. Step 2: test II. A time limit is imposed to prevent delay; the head office must regard delay as harmful, otherwise the limit has no rationale. So II is implicit. Step 3: test III. The instruction fixes a standard for the future. It may be issued as routine policy, to meet a regulatory requirement, or after a general review; it does not presuppose deliberate misconduct by managers. Attributing intent to them goes well beyond what the instruction needs, so III is not implicit. Hence only I and II are implicit, and option D is correct.

830. The second sentence of the notice is an alternative arrangement, and an alternative is offered only for a need that is expected to arise. If the bank believed no customer would want to transact on a holiday, the sentence would be superfluous; so I is implicit. Next, the bank directs customers to net banking and ATMs. If these channels were also going to be shut down on 15th August, the direction would mislead its own customers; the bank clearly takes their availability for granted. So II is implicit. Both assumptions are necessary, and option E is correct.

831. The statement records a policy decision. Each of the three items given is a forecast about what will follow, and forecasts are consequences, not assumptions. Assumption I additionally asserts uniform and immediate transmission by *all* banks, which the central bank certainly does not take for granted — incomplete transmission is a well-known feature of the system. Assumption II is a prediction about inflation that the statement neither states nor needs. Assumption III is a further prediction about deposit rates, which in practice usually move with the policy rate. Since nothing here is taken for granted by the announcement itself, none of the assumptions is implicit and option E is correct.

832. Step 1: test I. The advertisement sells the loan on the strength of a comparison — "the lowest rate in the market". Such an appeal works only on buyers who care about relative rates, so I is taken for granted and is implicit. Step 2: test II. This is not an assumption at all: it is simply a restatement of what the advertisement openly *claims*. An assumption is an unstated supposition behind the statement, so anything already asserted in the statement cannot be its assumption. II is therefore not implicit. Step 3: test III. To claim the lowest rate, the bank must suppose it knows what others charge; without that supposition the claim could not be made responsibly. So III is implicit. Hence only I and III are implicit, and option C is correct.

833. Step 1: test II. The whole purpose of engaging a business correspondent is to take banking to the doorstep of people who are not reached by the branch counter. If a correspondent could not do this, the rule would be futile. So II is implicit. Step 2: test I. The word "at all" makes this absolute: it says

rural customers never visit branches. The rule only presupposes that *many* are inadequately served, not that none ever comes. An assumption stronger than the statement requires is not implicit. Step 3: test III. The rule is about rural branches; a rule made for one area says nothing about the needs of another. Silence is not denial. So III is not implicit. Hence only II is implicit, and option B is correct.

834. Step 1: link the stated purpose to the stated action. The bank says the aim is to reduce non-performing assets and the action is to stop one particular category of lending. That action can serve the aim only if the category concerned is a material source of bad loans; otherwise stopping it would not move the figure at all. So I is implicit. Step 2: test III. The bank does not stop *all* loans above Rs. 5 lakh — only the *unsecured* ones. Singling out the absence of security makes sense only on the supposition that security lowers the risk of default. So III is implicit. Step 3: test II. Withdrawing one product does not presuppose a drastic fall in total lending; the bank may well redeploy the same funds into secured lending, and the word "drastically" is an extreme prediction of consequence. II is not implicit. Hence only I and III are implicit, and option D is correct.

835. Step 1: test I. The bank has chosen the complaint ratio as the trigger for a *service* review. Selecting a measure as the trigger presupposes that the measure tells you something about service quality; otherwise the whole criterion is arbitrary. So I is implicit. Step 2: test II. The circular is addressed to branch heads and states the threshold in advance. Announcing a consequence in advance is meaningful only if the audience regards that consequence as something to be avoided — that is what gives the circular its force. So II is implicit. Step 3: test III. A ratio-based trigger works perfectly well even if a few complaints turn out to be frivolous; indeed a review is the very mechanism by which genuineness would be examined. The bank need not assume that each individual complaint is justified, only that the aggregate is informative. So III is not implicit. Hence only I and II are implicit, and option B is correct.

836. Step 1: test III. The statement says reminders were actually sent by SMS. Sending an SMS to a borrower is impossible unless the bank holds that borrower's mobile number, so this is quietly taken for granted by the statement itself. III is implicit. Step 2: test I. The data show 30% paying late, which means 70% paid on time; nothing here presupposes that the reminders achieve nothing. "Useless" is a sweeping evaluative claim, and in any case we do not know the default rate without reminders. Not implicit. Step 3: test II. This asserts a cause-and-effect relation for the punctual 70%. The statement gives no comparison group, so the causal link is neither stated nor presupposed; many of those borrowers would have paid on time anyway. Not implicit. Hence only III is implicit, and option C is correct.

837. Step 1: test I. The notice rejects older certificates and accepts only recent ones. Insisting on recency makes sense only if an older document is regarded as possibly out of date for the purpose in hand. So I is implicit. Step 2: test II. A condition that no applicant could satisfy would defeat the scheme; the board must take it for granted that fresh certificates can in fact be obtained from the competent authority. So II is implicit. Step 3: test III. The requirement is a *certificate of income*, and such a certificate can perfectly well record a very low or nil income — that is precisely how eligibility for a subsidy is often established. The notice therefore does not presuppose that every applicant earns something. III is not implicit. Hence only I and II are implicit, and option A is correct.

838. Step 1: test I. Branch expansion by a bank is a regulated activity. A chairman announcing a firm three-year target publicly must be supposing that the necessary approvals are obtainable; if he believed they would be refused, the announcement could not be made. So I is implicit. Step 2: test II. A commercial bank commits capital to an expansion only on the supposition that the expansion will pay — directly or through the deposits and business it brings. So II is implicit. Step 3: test III. The word "double" is decisive here. You can double only a quantity that already exists and is non-zero; doubling zero would still leave zero. So the statement actually presupposes the opposite of III, which makes III not merely unsupported but contradicted. Hence only I and II are implicit, and option C is correct.

839. Step 1: test I. The advice is addressed to a careful investor and uses the word "even". Recommending an emergency reserve to such a person makes sense only if misfortune is supposed to be

possible regardless of care. So I is implicit. Step 2: test II. The reserve is to be held specifically in a savings account rather than in equity. That choice presupposes that the money will be available quickly when the emergency arises; if a savings account were illiquid, the recommendation would be self-defeating. So II is implicit. Step 3: test III. The advice is quantified as "six months' household expenses". Such a benchmark can be acted upon only if the monthly figure can be worked out with reasonable accuracy; otherwise the planner would have named an amount in rupees or given no figure at all. So III is implicit. All three are implicit, and option D is correct.

840. The key is the difference between an assumption and an inference. An assumption is something the writer must already be taking for granted; an inference is something a reader derives *from* what is written. Item I follows arithmetically from the report: if the total amount grows by 22% while the number of accounts grows by only 4%, the average loan size must be larger. Precisely because it is derived from the data, it is a conclusion, not an unstated supposition behind the report. Items II and III are two of several possible explanations for that larger average — costlier courses, more foreign study, higher permissible limits, relaxed norms, and so on. The report merely presents figures and commits itself to none of these explanations, so neither is presupposed. Since I is an inference and II and III are unsupported explanations, none of the assumptions is implicit and option E is correct.

Subtopic 2.11.2

841. A strong argument must be directly related to the question and must carry real weight. Argument I names two concrete, relevant benefits — access to cash after banking hours and reduced counter congestion — both of which follow directly from installing an ATM. It is strong. Argument II is a sweeping generalisation about an entire population; crores of rural customers already use ATMs and RuPay cards, and in any case unfamiliarity is curable by a short demonstration, not a reason to deny the facility. A prejudiced blanket statement about a group is always treated as weak. Hence only argument I is strong, option A. Option E is wrong because II fails; option D is wrong because I clearly succeeds; option C ('either or') applies only when the two arguments are exhaustive alternatives, which is not the case here.

842. Read the proposal exactly as worded: cheque books are to be discontinued *altogether*. Each argument must be tested against that scope, not against some milder version of it. Argument I states two true facts — digital settlement is faster and cheaper to process than physical cheque clearing. But those facts support *promoting* digital payment modes; they say nothing about why the cheque facility must be withdrawn from everyone who still needs it. A saving in the bank's processing cost does not answer the question of what happens to the customer who cannot pay digitally. The argument's scope falls short of the proposal's scope, so it is weak. Argument II meets the proposal head-on: senior citizens and small traders form a real and identifiable dependent group, and total discontinuation would leave their payment needs unmet. Against a proposal of total abolition, the exclusion of an existing dependent user group is a decisive objection, so II is strong. Only argument II is strong, option B. Option E is tempting because I is factually true, but a true statement is not automatically a strong argument for the specific proposition on the table.

843. Argument I raises cost, but a ramp is a small, one-time expense set against a permanent denial of access to an essential service; an argument that weighs a minor cost against a major right is weak. Note also that it offers no figure and no comparison — an unquantified 'it will cost more' can be said against almost any improvement, which is the hallmark of a weak argument. Argument II goes to the heart of the matter: if a service is essential and public, the inability of some citizens to physically enter the premises defeats the purpose of the service. That is a strong argument. So only argument II is strong, option B. Option E is wrong because I is weak; option D is wrong because II is sound.

844. Argument I claims that withdrawing one denomination will end *all* illegal activity. This is an extreme, unsupported over-claim; illegal activity uses many channels — gold, real estate, foreign currency, digital wallets — so the stated effect does not follow. Sweeping claims of total cure are weak. Argument II says only that the note is recent. How long ago something was introduced says nothing about whether it should continue; if a measure is harmful, its newness is no defence, and if it is useful,

its age is no objection. It is therefore irrelevant and weak. Since neither argument survives, the answer is D. Students often mark A here because the conclusion of I sounds desirable — but the desirability of an outcome does not make the argument for it strong; the link from action to outcome must hold.

845. Argument I connects the proposal to a definite long-term benefit and names the specific competencies gained. The link between school-level instruction and later behaviour is plausible and directly on point, so it is strong. Argument II assumes that every parent is financially literate and able to teach — precisely the assumption that fails in the households the proposal is aimed at. An argument that rests on an unfounded assumption is weak. It is also the standard 'it can be learnt informally' objection, which could be raised against teaching any subject and therefore proves too much. Only argument I is strong: option A.

846. Argument I merely restates that transfers exist as a practice. It gives no reason why a two-year cycle in particular is desirable — no mention of curbing collusion with local borrowers, no mention of skill rotation. Restating the status quo is not reasoning, so it is weak. Argument II rests on the preference of the affected group. Personal liking or disliking, without any consequence for the working of the bank or the interest of customers, is not a substantive ground; such arguments are consistently treated as weak. Neither argument is strong, so the answer is D. Had II said 'frequent transfers break the branch's knowledge of local borrowers and raise credit risk', it would have been strong — the difference is that a consequence is stated, not a sentiment.

847. Argument I confuses ownership of the deposit with payment for a service. Nobody proposes to take the customer's money; the proposal is a fee for the handling service, exactly as a locker rent is charged without disturbing ownership of what is inside. An argument built on a misreading of the proposal is weak. Argument II supplies the economic justification — an identifiable cost is incurred, and the user-pays principle allocates it to the person who causes it. That is directly relevant and substantive, hence strong. Only argument II is strong: option B.

848. Argument I points to a demonstrated harm — borrowers rolling over debt at very high rates, with documented distress in the sector's history. It addresses the very evil the ceiling is meant to cure, so it is strong. Argument II does not deny that harm; it identifies a concrete counter-effect. A price ceiling below cost causes supply to exit, and the alternative for the borrower is the informal moneylender, who is worse. This is a substantive consequence, not speculation, so it is also strong. The examinee's mistake here is to assume that the two arguments cannot both be strong because they contradict each other. Strength is judged argument by argument; a genuine policy dilemma has strong arguments on both sides. Hence option E. Note that II is strong because it is conditional and reasoned ('if the ceiling is below cost'); a bare 'banks will suffer' would have been weak.

849. Argument I is an appeal to foreign practice. Citing that others do something is not a reason unless the underlying conditions and results are shown to be comparable; no such showing is made. Bare comparison arguments are weak. Argument II makes two connected points: the measure inflicts a penalty without adjudication, and the objective it seeks — recovery — is already served by existing legal remedies. An argument that shows both a harm and the redundancy of the measure is strong. So only argument II is strong: option B. Option E is tempting only if one mistakes I's mention of 'other countries' for evidence; it supplies no mechanism by which naming improves recovery in Indian conditions.

850. Read the statement precisely: it proposes *complete* replacement within *five* years. Every argument must be tested against that exact proposal. Argument I meets it head-on — if some households cannot transact digitally, total replacement excludes them from banking altogether, which is a decisive objection to totality. It is strong. Argument II is a true and relevant fact, but it establishes only that digital banking is cheaper. Cheapness supports expanding digital banking; it does not support abolishing every branch, nor the five-year deadline. The argument's scope falls short of the proposal's scope, so it is weak in this context. This scope mismatch is the key skill being tested: a true statement is not automatically a strong argument for the specific proposition on the table. Hence only argument I is strong, option A.

851. Argument I states a fact of ownership and stops there. Why should the employer's ownership of a bank decide where an employee's salary is kept? No benefit to the employee, the exchequer or the banking system is shown. The reasoning is circular — government banks for government employees because they are government banks — so it is weak. Argument II makes an unsupported factual claim, and it is beside the point in any case: salary accounts are typically zero-balance accounts with no maintenance charge in both sectors, so the stated advantage does not exist. An argument resting on a false or unverified premise is weak. Neither argument is strong, so the answer is D. A strong argument on either side would have referred to something real — for example, the reach of the branch network in remote postings, or the employee's right to choose a service provider.

852. Argument I invokes a general freedom but ignores why the limit exists. The customer is not prevented from using the money — larger sums can be drawn at the counter or transferred electronically. Since it misstates the restriction and offers no answer to the risk rationale, it is weak. Argument II explains the purpose of the limit and quantifies the consequence of changing it: exposure per compromised card rises by a factor of 4, from Rs. 25,000 to Rs. 1,00,000, before any detection. That is a direct, material objection, hence strong. Only argument II is strong: option B. Beware of option E — a slogan about freedom feels persuasive, but a strong argument must engage with the reason behind the rule it attacks.

853. Argument I does the two things a strong argument should: it shows that the objective is already addressed by an existing sanction, and it identifies a definite cost of the new measure — court congestion — disproportionate to the conduct penalised. Relevant and weighty, so strong. Argument II promises complete elimination of black money. Unaccounted wealth is held and moved through gold, land, over-invoicing and shell entities, none of which is touched by a cash threshold, so the promised result does not follow from the measure. Absolute claims of this kind are the classic weak argument. Only argument I is strong: option A. Had II said 'it will make large unaccounted cash dealings riskier and push more transactions into the banking channel', it would have been defensible — the flaw is the word 'completely'.

854. Argument I gives a benefit to each side and both are genuine: convenience of access for the customer, and non-interest fee income for the bank, which unlike lending requires no additional capital to be set aside. It is strong. Argument II identifies a documented and specific harm — mis-selling driven by targets, exploiting the very trust that makes the bank a convenient distributor. It goes to the merit of the proposal, so it is strong as well. Both arguments are therefore strong. The listed options run 'only I', 'only II', 'either or', 'neither nor' and 'None of these'; since the correct description — both are strong — is not among the first four, the answer is E, None of these. Always check what option E actually says before marking it; here it is genuinely correct, but on most papers it is not.

855. Argument I traces a definite causal chain: inadequate capital, breach of the capital-adequacy norm, mandatory curtailment of lending, and harm to small-business borrowers. Each link is real under the prudential framework, so I is strong. Argument II does not dispute the need for capital; it attacks the recapitalisation-without-reform pattern and names the mechanism — moral hazard — by which repeated bail-outs make the next loss more likely. Substantive and relevant, so II is strong. Argument III asserts fiscal capacity with no figure and, more importantly, capacity to spend is not a reason to spend. The same argument would justify any expenditure whatsoever, which shows it carries no weight on this question. III is weak. Strong set is {I, II}, which is option A. Option D fails because III is weak; option E is wrong because the correct pair is expressly listed.

856. Argument I addresses the genuine constraint the proposal is meant to relieve — the banking system's need for capital — and adds a relevant competence, experience in managing large organisations. It is strong. Argument II is an appeal to tradition. That something has always been done a particular way is not a reason for continuing it; every reform violates some precedent. No consequence of the change is stated, so II is weak. Argument III names the specific, well-understood danger of corporate ownership: the owner becomes both lender and borrower, and such exposures can be concealed through layers of group entities until the bank fails. This is the central supervisory objection, hence strong. Strong set is {I, III}, option B. Notice that I and III are both strong although they oppose each other

— opposition never decides strength.

857. Argument I identifies an inequity that the proposal would directly remove — identical borrowers on identical terms paying different prices for a socially important loan. The stated ground is relevant and the remedy fits the defect, so I is strong. Argument II gives the counter-mechanism precisely: if price cannot vary with risk, quantity adjusts instead, and lenders respond by rejecting the riskier applicants. Since the very purpose of education loans is to reach students without means, the objection strikes at the proposal's own aim. II is strong. Argument III is factually wrong for the higher education that these loans finance — professional and postgraduate courses charge substantial fees, which is why the loans exist at all. An argument resting on a false premise cannot be strong. III is weak. Strong set is {I, II}, option D.

858. Argument I raises two real objections to removing human review: inherited bias reproduced at scale, and the loss of a reasoned, contestable decision for the applicant. Both bear directly on the proposal, so I is strong. Argument II is superficially appealing but shallow. Removing one channel of corruption does not establish that the model decides correctly, and the model's inputs, weights and override rules are themselves open to manipulation by insiders. The argument neither addresses accuracy nor fairness, so II is weak. Argument III is a bare generality: that computers work faster than people is true of every computerised process and could be urged in favour of automating anything whatever. It attaches to no feature of loan sanction, gives no figure, and above all offers mere administrative speed as an answer to an objection of fairness and due process. An argument that proves too much and does not engage the objection it is set against is weak. The strong set is therefore {I}, which option A states exactly. Option E is wrong precisely because the correct description is listed — always derive the set first, then look for it in the options, and mark 'None of these' only when it is genuinely absent.

859. Argument I rests on the distinguishing feature of the case — an officially declared drought, so the cause is external to the borrower — and states the consequence of inaction, a shift to informal moneylenders at far higher rates. Relevant and weighty, hence strong. Argument II identifies the two standard costs of a blanket waiver: the perverse incentive created for honest repayers, and the lasting damage to credit culture that makes banks reluctant to lend to the same districts in future. It attacks the 'all outstanding loans' feature specifically, so it is strong. Argument III is moralising. In a district where the crop has failed, telling the farmer he should have saved earlier neither answers the present distress nor recognises that small farmers in drought-prone areas often have no surplus to save. It offers no consequence and no remedy, so III is weak. Strong set is {I, II}, option C.

860. The proposal has a specific premise: that the app can substitute for the branch for the affected customers. The strongest argument against it must break that premise. Option B does exactly this. It shows, with a stated proportion, that a majority of the affected customers need services the app cannot deliver at all — life-certificate submission and cash handling. If the substitute cannot perform the function, the migration fails on its own terms. This is decisive, so B is the answer. Option A is a bare comparison with competitors; what others have chosen to do is not a reason, and their circumstances are unknown. Option C states a consequence the bank presumably intends — a cost saving — so far from opposing the proposal, it supports it. Option D notes only that the app is recent; age has no bearing on capability, and a well-built recent app serves as well as an old one. Option E is anecdotal — 'some' complaints exist about every application, with no indication of number, seriousness or whether the fault has since been fixed. The lesson: prefer the option that is specific, quantified and attacks the mechanism on which the proposal depends.

861. The evil the proposal targets is leakage in the delivery of subsidy. The strongest argument in favour must show that the proposed mechanism removes that evil. Option C does so directly: it names the defect of the existing system — diversion at intermediate layers — and shows why the substitute cures it, because a credit to a verified account creates an auditable trail from the treasury to the named beneficiary. It addresses the core purpose, so C is the answer. Option A is an appeal to foreign practice with no showing that conditions or results are comparable; such comparisons carry no weight by themselves. Option B cites administrative convenience, which is a side benefit to the government

rather than to the scheme's purpose, and would not by itself justify overhauling the delivery of subsidy to crores of people. Option D is trivial in relation to the issue — a few rupees of interest is negligible beside the leakage of the subsidy itself, and it says nothing about whether the subsidy reaches the right person. Option E cannot be right because a genuinely strong argument, C, is present in the list.

Subtopic 2.11.3

862. The advisory is issued *because* online frauds have risen, and the specific instruction is about the OTP. An instruction of this kind makes sense only if the OTP is the link through which a fraud can be committed. Hence conclusion I is the direct logical basis of the advisory and follows.
Conclusion II says *all* customers have already lost money. The statement speaks of a rise in frauds generally and of a precautionary advisory; a precaution is issued to prevent loss, not to confirm that every customer has suffered one. The word "all" is an over-generalisation with no support in the statement, so II does not follow.
Since exactly one conclusion follows, the answer is "Only conclusion I follows".

863. The notice itself states that the ATM and internet banking may be used as usual. ATM service and internet banking are banking services, so at least some services remain available. Conclusion I is therefore directly supported and follows.
Conclusion II claims that *no* banking will be possible. This is contradicted by the second sentence of the notice; only the branch counter is shut. A conclusion that contradicts the statement can never follow.
Hence only conclusion I follows. Note that I and II are contradictory, but the "either–or" option applies only when the statement leaves the choice open between two possibilities; here the statement settles the matter, so "either" is wrong.

864. The manager distinguishes two outcomes purely on the basis of a clock time: before 3 p.m. gives same-day clearing, after 3 p.m. gives next-working-day clearing. That is precisely the definition of a cut-off time, so conclusion II follows.
Conclusion I says such cheques are *never* sent for clearing. The statement says the opposite — they are sent, but on the next working day. So I is a misreading of the statement and does not follow.
Only conclusion II follows.

865. From 11 p.m. to midnight is 1 hour, and from midnight to 3 a.m. is 3 hours; total $1 + 3 = 4$ hours. So conclusion I is arithmetically forced by the statement and follows.
The window begins at 11 p.m. on Friday, which is part of Friday night, and during the window the application is not available. So conclusion II also follows.
Both conclusions restate information contained in or directly computable from the statement, without adding any new assumption. Hence both follow.

866. The statement presents exactly two alternatives joined by "either . . . or", and asserts that one of them will happen by December.
Taken alone, conclusion I does not follow, because the branch may instead be closed. Taken alone, conclusion II does not follow either, because the branch may instead be shifted. So neither is individually certain.
However, the two conclusions between them exhaust the possibilities stated, and they cannot both be true at the same time. This is exactly the situation in which the "either–or" option applies: one of the two is bound to be true. Hence either conclusion I or conclusion II follows.
"Both follow" is wrong because the two events are mutually exclusive; "neither follows" is wrong because the statement guarantees that one of them will occur.

867. The statement records a single fact: an amount, a place and a time of withdrawal.
Conclusion I fixes a balance figure of "more than Rs. 10,000". All that the withdrawal guarantees is that at least Rs. 5,000 was available; the balance could have been Rs. 5,000, Rs. 6,000 or anything else. The specific figure of Rs. 10,000 is invented, so I does not follow.
Conclusion II supplies a motive. The statement gives no reason whatsoever for the withdrawal; a

medical emergency is only one of countless possible purposes. So II does not follow.
Since neither conclusion is supported, the answer is "Neither conclusion I nor conclusion II follows".

868. One figure rose (+30% in app users) and the other fell (−12% in branch footfall) over the same quarter. "Moved in opposite directions" is simply a restatement of these two facts, so conclusion I follows.
Conclusion II confuses *branch footfall* with *total number of customers*. Footfall counts visits to branches; a customer who stops visiting the branch and starts using the app is still a customer. The statement gives no figure at all for the total customer base, so the 12% cannot be transferred to it. II does not follow.
Hence only conclusion I follows.

869. Conclusion I: the two percentages are computed within their own age groups, and $65\% > 18\%$. Comparing the *rate* of daily use across the two groups is exactly what the data permit, so I follows.
Conclusion II: the survey covers 1,200 people, but we are not told how many fall in each age band, and there is a third band (ages 35 to 55) about which nothing is said. If, say, only a few respondents are below 35 and most are in the middle band with a low usage rate, the overall figure could easily be below 50%. A group-wise percentage cannot be converted into an overall percentage without the group sizes, so II does not follow.
Conclusion III: the statement itself says 18% of the above-55 respondents use UPI daily, which means some of them certainly do use UPI. III contradicts the data and does not follow.
Hence only conclusion I follows.

870. Conclusion I: the directive itself lays down the penalty — non-updated accounts get marked inoperative. Since it is not guaranteed that every single holder will comply by 31 March, the guarded wording "may be marked inoperative" is exactly what the directive implies. I follows.
Conclusion II: re-KYC means collecting fresh identity and address details from the customer. A bank cannot update these records on its own; it must contact the account holders concerned. This is the necessary operational consequence of the directive, so II follows.
Conclusion III: the accounts become inoperative only *if* KYC is not updated, and only *after* 31 March. Describing them as already inoperative reverses the condition and the time order. III does not follow.
Hence only conclusions I and II follow.

871. The circular sets a single threshold of Rs. 2 lakh per day and attaches a different rule on each side of it.
Conclusion I: Rs. 3 lakh exceeds Rs. 2 lakh, so it falls on the restricted side, where the circular permits the deposit *only* at the account-holding branch. Any other branch is therefore ruled out, and I follows.
Conclusion II: Rs. 50,000 is within the limit of Rs. 2 lakh, and for such amounts the circular expressly allows deposit at any branch. An account-holding branch is not required, so II follows.
Conclusion III: the circular does not refuse large deposits; it only restricts *where* they may be made. Deposits above Rs. 2 lakh continue to be accepted at the account-holding branch. III converts a restriction on place into a refusal of the transaction, and so does not follow.
Hence only conclusions I and II follow.

872. The statement reports two simultaneous changes in opposite directions: a charge removed (minimum-balance penalty) and a charge raised (debit-card fee). Taken together, the natural reading is that the bank has traded one revenue stream for another. Option D says exactly this and adds nothing beyond the statement, so it is the correct inference.
Option A is far too strong — the bank has in fact just *raised* a fee, so it clearly still expects revenue.
Option B says "every customer". The statement does not tell us that all customers hold a debit card, nor that the revised fee applies uniformly to every category of account.
Option C claims salary accounts earlier had no charge of any kind; the statement mentions only the minimum-balance requirement and the card fee, and the card fee of Rs. 150 already existed. So this is contradicted.
Since a defensible inference exists, option E is wrong.

873. Let the original number of employees be n. Total business before $= 40n$ lakh. After five joined,

the strength is $n + 5$ and the total business is unchanged, so $32(n + 5) = 40n$.
Expanding: $32n + 160 = 40n \Rightarrow 8n = 160 \Rightarrow n = 20$. So the branch originally had 20 employees and conclusion I follows.
Total business $= 40 \times 20 = 800$ lakh, and as a check the new average gives $32 \times 25 = 800$ lakh, the same figure — consistent with the statement that the total did not change. So conclusion II also follows.
Both conclusions are forced by the data, hence both follow.

874. Write the two facts as sets. Fact 1: (files cleared by Nagpur last week) is wholly contained in (files verified by the credit officer). Fact 2: the sets (files verified by the credit officer) and (files rejected at the regional office) overlap.
Option A is only a rewording of Fact 1, so it follows.
Option B follows from Fact 2, since "some were rejected" guarantees at least one rejection.
Option D is again Fact 2 read from the other side, so it follows.
Option C asserts that *no* file cleared by Nagpur was verified by the credit officer. This directly contradicts Fact 1, which says every such file was verified. A statement that contradicts the given data can never follow; it definitely does not.
Since option C is available, option E is not needed. Hence the answer is option C.

875. Conclusion I: the Chairman reports a figure achieved "in three months". Such a figure can be reported only if the scheme has actually run for three months. So I follows.
Conclusion III: the comparison drawn is explicitly between the digital scheme and the bank's own physical product over comparable periods, and the digital one did better. Restricted, as the conclusion carefully is, to "this bank's experience", III follows.
Conclusion II: the Chairman compares the two products; a comparison with an existing product says nothing about its withdrawal. Indeed the phrase "ever managed" refers to past performance, not to closure. II does not follow.
Hence only conclusions I and III follow.

876. The claim rests on treating "fewer complaints received" as proof of "fewer frauds occurring". To weaken it, we need a reason why complaints could fall even if frauds did not.
Option C supplies exactly that: with the online portal shut, the easiest channel for lodging a complaint disappeared and customers were forced to use post. Many aggrieved customers would simply not bother, so the count of complaints *received* would drop for reasons unconnected with the AI system. This breaks the link between the evidence and the conclusion, and is therefore the strongest weakener.
Option A concerns only the manner of roll-out and does not touch the inference.
Option B tells us other banks did the same thing; it says nothing about whether Pallavi Bank's frauds fell.
Option D, if anything, strengthens the claim: more transactions with fewer complaints suggests a genuine improvement.
Option E addresses cost, not effectiveness; an expensive system can still work well.
Hence option C.

877. The argument has two limbs: (i) small-town branches are not viable, and (ii) business correspondents are a better substitute. A strengthener must support both.
Option D does precisely this. Costs exceeding income for the average small-town branch establishes limb (i) with actual performance data, and the surplus recorded by business correspondents in the *same* towns establishes limb (ii) with a like-for-like comparison. That is the strongest possible support.
Option A merely describes how correspondents are remunerated; a per-transaction commission could be cheap or expensive, so it settles nothing and can even cut against the argument in high-volume towns.
Option B weakens the argument, since customer preference favours retaining branches.
Option C gives the scale of the network but no information on profitability, so it is neutral.
As a genuine strengthener exists, option E is wrong. Hence option D.

878. An assumption is something the decision-maker must be taking for granted for the decision to make sense.

I: the stated purpose is "to reduce long queues". A bank does not spend on machines to solve a problem it does not believe exists, so the existence of a queue problem serious enough to act upon is taken for granted. I is implicit.
II: the bank has chosen *this particular* device as the remedy. That choice presupposes a belief that token machines actually help manage waiting customers; otherwise the decision would be pointless. II is implicit.
III: the decision covers urban branches, but confining a measure to one set of branches does not assert anything about the other set. Rural branches may have queues that are being dealt with differently, or may be scheduled for a later phase. Nothing forces the bank to assume rural branches have *no* queues. III is not implicit.
Hence only I and II are implicit.

879. Let R = banks with a rise in gross NPA, F = banks with a fall in net profit, D = banks that cut the dividend.
The report gives: (a) R is entirely contained in F; (b) some members of F are outside D.
Conclusion III is statement (b) read in reverse order — "some non-D banks are in F" is the same fact as "some F banks are not in D". A "some ... not" relation is symmetric in this sense, so III follows.
Conclusion I claims some R banks are outside D. The banks referred to in (b) are members of F, and F is the larger set; those particular banks need not lie in the sub-portion R. It is entirely consistent with (a) and (b) that every bank in R cut its dividend while the non-cutters lie in the part of F outside R. So I is possible but not certain, and does not follow.
Conclusion II reverses the containment in (a) and adds D into the bargain; nothing in the report constrains dividend-cutting banks to belong to R. II does not follow.
Hence only conclusion III follows.

880. The outstanding book at any date = previous outstanding + fresh disbursements − repayments, prepayments and balance transfers out. Fresh disbursements rose, so the only way the closing figure can be *lower* is if the outflow side exceeded the inflow side.
Option D names exactly that outflow: prepayments and transfers to other lenders remove existing loans from the book wholesale, and if they exceed the fresh Rs. disbursed, the book shrinks despite 18% growth in disbursement. This resolves the discrepancy.
Option A explains why disbursements might have grown, but a rate cut does not by itself shrink the outstanding book — it would tend to expand it.
Option B likewise points towards growth, not contraction.
Option C concerns applications received, which affects the inflow side only, and again in the upward direction.
Since a valid explanation is present among the options, E is wrong. Hence option D.

881. The study contains two results that must be read together. A single well-timed reminder cut defaults appreciably; a daily barrage produced no improvement over silence. The variable that differs between the two arms is not the presence of a reminder — both arms received one — but its frequency. The only conclusion that accounts for both results is that frequency, not mere presence, drives the effect. That is option D.
Option A is contradicted by the first result, where reminders reduced defaults by 22%.
Option B overstates the second result: the daily-reminder group defaulted at about the *same* rate as the no-reminder group, not a higher one, so daily messages failed to help rather than caused harm.
Option C invents a mechanism about reading habits that the study never measured.
Option E recommends the very schedule the study found ineffective, so it is the opposite of what the data support.
Hence option D.

882. The words "only if" make the two requirements *necessary* conditions, not sufficient ones. Meeting them does not guarantee a locker; failing either of them guarantees no locker.
Conclusion II: Prakash's account is one year old, which fails the two-year requirement. A necessary condition that is not met rules him out, whatever his deposits may be. II follows.
Conclusion I: Shalini clears the tenure test, but nothing is said about her fixed deposit, and in any

case "only if" does not promise allotment even to a fully qualified applicant (lockers may be limited). The word "certainly" makes I unsupported on two counts, so it does not follow.
Conclusion III: this treats the deposit condition alone as sufficient, dropping the tenure condition entirely and converting a necessary condition into a sufficient one. III does not follow.
Hence only conclusion II follows.

Subtopic 2.11.4

883. A course of action follows only if it is practicable and it actually reduces the problem.
The problem here is a predictable seasonal peak: the rush occurs on known days because salaries and pensions are credited then. Course I matches capacity to that known peak by putting more staff on the counters exactly when the load is highest. It is feasible, temporary and it directly shortens the queue, so I follows.
Course II removes the service instead of the delay. Cash withdrawal is the very facility the customers have come for, and refusing it on the days they most need it converts a delay into a denial of service. An action that harms the affected persons more than the original problem is never an appropriate course of action, so II does not follow.
Hence only I follows.

884. The complaint has two aspects: the customers lack the skill to use the app, and meanwhile they still need the information.
Course I attacks the cause. Training senior citizens to use the application removes the very inability complained of, and a branch-level session is an easily arranged, low-cost step. So I follows.
Course II attacks the immediate need. Until the training takes effect — and for those who will never be comfortable with a smartphone — a passbook or a counter enquiry gives them the same information through a channel they already know. So II follows.
Note that the two are not alternatives: I is a long-term remedy and II is the interim arrangement, and adopting one does not make the other unnecessary. Therefore this is not an "either–or" case. Both I and II follow.

885. Compare the two figures given: 40 per cent at one branch against 6 per cent for the bank as a whole. The problem is therefore located at Nagpur, not in education lending as a product.
Course I applies a bank-wide ban because of one branch's performance. It punishes branches that are lending soundly, stops a socially important and otherwise healthy line of business, and still leaves the Nagpur defect undiagnosed. A remedy far wider than the problem is not an appropriate course of action, so I does not follow.
Course II is the standard first administrative step when one unit deviates sharply from the norm: find out whether the cause is poor appraisal, weak follow-up or something else. The review is targeted, feasible, and its findings will determine what correction is needed. So II follows.
Hence only II follows.

886. A price rise of this kind reflects a gap between supply and demand, so an appropriate action must either increase supply or protect consumers.
Course I would ban cultivation. That cuts supply still further and would push the price higher, not lower — the action works in the direction opposite to the one required. It also destroys the livelihood of growers. So I does not follow.
Course II asks the public to stop buying all vegetables. It is not an administrative action at all, it is impossible to enforce, it extends to vegetables whose prices have not risen, and it deprives people of food rather than making onions cheaper. So II does not follow.
Appropriate steps would have been releasing buffer stocks or curbing hoarding, but neither is offered.
Hence neither I nor II follows.

887. Identify precisely where the failure occurred. The cheque books were stolen *in transit*, that is, the weak link is the mode of delivery, not the instrument itself.
Course I closes exactly that gap: tracked delivery fixes accountability for every despatch, and counter delivery against identification ensures the book reaches the account holder alone. It is practicable and

directly prevents a repetition. So I follows.
Course II withdraws the cheque facility from an entire region because of a delivery failure. Honest customers lose a service they are entitled to, and the unsafe despatch practice remains unchanged for every other region. The action is disproportionate and misdirected, so II does not follow.
Hence only I follows.

888. The obstruction will last about a month, so simply waiting would leave customers without banking for that period.
Course I restores service by moving the operations to a reachable place for the limited period of the disruption. It is a recognised and practicable step, so I follows.
Course II makes the first step effective. A relocation that customers do not know about is of no use to them; SMS reaches them where they are and the notice serves anyone who still comes to the old premises. So II follows.
The two are complementary, not alternative — shifting without informing would fail, and informing without shifting gives customers nothing to go to. Both I and II follow.

889. The problem is that from next month the branch will have no premises to occupy. Any action that lawfully gives it premises solves that problem completely.
For an "either–or" answer each course must, on the facts stated, be independently practicable and independently sufficient. Test both.
Course I keeps the branch exactly where it is by converting the bank from tenant to owner. Its practicability is not left to assumption: the statement records that the owner is willing to sell, so the transaction depends only on a price being agreed. It is a workable solution by itself.
Course II gives the branch fresh premises, and in the same locality, so the existing customers are not put to inconvenience. This too is a workable solution by itself.
Now note that the two cannot both be carried out: if the building is purchased there is nothing to shift, and if the branch shifts elsewhere there is no reason to buy. They are mutually exclusive, and adopting either one makes the other unnecessary. That is precisely the "either–or" situation. Hence either I or II follows.

890. There are two distinct things to be dealt with: the machines are failing, and customers are meanwhile out of pocket.
Course I addresses the cause. A dispenser that debits without paying out is a technical defect, and a technical audit of the affected machines is the way to locate and rectify it. So I follows.
Course II addresses the consequence. Even after the machines are fixed, the 180 affected customers must get their money back, and prompt auto-reversal within the prescribed timeline is the standard remedy. So II follows.
Course III shuts every ATM in the state because some machines at one branch are faulty. That withdraws a service from lakhs of customers who have no complaint, and it does not repay a single rupee to those who do. It is grossly disproportionate, so III does not follow.
Hence only I and II follow.

891. Work through the arithmetic of the manpower gap. Nearly half the department will leave in three years, and because there has been no recruitment for six years there is no cadre in the pipeline behind them. The gap is therefore both in *numbers* and in *skill*.
Course I fills the numbers. Recruitment must begin now because selection, joining and training themselves consume a good part of the three years available. So I follows.
Course II fills the skill. SME credit appraisal is learnt on the job, and a structured programme transfers that expertise to junior officers before the experienced ones leave. So II follows.
Course III abolishes the department. The statement reports a staffing problem, not that the business is unprofitable or unwanted; giving up a whole line of business because of a manpower gap that can be closed is an over-reaction. So III does not follow.
Hence only I and II follow.

892. This is an established fraud by an employee, so the action chosen must protect the bank's records, meet its reporting obligations and establish the full extent of the loss.

Option B does all three: suspension removes the employee from a position where he could tamper with records or repeat the act, reporting discharges the bank's obligation towards the competent authority and the regulator, and the investigation determines whether other accounts or persons are involved. It is therefore the most appropriate immediate step.
Option A suppresses a fraud in return for restitution; the loss is only one part of the matter, and concealment is itself a serious lapse.
Option C moves the problem to another branch and gives the employee fresh customers to defraud; it neither investigates nor reports.
Option D punishes the account holders, whose only fault is that their accounts were dormant, and it does nothing about the person who committed the fraud.
Since a clearly appropriate option is present, "None of these" is not the answer. Hence option B.

893. The danger here is a run on the bank, and a run is driven by what depositors *believe*. So test each action by asking what it would make depositors believe.
Course I closes the branches. To a depositor already told that the bank is failing, shut doors are the proof of it. The queues would not disperse; the panic would spread and the depositors would be denied access to their own money in the bargain. So I does not follow.
Course II refuses fresh deposits. A bank that will not take money is a bank that appears unable to honour it, so this too confirms the rumour, and it cuts off the very inflow of funds that would help meet the withdrawals. So II does not follow.
The correct response — an immediate public clarification of the bank's financial position, supported by the regulator, along with normal payment of every withdrawal demanded — is not among the courses given. Hence neither I nor II follows.

894. Note the key word "solely". These applicants were not found ineligible; they lost their loans to a paperwork gap. So any step that closes that gap is appropriate, and the gap can be closed at three different points in time.
Course I acts *before* the application is made: a checklist tells the applicant what to bring, so the papers are complete at the outset. It follows.
Course II acts *at the counter*: a completeness check when the form is handed in catches the omission while the applicant is still present and can be told at once. It follows.
Course III acts *after* receipt: naming the missing document by SMS lets the applicant supply it instead of the file being rejected. It follows.
None of the three is impractical or excessive, and none makes another redundant — they cover successive stages. Hence all three follow.

895. The scheme itself is beneficial — direct credit removes leakage in subsidy payments. The survey reveals not a defect in the scheme but a gap in readiness, and the question is whether that gap can be closed in the time available.
Course II closes it. Opening accounts is a routine, quickly organised operation, camps take banking to the beneficiary's own village, and there is a full quarter in which to complete the work. It is feasible and it removes the only obstacle identified, so II follows.
Course I abandons the reform instead. It withholds the benefit from the 70 per cent who are already ready, its condition ("every beneficiary in the country") is open-ended, and — decisively — withdrawing the announcement removes the very deadline that is prompting the accounts to be opened. Postponing a good measure because of an obstacle that can be cleared in time is not an appropriate course of action, so I does not follow.
Hence only II follows.

896. The two figures given — a 12 minute hold and 35 per cent abandonment — describe a single defect: the number of agents is too small for the number of calls. An appropriate action must therefore raise capacity or manage the waiting.
Course III does both. More agents at the hours when the calls actually arrive cuts the hold time, and a call-back facility frees the caller from waiting on the line, so fewer calls are abandoned. It follows.
Course I diverts the callers to branches. The customer's difficulty is not solved but shifted — and made worse, since a journey to the branch costs far more of his time than the call did — while the

queues merely move to the counters. It does not follow.
Course II reduces the services offered on the phone. That deliberately withdraws facilities from customers in order to improve the bank's own waiting statistics; the customers who wanted those services are simply left without them. It does not follow.
Hence only III follows.

897. The study establishes that high growth and high complaints occur together at the same branches. It does not by itself establish *why*, and the appropriate courses of action are those that respect this distinction.
Course III is the natural first step: it asks whether the way the deposits were canvassed is what generated the complaints, and until that is examined the bank is only guessing at the cause. It follows.
Course II does not depend on the outcome of that enquiry. Whatever the enquiry finds, an appraisal that rewards business alone gives a branch manager no reason to weigh service against volume; measuring both restores the balance and is sound practice in any case. It follows.
Course I abolishes deposit targets entirely. Deposits are the raw material of a bank's lending, so a bank cannot stop pursuing them; and the finding points to the *manner* of selling, not to the existence of a target. Removing the target destroys the business to cure a defect in how it is conducted. It does not follow.
Hence only II and III follow.

898. The question asks specifically for a *course of action* — a step to be taken — so each item must first be tested for that, and only then for appropriateness.
Item I states what the present position is: that customers cannot tell a genuine message from a fake one. It is an inference drawn from the finding, not something the bank is to do; no action of any kind is proposed in it. It therefore fails at the first test and is not a course of action at all.
Item II proposes definite action, and the action fits the finding exactly. The fraud works because a fake message passes for a real one; a single registered sender identity gives customers a reliable mark of authenticity, and the standing instruction that the bank never sends a KYC link makes any such SMS self-evidently fraudulent. It is appropriate.
Item III proposes action but the wrong one. Periodic KYC updation is a regulatory requirement the bank cannot abandon at will, and in any case the fraudsters are not sending real KYC notices — they are sending fake ones. Removing the genuine requirement would leave them free to send exactly the same fake messages. It is not appropriate.
Hence only II.

899. The statement is constructed so that the cause can be isolated. Both banks operate in the same city, so the market is the same; both quote the same rate and the same fee, so price is the same. Everything that could explain the difference has been held equal except one variable — 5 working days against 21. That difference is therefore the cause of the loss of business, and the appropriate action is the one that removes it.
Option B removes exactly that: shortening the sanction time restores parity on the only dimension on which the bank is behind. It is the most appropriate course of action.
Option A cuts the rate, sacrificing margin on every home loan to compensate for a defect that costs nothing to fix; and a borrower who has already been kept waiting three weeks may well go elsewhere despite the lower rate.
Option C abandons a market in which a competitor is growing by 15 per cent — the business is clearly there for a bank that can deliver.
Option D spends more on attracting applicants into a process that is losing them; more advertising with a 21 day turnaround produces more disappointed applicants, not more loans.
Since B is clearly appropriate, "None of these" is not the answer. Hence option B.

900. First fix the nature of the default. Recovery is 91 per cent elsewhere in the same bank, under the same officers and the same procedures, and falls to 38 per cent only in the district that has been officially declared drought-affected. The default is therefore caused by crop failure, not by unwillingness to pay.
Course III is the remedy designed for precisely this situation. The regulator's calamity guidelines allow

the repayment to be rescheduled to the years in which the farmer will again have a crop, so the bank keeps the asset alive and recovers over a longer period. It follows.
Course I applies coercion to farmers who have no income this season. It cannot produce money that does not exist, it is inappropriate where the default is not wilful, and it destroys the borrower's capacity to repay later. It does not follow.
Course II stops fresh lending. But it is fresh crop finance that will let the farmer sow the next season, earn, and repay the old dues; withholding it guarantees that the 38 per cent will fall further. The action worsens the very figure it responds to. It does not follow.
Hence only III follows.

901. The ratio is a fraction: cost divided by income. It has worsened because the numerator rose while the denominator stood still, so a complete remedy must work on both — and the statement tells the board only the *total* of expenses has risen, not which expenses.
Option D therefore fits. The line-item analysis identifies where the increase actually lies, which is the necessary preliminary to cutting anything, and the income plan lifts the denominator, which no amount of cost-cutting alone can do. It is the most appropriate course.
Option A cuts staff by a figure fixed in advance, without knowing whether staff cost is even the item that rose; and a bank stripped of a fifth of its people cannot generate the income that is already flat.
Option B closes every below-average branch — but by definition roughly half of any set lies below its own average, and once the weakest are shut the average rises again, so the rule would consume the branch network without end.
Option C raises the income, but by charging the depositors whose balances fund the bank's lending; a sharp across-the-board rise invites them to move their accounts, and losing deposits would reduce income further.
Since D is clearly appropriate, "None of these" is not the answer. Hence option D.

902. The decisive facts are the two periods given: 4 months until the licence lapses, and about 9 months to migrate. Since $9 > 4$, no migration begun today can be completed before the licence expires, and a bank cannot operate for the intervening 5 months without a core banking system.
Course I ignores this arithmetic. It promises a switch-over "before the licence expires", which the nine-month estimate makes impossible, and terminating the present contract at once would leave the bank with no system at all. It does not follow.
Course III proposes manual operation in that gap. For a modern bank this is not an option — ledgers, clearing, ATMs, internet banking and regulatory reporting all run on the system, and no bank of any size can be run on paper for months. It does not follow.
Course II is the only course that respects both constraints. The extension covers the five-month shortfall, so operations are never interrupted, and starting the migration at the same time ensures the bank is not left dependent on this vendor when the extension runs out — which is also what strengthens its hand in the fee negotiation. It follows.
Hence only II follows.

903. Read the last sentence carefully. What the inspection has found is a defect in the *system of control* — one person performing every stage of a transaction with nobody to check him. It has not found that this officer has done anything wrong; no irregularity in any loan has been established.
Course I dismisses him all the same. A punishment cannot precede the misconduct: no charge has been framed, no enquiry held and no wrongdoing proved. Moreover, dismissing the individual leaves the arrangement untouched — whoever succeeds him would occupy the same unchecked position. It does not follow.
Course II stops personal lending at the branch. The borrowers of Kanpur are denied a facility because of the bank's own internal arrangement, and once again the defect itself survives: the same officer would continue to hold the same combination of powers over every other product he handles. It does not follow.
The action the finding calls for is the segregation of these duties — separating the officer who creates the customer identity from the one who sanctions and from the one who authorises disbursement, so that every transaction passes a second pair of eyes. That course is not among the two given. Hence

none of these.

Subtopic 2.11.5

904. Fix the direction of the link, then check the chronology.
The repo rate is the rate at which the RBI lends short-term funds to commercial banks. When it falls, the banks' own cost of funds falls, so they can afford to lend to home loan borrowers at a lower rate. So a repo cut is exactly the kind of event that produces a lending rate cut.
Chronology confirms it: the RBI acted in April, the banks acted in May. A cause must come first, so II cannot be the cause of I, which rules out option B. Individual banks' lending rates also have no power to change the RBI's policy rate.
They are not independent causes and not effects of independent causes, because a clear one-way link exists between them. They are not effects of a common cause either, since I is itself the trigger for II rather than a parallel outcome.
Hence statement I is the cause and statement II is its effect.

905. Ask which event has the power to bring about the other.
A declaration of a public holiday by the State Government is binding under the Negotiable Instruments Act, and on such a day banks in that State do not transact business. So the declaration is capable of shutting the branches.
The reverse is impossible: banks staying shut cannot make a Government declare a holiday, and in any case the declaration was made in view of a cyclone warning, not in view of bank closures. So option A is wrong.
Since a definite one-way link exists, they are neither independent causes nor effects of independent causes. The cyclone is behind the holiday, but the closure follows from the holiday order rather than standing beside it, so a common-cause reading is weaker than the direct link.
Hence statement II is the cause and statement I is its effect.

906. Test each direction first.
Schools closing cannot shut down bank branches, and banks closing cannot shut down schools. The two sets of institutions are administratively unconnected, so options A and B both fail.
But the coincidence is too exact to be accidental: the same district, the same single day, and in both cases a total closure. That points to one external event affecting the whole district, typically an order of the district administration after heavy rain or flooding, or a district-wide bandh.
Because that single event produces both closures, they are parallel outcomes, not causes. So option C is wrong, and option D is wrong because the causes are not independent – there is one cause, not two.
Hence both statements are effects of a common cause.

907. A possible cause must be an event that already happened and that would push customers towards the machine.
Option A does exactly that. If half the manual counters are shut, the customers who used them must deposit cash somewhere, and the machine is the obvious substitute. That fully accounts for the doubling, so A is a valid cause.
Option B is an effect, not a cause. Queues at the machine appear because usage has risen; complaints follow the rise, they do not create it.
Option C refers to a different branch and to next year, so it cannot influence the behaviour of Nashik customers over the past two months.
Option D concerns the bank's overall deposit figure. A fall in total deposits would, if anything, suggest less depositing activity, so it cannot explain a doubling of machine use.
Since A is a genuine cause, option E is not required. Hence the answer is A.

908. A possible effect must be a consequence that can follow the directive in time.
Option C qualifies. Opening a large number of rural branches at short notice needs trained staff, and the only immediate pool available is the existing urban workforce. Redeployment is therefore a natural downstream consequence of the order, and the words 'may' and 'in the coming months' place it correctly in the future.

Option A is the reason the RBI issued the direction in the first place, so it is a cause, not an effect.
Option B describes an earlier RBI measure. Anything that happened before the directive cannot be its effect.
Option D is a long-running social trend that has been going on for a decade, quite independent of a directive issued now.
Since C is a sound effect, option E is not needed. Hence the answer is C.

909. Look for the motive that links the two events.
Savings account holders compare the interest offered by different banks. If one bank offers 8% while others offer less, depositors have a direct monetary reason to shift to it. So the announcement is capable of producing a rush of new accounts.
The reverse direction fails. The bank fixed and announced the rate before the accounts were opened, so the later inflow cannot have caused the earlier announcement; option B is out. Note also that a bank flooded with deposits would have less reason, not more, to raise its rate.
They are not two separate causes, and they are not parallel outcomes of some third event, because the announcement itself explains the inflow. So options C, D and E all fail.
Hence statement I is the cause and statement II is its effect.

910. Do not be misled by the order in which the statements are printed; judge by the order in which the events happened.
Statement II describes a problem that ran for a whole year. Statement I describes an action taken last month. So II is the earlier event and I is the later one.
A generator set is bought precisely to keep computers and counters running when the mains supply fails. So a year of disruptive power cuts is a sufficient reason for the branch to install one.
The reverse is impossible: installing a generator cannot create power cuts, nor can it create power cuts that had already been occurring for a year. Option A is therefore wrong.
Because one clearly produced the other, they are not independent causes and not parallel effects of some third event.
Hence statement II is the cause and statement I is its effect.

911. This item is designed to tempt you into reversing the arrow, so work through it carefully.
Step 1 – the plausible reverse link. A government sometimes announces a waiver because farmers are already unable to repay. If that were the situation here, II would be the cause and I the effect.
Step 2 – test it against the wording. Statement II says the fall in recovery occurred *in the quarter following the announcement*. The fall is therefore later than the announcement, and a later event cannot cause an earlier one. Option B is ruled out.
Step 3 – confirm the forward link. Once a waiver up to Rs. 1,00,000 is announced, a borrower whose dues are within that limit gains by waiting instead of paying, since paying now forfeits the benefit. Even borrowers not covered by the scheme tend to hold back hoping it will be extended. Recovery therefore falls immediately after such an announcement.
Options C, D and E fail because the announcement itself explains the fall; no third event and no pair of separate causes is needed.
Hence statement I is the cause and statement II is its effect.

912. Test the two directions before hunting for a third factor.
A cut in airline fares does not reduce what the Government pays out as fuel subsidy; the subsidy bill is settled with the oil marketing companies on subsidised fuels sold to households, and airlines buy turbine fuel at market rates. So I cannot cause II, and option A fails. Equally, a lower subsidy outgo is a fiscal saving for the Government; it puts no money into airline accounts and gives no airline a reason to cut fares, so option B fails as well.
Now ask what the two have in common. Fuel is the largest single input in an airline's cost sheet, and the size of the subsidy bill is the gap between the market price of fuel and the price at which it is sold to consumers. Both quantities move with one and the same variable: the international price of crude oil. A steep fall in crude prices lowers airline operating costs, letting carriers pass on part of the saving as cheaper fares, and simultaneously narrows the gap the Government has to fund, shrinking the subsidy bill.

Option C is wrong because neither statement is acting on anything here; each is an outcome. Option D would need two unrelated causes, but a single fall in crude prices accounts for both facts and, crucially, explains why they showed up in the very same month – something two independent causes would leave as a coincidence.
Hence both statements are effects of a common cause.

913. Same month, two rises – but sharing a month is not sharing a cause.
Direction test: highway accidents cannot make people open fixed deposits, and money moving into fixed deposits cannot make vehicles collide. Options A and B are out.
Now look for the separate reasons. December accidents on a highway are typically explained by dense winter fog and very poor visibility in the early hours. December deposit growth is explained by an altogether different set of facts: the financial year is three-quarters over, so taxpayers are placing money in tax-saving deposits, and many employers pay annual bonus around this time.
So there are two distinct causes – winter weather and year-end financial behaviour – and no single event produces both. That rules out option E, which needs one shared cause. Option C is wrong because neither statement is itself causing anything; each is a result.
Hence both statements are effects of independent causes.

914. The claim is that a particular cause (the app) produced a particular effect (the 30% rise). The strongest way to attack such a claim is to show that the effect appeared even where the supposed cause was absent.
Option C is exactly that control comparison. Kanpur had no app at all, yet its transactions rose by 31%, slightly more than Indore's 30%. So whatever lifted transactions was operating across regions – a festive quarter, a bank-wide fee waiver, general growth in digital payments – and Indore's rise needs no reference to the app. The claim collapses.
Option A supports the app rather than weakening the claim; a good rating suggests people liked using it.
Option B concerns cost, which says nothing about whether the app changed customer behaviour. An expensive app may still be effective or ineffective.
Option D is a statement about future plans and has no bearing on what caused last quarter's rise.
Since C weakens the claim decisively, option E is not required. Hence the answer is C.

915. The weakness of the original finding is selection: if banks picked the districts, the camps and the account openings may both reflect how banking-minded a district already was. To strengthen the causal reading you must remove that alternative explanation.
Option A does it in the cleanest possible way. Because the districts were selected at random, the camp districts and the non-camp districts cannot differ systematically in prior eagerness; randomisation makes the two groups comparable at the start. The camp districts then rose by 22% against 3%. With the selection explanation removed, the camps are left as the cause.
Option B says the opposite. It states that banks pick already-eager districts, which supplies precisely the alternative explanation and therefore weakens the conclusion.
Option C is a detail of scheduling. It may explain why attendance was good, but it offers no evidence that attendance translated into new accounts.
Option D is a nationwide trend affecting camp and non-camp districts alike, so it cannot explain the difference between them.
Hence the answer is A.

916. Work through the options one at a time, asking of each: did this happen *before* the decision and could it have prompted the decision?
Option A is the benefit customers get once the branch opens on Sundays. It follows the decision, so it is an effect.
Option B is the union's reaction to the decision. A reaction is necessarily later than what it reacts to, so it too is an effect.
Option C is a cost the bank will incur as a consequence of the new working arrangement. Again an effect, and in fact a cost of this kind is a reason *against* the decision, never a reason for it.
Option D is a possible response by rival banks to the decision, so it is a further effect.

Every listed option is an effect; not one of them is a prior circumstance. A genuine cause would have been something such as unmanageable weekday crowding at the Vashi counters or the loss of customers to rivals already open on Sundays – and no such item appears.
Hence the correct answer is E, None of these.

917. The printed order is the trap here; sort the events by what drives what.
A branch carries rent, electricity, security, staff salaries and maintenance. Shutting 12 branches removes all of those items from the books, so branch closure is directly capable of cutting operating expenditure.
Now test the reverse. Could a 7% fall in expenditure cause the bank to close branches? No. A bank that has already reduced its costs has less pressure to shut branches, not more. If anything, it is rising costs and continuing losses that force closures. So option A fails.
Because one statement plainly produces the other, they are neither independent causes (option C) nor parallel outcomes of two separate causes (option D). Option E fails too: a cost-cutting drive may lie in the background, but the expenditure fell *through* the closures rather than beside them, so the direct link is the correct reading.
Hence statement II is the cause and statement I is its effect.

918. Identify which statement can generate the other two, and check that the timings fit.
Statement I is the longest-running event – eight months of unpaid dues – and it is the one with real generating power. Unpaid growers lose their expected income, and two consequences follow naturally. First, having failed to get paid, they agitate: hence the highway blockade in II. Second, they still need money for household needs and for the next crop, and the quickest credit available to a rural household is a loan against gold ornaments: hence the 40% jump in III.
Test option B. A two-day blockade last week cannot cause eight months of non-payment that began long before it, so II cannot be the cause of I.
Test option C. A rise in gold loan applications cannot make sugar mills withhold payment; the causal arrow runs the other way.
Test option D. It treats I and II as two separate, unconnected causes. But they are not independent at all – the blockade in II is itself a direct consequence of the non-payment in I, so they cannot stand as parallel causes.
Since option A holds, option E is not needed. Hence the answer is A.

919. The bank has observed an association and read it as cause and effect running from card to deposits. Attack the direction of the arrow.
Option D reveals that the arrow runs the other way. A large deposit is the qualifying condition for getting the card, so card holders have big deposits because they were already big depositors – the deposits came first and produced the card, not the reverse. The four-fold gap is therefore built into the eligibility rule and reflects nothing about the card's power to attract money. It also destroys the plan directly: the bank cannot issue the card to many more customers, because only those who already hold large deposits qualify.
Option A mentions a fee. A fee might discourage some customers, but it leaves the claimed deposit link untouched.
Option B describes how some holders use the card. Usage pattern says nothing about why card holders hold larger deposits.
Option C reports overall deposit growth without separating card holders from others, so it neither supports nor undermines the specific claim.
Hence the answer is D.

920. This needs one piece of banking knowledge: a provision against bad loans is not a transfer of funds, it is an expense charged to the profit and loss account.
So an extra provision of Rs. 450 crore is deducted before the profit figure is arrived at. Making that provision in the second quarter therefore pushes the second quarter's profit down mechanically. Statement II is capable of producing statement I.
Test the reverse. Could an 18% fall in profit cause the bank to provide Rs. 450 crore? No. Provisioning is governed by the RBI's asset classification norms and depends on which loan accounts have turned bad, not on how the profit figure looks. The profit is the output of the calculation, and an output

cannot determine one of its own inputs. Option A fails.
Option E is the attractive wrong answer: one may argue that a slump in the economy caused both. But even so, the slump would reach the profit line only *through* the provisioning entry, so the direct accounting link between II and I remains the correct description. Options C and D fail for the same reason – the two figures are not parallel outcomes; one is computed after subtracting the other.
Hence statement II is the cause and statement I is its effect.

921. The puzzle is that supply went up while usage went down. An explanation must supply a force that cut the *demand* for ATM cash, and cut it hard enough to outweigh the extra convenience of 25% more machines.
Option C provides exactly such a force. If most customers in the city moved to UPI, they pay shopkeepers, autos and utilities directly from their accounts and simply need less currency. Fewer cash needs means fewer withdrawals, however many machines are standing ready. This resolves the contradiction completely.
Option A reports what the expansion cost. Expenditure by the bank has no effect on how often customers withdraw cash.
Option B, free withdrawals, would encourage more withdrawals, not fewer, so it deepens the puzzle instead of explaining it.
Option D says the new machines went to the outskirts. That could explain why the new machines are lightly used, but it cannot explain a fall in the city's total withdrawals, since the older, well-sited machines remain in place and customers can still use them. A badly placed addition leaves the total flat at worst; it does not pull it down by 12%.
Since C works, option E is not needed. Hence the answer is C.

922. To support a causal claim you must do two things: show that the effect did not appear where the cause was absent, and close off rival explanations where it was present.
Option C does both. The unchanged error rate at camera-free branches supplies the control group and shows the improvement was not a bank-wide trend. The second half rules out the obvious rivals – a revised cash-handling procedure or fresh staffing – so nothing but the cameras distinguishes the 50 branches. The cameras are left as the explanation.
Option A does the opposite. If errors fell equally at branches without cameras, the fall was general and the cameras explain nothing; this is a strong weakener.
Option B also weakens. Branches picked for having the highest error rates tend to record lower figures the following year simply because an extreme reading drifts back towards the average, so the fall may be this statistical drift rather than the cameras.
Option D reports cost, which bears on whether the step was worth taking, not on whether it worked.
Hence the answer is C.

923. An assumption is an unstated premise the argument needs in order to stand. Test each option by denying it and seeing whether the argument survives.
Deny option D: suppose some other factor capable of cutting defaults did change in the same period – say borrowers' incomes rose, or the bank tightened its lending standards, or it began deducting EMIs automatically from salary accounts. Then that factor, not the SMS, could account for the drop from 6% to 4%, and the conclusion falls. The argument therefore needs D, so D is an assumption.
Option A is far too strong. The argument does not need *every* borrower to own a phone; reminders reaching most borrowers would still explain a two-percentage-point fall. Denying it does not destroy the argument, so it is not a required assumption.
Option B compares costs. Whether SMS is cheaper than calling is a question of economy and has no bearing on whether SMS caused the fall.
Option C is a prediction about the future. The argument explains a fall that has already occurred, and it stands or falls regardless of what happens next year.
Hence the answer is D.

924. Fix the sequence first: the announcement came on Sunday, the fall came on Monday. So II is earlier and only II can be the cause. Option A is eliminated at once.
Now confirm that the link makes sense. Issuing new shares to the Government increases the total

number of shares of each bank. The existing shareholders' stake in the same company is thereby spread over more shares, so the value attaching to each old share is diluted, and the concessional price makes the dilution sharper. Investors sell in anticipation, and the price falls on the very next trading day.
The one-day gap between the two events, and the fact that only public sector bank shares were affected, both point to the announcement rather than to any general market event. That is what rules out option E – a common cause such as a broad market crash would have dragged down other sectors too, and it would not explain the precise Sunday-to-Monday timing.
Options C and D fail because the two statements are not parallel items: one is a policy announcement and the other is the market's response to it.
Hence statement II is the cause and statement I is its effect.

Subtopic 2.11.6

925. Conclusion I merely restates a fact given in the passage: June (2 crore) is greater than May (1.5 crore). A conclusion that is directly supported by the stated data does follow. Conclusion II inserts the word 'only'. The passage says the bank *attributes* the rise to the new facility; an attribution by an interested party is not proof, and even if accepted it does not rule out other contributing causes such as seasonal spending or a larger customer base. Since I follows and II does not, the answer is 'Only conclusion I follows'.

926. The word 'only' makes five years of continuous service a *necessary* condition for eligibility. Ramesh has three years, so he fails the necessary condition and is not eligible now. Hence Conclusion II follows. Conclusion I says he will 'definitely' be eligible after two more years. Two things block this. First, he may resign, retire or be transferred out, so the continuity is not guaranteed. Second, 'only if' states a necessary condition, not a sufficient one, so completing five years does not by itself guarantee eligibility. Therefore only II follows.

927. Customers preferring branch visits $= 1200 - 780 = 420$. Half of 1200 is 600, and $420 < 600$, so Conclusion I follows. Conclusion II is not supported: the survey records a *preference*, and a preference for internet banking says nothing about where or whether the respondents have internet access; moreover the claim is about all 1200 respondents, including the 420 who prefer branches. So only I follows.

928. From 11 pm to 12 midnight is 1 hour and from 12 midnight to 4 am is 4 hours, a total of $1 + 4 = 5$ hours. Conclusion II therefore follows arithmetically. Conclusion I overgeneralises with the word 'all'. The notice itself points out that withdrawals can be planned in advance, and a large number of customers will simply be asleep or will not need cash in that window. Nothing in the passage supports a claim about every customer. Hence only II follows.

929. If Rs. 250 crore is 25% of the total, then the total $= 250 \times 4 =$ Rs. 1,000 crore, so Conclusion I follows. Since the company disburses only two categories, non-education loans $= 1000 - 250 =$ Rs. 750 crore, so Conclusion II also follows. Both conclusions are direct arithmetic consequences of the passage, so 'Both I and II follow' is correct.

930. A valid application means the eligibility condition is satisfied. That condition is an *inclusive* disjunction: commerce graduate **or** banking diploma, and possibly both. So what the passage guarantees is that *at least one* of the two qualifications is present. It does not tell us which one, so Conclusion I alone cannot be asserted and Conclusion II alone cannot be asserted; 'Only I follows' and 'Only II follows' are therefore both wrong. 'Both I and II follow' is also wrong, not because holding both qualifications is impossible, but because it is simply not derivable from the passage: Sneha may hold both, yet nothing given establishes that she does. 'Neither I nor II follows' is wrong too, since it is certain that at least one of them is true. When at least one of two conclusions must be true but the passage does not determine which, the standard answer is 'Either I or II follows'.

931. The requirement applies only to deposits above Rs. 50,000. Rs. 35,000 is below that threshold, so the requirement was not triggered and Conclusion I is actually contradicted by the passage. Conclusion

II is a separate leap: the size of a deposit tells us nothing about whether a person holds a PAN, and a PAN holder may equally well deposit Rs. 35,000. Since neither conclusion is supported, the answer is 'Neither I nor II follows'.

932. Total balance = number of accounts × average balance. In April it was $4{,}80{,}000 \times 2500$ = Rs. 120 crore. In September it was $6{,}00{,}000 \times 2200$ = Rs. 132 crore. The total therefore *rose* by Rs. 12 crore, so Conclusion I is false: a falling average does not imply a falling total when the count is rising. For Conclusion II, the increase is $6.0 - 4.8 = 1.2$ lakh on a base of 4.8 lakh, that is $\frac{1.2}{4.8} \times 100 = 25\%$, so II follows. Hence only II follows.

933. Take the trained-in-detection group as the pivot. Every cashier lies inside it and every trainee lies outside it. Two groups, one wholly inside a set and one wholly outside it, cannot overlap, so no trainee can be a cashier and Conclusion I follows. For Conclusion II, the passage guarantees that at least one clerk is inside the trained group; every trainee is outside that group; so that clerk cannot be a trainee. Hence at least one clerk is not a trainee, which is exactly 'some clerks are not trainees', and II follows. Both conclusions follow.

934. I follows directly: a fee of Rs. 20 where none existed makes such withdrawals costlier. II does not follow, because the percentages are computed on two different and unknown bases. If branch withdrawals were a small share of the total, a 38% fall there could easily be outweighed by a 30% rise on a much larger ATM base, so the direction of the combined total cannot be determined. III overstates the passage: the fee applies only to branch withdrawals *below* Rs. 5,000, not to every branch withdrawal. Hence only I follows.

935. For I: $\frac{630}{840} \times 100 = 75\%$, so I follows. For II: total income minus interest income = $840 - 630$ = Rs. 210 crore, and since income is either interest or non-interest, II follows. For III: 30% of 840 is 252, and provisions of Rs. 220 crore are less than Rs. 252 crore, in fact $\frac{220}{840} \times 100 \approx 26.2\%$. So III does not follow. The correct choice is 'Only I and II follow'.

936. The phrase 'only if' states a *necessary* condition, not a sufficient one. So anybody who fails either requirement is certainly not promoted, but somebody who meets both requirements is merely a candidate, not a certainty; seniority, vacancies or interviews may still decide. Rekha fails the audit-objection requirement, so II follows. Suman fails the JAIIB requirement, so III follows. Tarun meets both requirements, but since the condition is only necessary, his promotion is not guaranteed and I does not follow. Hence only II and III follow.

937. Take 300 branches and 300 units of deposits as a convenient base. Rural branches = 99 and hold 33 units, giving about 0.33 unit per branch. Urban branches = 201 and hold 267 units, giving about 1.33 units per branch. So deposits per rural branch are well below deposits per urban branch, which makes option C a direct arithmetic inference. Option A needs cost and revenue data, which the report does not give; a low-deposit branch with very low staff cost may still be profitable. Option B attributes a motive that is nowhere stated. Option D is a plan, and the report describes a situation, not an intention. Option E is wrong because the report gives only totals; a rural branch could hold a few large deposits and still show a low total.

938. Share in 2022-23 = $\frac{24000}{80000} \times 100 = 30\%$; share in 2023-24 = $\frac{18000}{120000} \times 100 = 15\%$. The share fell from 30% to 15%, that is by *exactly* half, not by more than half, so Conclusion I fails on the strict wording. Non-ATM complaints were $80000 - 24000 = 56{,}000$ and then $120000 - 18000 = 1{,}02{,}000$. The rise is 46,000 on a base of 56,000, that is $\frac{46000}{56000} \times 100 \approx 82.1\%$, which is more than 80%, so Conclusion II follows. Hence only II follows.

939. Use the contrapositive of the second sentence: if an account has slipped into the non-performing category, it was not under monthly monitoring. Three accounts have slipped, so those three were not under monthly monitoring, and I follows. II does not follow: an account may have been perfectly healthy in the first quarter and turned stressed only later, so the officers cannot be shown to have

missed anything that existed in Q1. III does not follow because it converts a co-occurrence into a cause. The flagged accounts may have survived because the borrowers recovered, or simply because too little time has passed; the passage offers no comparison group to establish that monitoring did the work.

940. In 2023-24 personal loans $= 9600 - 4800 - 2400 =$ Rs. 2,400 crore. In 2024-25 the total $= 9600 \times 1.25 =$ Rs. 12,000 crore, home loans $= 4800 \times 1.20 =$ Rs. 5,760 crore and vehicle loans $= 2400 \times 1.50 =$ Rs. 3,600 crore. Personal loans $= 12000 - 5760 - 3600 =$ Rs. 2,640 crore, a rise of 240 on 2400, that is 10%, so I follows. Home loan share $= \dfrac{5760}{12000} \times 100 = 48\%$ exactly, so 'less than 48%' is false and II does not follow. Vehicle loans grew 50% against 25% for the book, so III follows. Answer: only I and III.

941. The bank's argument moves from a difference between two groups to a causal claim about the module. The cleanest way to weaken it is to show that the two groups differed in some other way that itself explains the gap. Option D does exactly this: if only high-credit-score borrowers received the module, then the module group was already the safer group, and their lower default rate may owe nothing to the module. Option A describes the module's format and says nothing about outcomes. Option B widens the sample and if anything strengthens the finding. Option C is opinion evidence and is far weaker than a structural flaw in the comparison. Option E rules out a general market-wide trend and therefore protects rather than damages the bank's claim.

942. An implicit assumption is something that must be true for the stated claim to hold. The bank claims service quality for the affected customers will not fall even though their branch disappears. That claim collapses unless those customers can still be served some other way, so option C is assumed. Option A is a fact about location and the claim would stand or fall the same way wherever the branches are. Option B concerns cost, which may well be the motive for the closure but is not needed for the claim about service quality. Option D is far too strong: retraining may be provided, and the claim survives either way. Option E about other banks is entirely irrelevant to the service received by Ashoka Bank's own customers.

943. The second rule says missing the deposit target leads to review. Its contrapositive is: not under review implies the deposit target was not missed. Trichy was not under review, so it met its deposit target and I follows. The first rule is an 'if and only if', so not being Grade A means the conjunction failed, that is at least one of the two targets was missed. Since the deposit target was met, the CASA target must be the one missed, so II follows. III reverses the second rule: 'misses deposit $\Rightarrow$ review' does not give 'review $\Rightarrow$ misses deposit'. A branch could be placed under review for fraud, staff shortage or any other reason, so III does not follow. Answer: only I and II.

944. We need a fact that supplies a countervailing force strong enough to pull deposits below the March level. Option E does this: a penalty introduced in the middle of the period drove a large number of account closures, and closed accounts remove balances outright, which can more than cancel the inflow attracted by the higher rate. Option A removes a competing explanation and therefore deepens the puzzle rather than resolving it. Option B, more branches, would be expected to raise deposits, so it deepens the puzzle too. Option C is neutral: an unchanged FD rate existed before April as well and so cannot account for a change. Option D is favourable publicity and again works against the observed fall.

945. Let the remittances desk have r employees. Then deposits $= 2r$ and loans $= r + 6$, so $r + 2r + (r + 6) = 62$, giving $4r = 56$ and $r = 14$. Hence remittances $= 14$, deposits $= 28$, loans $= 20$. All 20 at the loans desk have cleared CAIIB, so at least 20 have cleared it and I follows. II fails because the status of the 28 employees at the deposits desk is unknown, so the true figure could be anything from 20 to 48. For III, $\dfrac{28}{62} \times 100 \approx 45.2\%$, which is indeed more than 45%, so III follows. Answer: only I and III.

Subtopic 2.11.7

946. Take the conditions one at a time. Condition (ii): a person born on 14 March 1999 completes 24 years on 14 March 2023, so on 01.01.2024 she is 24 years 9 months old. This lies between 21 and 28, so (ii) is satisfied. Condition (i): her graduation score is 68%, which is not less than 60%, so (i) is satisfied. Condition (iii): her written-test score is 57%, which is not less than 50%, so (iii) is satisfied. All three stated conditions are met and no information is missing, so the answer is neither 'not selected' nor 'data inadequate'. No referral clause has been given in this set of criteria, so options (C) and (D) cannot apply at all. Hence the candidate is to be selected.

947. Condition (i): net monthly income Rs. 42,000 is not less than Rs. 30,000, so (i) is satisfied. Condition (iii): age 47 years is not more than 55 years, so (iii) is satisfied. Condition (ii): the requirement is 2 years, i.e. 24 months, of continuous service with the present employer, but he has completed only 11 months. Since $11 < 24$, condition (ii) fails. Every condition in the given list is mandatory and no exception or referral clause has been provided for a shortfall in length of service, so the failure cannot be condoned or passed upward. All the facts needed to test each condition are stated, so the data are not inadequate. Hence the loan is not to be sanctioned.

948. Condition (i) is satisfied: the college is recognised. Condition (iii) is satisfied: Rs. $7,50,000$ does not exceed Rs. $10,00,000$. Condition (ii) has two parts – a parent or guardian must join as co-applicant, and that co-applicant must have an annual income of at least Rs. $3,00,000$. The first part is met, since the father is willing to join. The second part cannot be tested at all, because the father's annual income is nowhere stated. It would be wrong to sanction (the income might be below the floor) and equally wrong to reject (the income might be well above it), so options (A) and (B) are both unsafe. No referral clause has been given for a missing document, so (C) and (D) do not apply. When one mandatory condition can be neither verified nor ruled out, the correct decision is that the data provided are inadequate.

949. A course of action follows only if it addresses the problem in the statement and is practicable. The problem is a mismatch between demand and capacity that occurs in a predictable window – the first week of the month, when salaries and pensions are credited. Action I adds capacity exactly when the surge occurs and leaves normal weeks untouched; it is both relevant and workable, so it follows. Action II removes the service instead of improving it: a bank cannot refuse cash transactions to its customers for a quarter of every month, and doing so would convert a delay into a total denial of service. It is an extreme measure and does not follow. Since exactly one of the two is a valid response, 'Either', 'Neither' and 'Both' are ruled out, and only I follows.

950. First test the main conditions. Condition (ii): born 09 February 1997, she turns 27 on 09 February 2024, so on 01.07.2024 she is 27 years old, which lies between 22 and 30; satisfied. Condition (iii): she has cleared both the written test and the interview; satisfied. Condition (i): she is not a post-graduate, so this condition fails and she cannot simply be selected – option (A) is out. Now check the exception. It applies when a candidate satisfies everything except (i) and is a graduate with at least 70%. She satisfies (ii) and (iii), fails only (i), and her graduation score is 74%, which is not less than 70%. Every part of the exception is met, so the case does not end in rejection but is passed upward. The exception names the General Manager, not the Chairman, so (D) is wrong. All facts are given, so (E) is wrong.

951. Condition (i): his net monthly income is Rs. 60,000, which is not less than Rs. 25,000, so this is satisfied. Condition (ii) needs a calculation. The permitted EMI ceiling is 40% of Rs. $60,000 = \frac{40}{100} \times 60000 =$ Rs. $24,000$. The proposed EMI is Rs. $26,500$. Since $26500 > 24000$, the proposed EMI exceeds the ceiling and condition (ii) fails. Note that a high income does not rescue the case: the ceiling is itself a percentage of that income, so it rises and falls with the income. Both conditions are mandatory and no exception or referral clause is provided, so options (C) and (D) cannot apply, and all the required figures are given, so (E) does not apply. Hence the loan is not to be sanctioned.

952. The PAN card is required in every case, and in addition the applicant must satisfy either the age route (i) or the voluntary-retirement route (ii). Test each person. Mr. Nair is 58, so route (i)

is out; route (ii) requires the application within one month of retirement, but he retired four months ago, so route (ii) also fails. Mrs. Bose satisfies route (i) at 61 years, but the PAN card is mandatory 'in either case' and she does not hold one, so she fails. Mr. Pillai is 63 years, which satisfies route (i) since $63 \geq 60$, and he holds a PAN card, so both requirements are met – he is eligible. Mr. Jain is 54, which is below 60 and also below the lower limit of 55 in route (ii), so neither route is open to him despite his recent voluntary retirement. Exactly one person qualifies, so 'None of these' is wrong.

953. Check the four main conditions. (ii): age 44 lies between 21 and 60; satisfied. (iii): no outstanding default; satisfied. (iv): Rs. $4,20,000$ does not exceed Rs. $5,00,000$; satisfied. (i): he owns no irrigated land at all, so this fails and outright sanction is impossible. Now match the failure against the exceptions. Exception (b) applies only when the condition that fails is (iv); here (iv) is satisfied, so (b) is irrelevant and option (D) is wrong. Exception (a) applies when the only failure is (i) and the applicant owns at least 4 acres of unirrigated land. His only failure is indeed (i), and he owns 5 acres of unirrigated land, and $5 \geq 4$. Both parts of exception (a) hold, so the case is referred to the Regional Manager rather than rejected. All figures are stated, so (E) is wrong.

954. Test each condition. (i): 6 years of operation is at least 3 years; satisfied. (ii): turnover Rs. 72 lakh is at least Rs. 50 lakh; satisfied. (iii): the firm made a loss of Rs. 1.4 lakh in the earlier of the two years, so it did not earn a profit in each of the last two years; this fails. (iv): existing borrowings are Rs. 26 lakh against a ceiling of Rs. 20 lakh, and $26 > 20$; this also fails. The trap lies in the exception. It is worded 'if all conditions except (iii) are satisfied', which requires (i), (ii) and (iv) all to hold while only (iii) fails. Here two conditions fail, (iii) and (iv), so the exception does not apply even though the profit and loss figures by themselves match its numerical test – profit in the latest year and a loss of Rs. 1.4 lakh, which is under Rs. 2 lakh. With a mandatory condition failing and no exception covering it, the limit is not to be sanctioned.

955. Work out each ceiling separately and then take the smallest, because every rule must hold at once. **Income rule:** the total permissible EMI is 45% of Rs. $80,000 = \frac{45}{100} \times 80000 =$ Rs. $36,000$. She already pays Rs. $9,000$, so the EMI available for the new loan is $36000 - 9000 =$ Rs. $27,000$. At Rs. 900 per lakh, the loan this supports is $\frac{27000}{900} = 30$ lakh. **Property rule:** 80% of Rs. 50 lakh $= \frac{80}{100} \times 50 = 40$ lakh. **Absolute cap:** Rs. 40 lakh. The three ceilings are Rs. 30 lakh, Rs. 40 lakh and Rs. 40 lakh, and the binding one is the smallest, Rs. 30 lakh. The common error is to forget to subtract the existing EMI, which would give $\frac{36000}{900} = 40$ lakh and lead to option (D).

956. The complaint has an identifiable cause – unfit notes are reaching the ATM cassettes – and a bank is expected both to correct the cause and to satisfy itself that the correction is being observed. Action I attacks the cause directly by fixing the standard of notes the loading agency must use; it is specific, within the bank's authority over its contractor, and practicable, so it follows. Action II is a follow-up control: an instruction that is never verified is easily ignored, and surprise inspection is the standard supervisory tool for checking compliance at the point where the notes actually enter the machine. It too follows. The two actions are not alternatives to each other – one prescribes and the other verifies – so 'Either' is wrong, and since each is independently sound, 'Only I', 'Only II' and 'Neither' are all wrong. Hence both follow.

957. All four conditions are mandatory and there is no exception clause, so a single failure disqualifies. Rajat: degree in Agriculture with $64\% \geq 60\%$, age 26 within 21–32, willing $4 \geq 3$ years, test passed – eligible. Meenakshi: the qualifying degree list includes Agricultural Engineering, $61\% \geq 60\%$, age 31 is within 21–32 since the upper limit is 32 and not 30, willingness exactly 3 years meets 'at least 3 years', test passed – eligible. Sandeep: 72%, age 23, 5 years, test passed – eligible. Kavita: conditions (i), (ii) and (iii) are all comfortably met, but condition (iv) requires the candidate to have *passed* the computer proficiency test, and she has not even appeared for it. Condition (iv) therefore fails and she is not eligible. Since exactly one candidate fails, option (E) is wrong.

958. Condition (i): from 15 June 2018 to 01.01.2025 is 6 years and about $6\frac{1}{2}$ months, which is at least 5 years; satisfied. Condition (iii): a semi-urban posting of 2 years; satisfied. Condition (ii): the 2023

appraisal is 'Average', which is below 'Good', so this fails and straightforward promotion is ruled out. Now test the exception, which has two requirements. The rating requirement is met – exactly one of the three appraisals is 'Average' and the latest, for 2024, is 'Very Good'. But the exception is available only to an officer with *at least* 8 *years* of service in Scale I, and his service is only about 6 years 6 months. Since $6\frac{1}{2} < 8$, the exception is not available to him at all. A mandatory condition fails and no clause rescues it, so the officer is not to be promoted.

959. The oddity to be addressed is that two branches of the *same* bank, in the same city, price the same service very differently. Action I asks the old branch to undercut the new one. That sets one branch of a bank competing against another branch of the same bank on price, which reduces the bank's own revenue without removing the inconsistency – it merely reverses its direction. It is an impulsive step and does not follow. Action II addresses the inconsistency at the level where it can actually be settled, namely the bank's own rent policy for the city; it follows. Action III is the fact-finding step: if the newer branch offers smaller lockers, fewer operating hours or weaker security, the lower rent may be entirely proper and no change is called for. Establishing this before revising anything is prudent, so it follows. Hence only II and III follow.

960. Condition (iii) first: born 12 November 1993, he completed 30 years on 12 November 2023, so on 01.08.2024 he is 30 years 8 months old, which lies between 23 and 32; satisfied. Condition (i): B.Tech in Information Technology with 63%, and $63 \geq 60$; satisfied. Condition (ii): 6 years of post-qualification experience in a scheduled commercial bank's IT department, and $6 \geq 2$; satisfied. Condition (iv): he scored 66 marks against a floor of 70, and $66 < 70$; this fails, so option (A) is ruled out. Now identify the right exception. Exception (a) is triggered only when (ii) fails, but (ii) is satisfied here, so (a) is irrelevant and option (C) is wrong. Exception (b) is triggered when the sole failure is (iv). That is exactly the position. Its two extra tests are then applied: the score must be at least 60, and $66 \geq 60$; and the experience must exceed 5 years, and $6 > 5$. Both hold, so the case goes to the General Manager.

961. Condition (i): Rs. $9,60,000 \geq$ Rs. $6,00,000$; satisfied. Condition (ii): net monthly income $= \dfrac{960000}{12} =$ Rs. $80,000$, so the ceiling is 50% of that, namely Rs. $40,000$. Total obligations $= 24000 + 9600 =$ Rs. $33,600$, and $33600 \leq 40000$; satisfied. Condition (iii): the loan runs 7 years, so her age at maturity is $52 + 7 = 59$ years, and $59 \leq 60$; satisfied. Condition (iv): her score is 672, below 700; this fails, so the loan cannot be sanctioned outright. Now test the exception. Its first extra test passes, since 672 lies between 650 and 699. Its second extra test requires a fixed deposit of at least 25% of the loan amount, that is $\dfrac{25}{100} \times 600000 =$ Rs. $1,50,000$. She holds only Rs. $1,35,000$, and $135000 < 150000$, so this test fails. An exception operates only when *all* its requirements are met, so it cannot be invoked and the case is not referred. The loan is not to be sanctioned.

962. The decision must be made on the total cost of borrowing, which is interest plus every charge, not on the interest rate alone. **Scheme P:** flat interest $= \dfrac{800000 \times 8 \times 3}{100} =$ Rs. $1,92,000$; adding the fee of Rs. $5,000$ gives Rs. $1,97,000$. **Scheme Q:** interest is given as Rs. $1,28,000$; the fee is 1% of Rs. $8,00,000 =$ Rs. $8,000$; total $= 128000 + 8000 =$ Rs. $1,36,000$. **Scheme R:** flat interest $= \dfrac{800000 \times 7.5 \times 3}{100} =$ Rs. $1,80,000$; adding the premium of Rs. $12,000$ gives Rs. $1,92,000$. Comparing Rs. $1,97,000$, Rs. $1,36,000$ and Rs. $1,92,000$, Scheme Q is the cheapest. Option (D) names the right scheme but omits the processing fee, and option (C) reports Scheme R's total correctly yet recommends the wrong scheme, so both are wrong.

963. Exception (b) applies only when condition (ii) is the *single* condition that fails and the house owned is let out on a registered lease of at least 2 years. Test each case. Mr. Kale: (i) holds, since $5 \geq 3$ years; (iii) holds, since Rs. $58,000 \leq$ Rs. $65,000$; (ii) fails, since his flat is 12 km away and $12 < 25$. The sole failure is (ii), and the flat is on a registered 3-year lease, with $3 \geq 2$ – exception (b) applies. Ms. Thomas: her house is 40 km away, and $40 > 25$, so (ii) is actually satisfied; all three conditions hold and quarters are simply allotted, with no referral. Mr. Jaideep Roy: (i) fails and (iii) also fails, since Rs. $70,000 >$ Rs. $65,000$; exception (a) requires everything but (i) to hold, so two

failures block it, and (b) does not apply since (ii) is satisfied. Ms. Gowda: (i) fails, since $2 < 3$ years, and (ii) fails as well, since $8 < 25$ km; the lease saves only condition (ii), leaving (i) still unmet, so (b) cannot be invoked. Only case (A) qualifies.

964. Build the limit in the order the rules prescribe. Component (i): $32000 \times 6.5 = $ Rs. $2,08,000$. Component (ii) is 10% of component (i), *not* of the running total: $\frac{10}{100} \times 208000 = $ Rs. $20,800$. Component (iii) is 20% of component (i): $\frac{20}{100} \times 208000 = $ Rs. $41,600$. Total limit $= 208000 + 20800 + 41600 = $ Rs. $2,70,400$. A quicker route is to note that the additions together are 30% of component (i), so the limit is $1.30 \times 208000 = $ Rs. $2,70,400$. Now apply rule (iv): since Rs. $2,70,400$ does not exceed Rs. $3,00,000$, collateral security is not required and the limit is sanctioned collateral-free. Option (C) comes from adding only the 20% component, and option (D) from wrongly treating Rs. $3,00,000$ as the limit itself rather than as a threshold.

965. The temporary removal of the bank's cash for private use is a breach of trust, and its seriousness does not depend on whether the money came back or whether anyone noticed. Option (A) treats absence of loss as absence of misconduct and would leave a repeated breach unrecorded. Option (E) is worse still, because a customer is in no position to detect a shortage that is made good overnight, so the trigger being waited for may never arrive. Option (C) substitutes an informal warning for the disciplinary process and merely relocates a person whose integrity in handling cash is in question. Option (D) confuses recovery with accountability; in any case there is nothing outstanding to recover, since the cash was always replaced. Option (B) alone follows the course a branch manager is actually bound to take: the matter is beyond his own authority to settle, so it is reported to the controlling office and dealt with under the staff conduct rules, with the cashier kept away from the cash function while the inquiry proceeds.

966. Separate the four eligibility conditions from the rule that limits the size of the subsidy, because only the former can disqualify. Condition (i): Rs. $10,80,000 \leq$ Rs. $12,00,000$; satisfied, so option (D) is factually wrong. Condition (ii): no member of the household owns a pucca house; satisfied. Condition (iii): $148 \leq 160$ square metres; satisfied, so option (C) is factually wrong. Condition (iv): the flat is registered jointly with his wife, so the adult woman of the household is a co-owner; satisfied. He is therefore eligible. The Rs. $9,00,000$ figure is not a condition of eligibility at all – it is the ceiling on the loan amount that the subsidy is computed upon, which is why option (A) misreads the scheme. Since the sanctioned loan is Rs. $14,00,000$, the subsidy applies to Rs. $9,00,000$ and the remaining $1400000 - 900000 = $ Rs. $5,00,000$ carries the normal rate, which makes option (E) wrong as well.

Subtopic 2.11.8

967. Test A first. Banks in India do insist on identity and address proof at the time of account opening, so A is a true statement. Now test R. KYC norms, laid down by the regulator, do require the bank to establish who the customer is and where he or she lives, so R is also true. Finally test the link. The documents in A (identity proof and address proof) are exactly the two things R says the bank must establish; the demand in A exists because of the requirement in R. So R does explain A, which rules out option (B). A is not false, so (D) and (E) are ruled out, and R is not false, so (C) is ruled out. Hence both are true and R is the correct explanation of A.

968. Check A. From 4 January to 20 May is more than four months, so the cheque is beyond its validity and would indeed be returned; A is true. Check R. The banking practice in India is that a cheque is valid for three months from its date and is treated as stale thereafter, so R is true. Check the link. The very rule stated in R is what causes the return described in A, since 4 January plus three months expires on 4 April, well before 20 May. So R is the correct explanation of A. Note the order of the options in this question: that combination is listed second, so the answer is (B), not (A). The options 'A true, R false', 'A false, R true' and 'both false' all fail because each statement has been verified as true.

969. A is true: by branch network, deposits and balance-sheet size the State Bank of India is the

largest public sector bank in the country. R is also true: the Reserve Bank of India is the regulator of all commercial banks in India. So options (C), (D) and (E), each of which calls at least one statement false, are wrong. The remaining choice is whether R explains A. The RBI regulates the smallest private sector bank in exactly the same way as it regulates SBI, so regulation by the RBI cannot account for one bank being larger than another. R is a true but unrelated fact. Hence both are true but R is not the correct explanation of A.

970. A is true: crossing a cheque is precisely a safety device, because a crossed cheque must be collected through a bank account and cannot be paid over the counter. R states the opposite of this rule, and is therefore false. A crossed cheque cannot be paid in cash to a bearer at the counter; that is the whole point of crossing. Since A is true, options (D) and (E) are out; since R is false, options (A) and (B), which need R to be true, are out. Hence A is true but R is false.

971. Take R first, because it settles A. A demand draft is a prepaid instrument: the bank takes the money (plus commission) from the purchaser and only then issues the draft, so R is true. Because the bank already holds the funds, the payment of a draft does not depend on any balance in the purchaser's account, so a draft is not returned for insufficient funds. That makes A false. A cheque, not a draft, is the instrument that can bounce for want of funds. Since A is false, (A), (B) and (C) are ruled out; since R is true, (E) is ruled out. Hence A is false but R is true.

972. A is false: the one-rupee note is issued by the Government of India (it carries the signature of the Finance Secretary, not of the Governor). The RBI issues currency notes of every other denomination, but not the one-rupee note. R is also false: the RBI is the central bank and the regulator of the banking system; it acts as banker to the government and to banks, and it does not run deposit accounts for ordinary members of the public. Since both statements are false, every option that requires either one to be true is wrong, and the answer is that both A and R are false.

973. A is true: this is standard advice given by every bank. R is true as well: an ATM machine authenticates a transaction on the card plus the PIN alone, so the two together are enough for a stranger to draw cash. Now the link. The warning in A exists exactly because of the danger described in R – the card and PIN together are a complete key to the account. So R is the correct explanation of A and (B) is wrong. Neither statement is false, so (C), (D) and (E) are wrong.

974. Verify the code given in A. $B \to C$, $A \to B$, $N \to O$, $K \to L$, so BANK becomes CBOL, as stated. Apply the same shift to LOAN: $L \to M$, $O \to P$, $A \to B$, $N \to O$, giving MPBO, which is exactly what A claims. So A is true. R states the rule 'next letter in the alphabet', and both words obey it, so R is true. The rule in R is the very mechanism that produces the codes in A, so R explains A. Hence both are true and R is the correct explanation of A.

975. Work out the division. The ratio terms add up to $2 + 3 + 4 = 9$, so one part $= \dfrac{7200}{9} =$ Rs. 800. This is exactly what R says, so R is true. Bina's share is 3 parts $= 3 \times 800 =$ Rs. 2,400, not Rs. 2,700. (Rs. 2,700 would be Bina's share only if the total were Rs. 8,100.) So A is false. Since A is false, options (A), (B) and (C) are ruled out; since R is true, (E) is ruled out. Hence A is false but R is true.

976. Check A. Amount $= 10000 \times \left(1 + \dfrac{10}{100}\right)^2 = 10000 \times \dfrac{121}{100} =$ Rs. 12,100. So A is true. Check R. Under compounding, the second year's interest is charged on Rs. 11,000 instead of Rs. 10,000, so compound interest exceeds simple interest for any period longer than one year; R is true. Now the link. R only tells us that Rs. 12,100 must exceed the simple-interest amount of Rs. 12,000; it does not produce the figure Rs. 12,100, which comes from the compound-interest formula itself. A general inequality cannot explain a specific value. Hence both are true, but R is not the correct explanation of A.

977. Draw the path. Ravi goes 6 km north, then a right turn from north faces him east, and he goes 8 km east. The displacement is the hypotenuse of a right triangle with legs 6 and 8, so it is $\sqrt{6^2 + 8^2} = \sqrt{36 + 64} = \sqrt{100} = 10$ km. So A is true. R claims the shortest distance is the sum 14 km. That is the distance actually walked along the path, not the straight-line distance, and the two

legs are perpendicular, not along the same line, so the sum is wrong; R is false. A true and R false gives option (C).

978. Decode the relationship step by step. 'My mother's only son' – Sita is female, so her mother's only son is Sita's brother. 'The son of' that person is therefore Sita's brother's son. A brother's son is a nephew, so the man in the photograph is Sita's nephew and A is true. R states the general rule that a brother's son is a nephew, which is true, and it is exactly the rule used in the last step of the decoding, so R is the correct explanation of A. Note the order of options in this question: 'both true and R is the correct explanation' is listed fourth, so the answer is (D). The options calling either statement false are wrong because both were verified true.

979. Count for A. Ahead of Anil there are 11 customers, so behind him there are $40 - 12 = 28$ customers, and counting Anil himself he is the 29th from the back. So A is true. Now R. The correct identity is (position from front) + (position from back) $= n + 1$, because the person himself is counted once from each end. Here $12 + 29 = 41 = 40 + 1$, not 40. So R, as stated, is false. Since A is true and R is false, the answer is (C). Note the trap: R is 'nearly' right and does relate to A, but a statement that is false cannot be a correct explanation.

980. Compute the interest in A: SI $= \dfrac{20000 \times 8 \times 2}{100} =$ Rs. 3,200, not Rs. 4,000. (Rs. 4,000 would need a rate of 10%.) So A is false. R correctly describes simple interest – each year's interest is 8% of Rs. 20,000, i.e. Rs. 1,600, so R is true. The true relationship is therefore 'A is false but R is true'. Look at the given options: they offer only 'both true with explanation', 'both true without explanation', 'A true and R false' and 'both false'. The combination we need is not listed among them, so the correct choice is 'None of these'.

981. Build the family step by step. Q is the sister of R, so Q and R are siblings and share both parents. P is the father of Q, and since Q and R are siblings, P is also the father of R. S is a parent of R (R is the son of S). R already has P as father, so S is the other parent of R, that is, R's mother. Being the mother of R, and Q being R's sibling, S is also the mother of Q. So A is true. R sets out exactly this chain – shared parentage plus the fact that the father's place is already taken by P – so R is true and is the reason A holds. Hence both are true and R is the correct explanation of A.

982. Check A. Selling price is Rs. 1,080 and the gain is 20%, so CP $= \dfrac{1080}{1.2} =$ Rs. 900. A is true. Check R. The selling price is 90% of the marked price, so MP $= \dfrac{1080}{0.9} =$ Rs. 1,200. R is true as well, so (C), (D) and (E) are out. Now the link. The cost price was obtained from the selling price and the profit percentage only; the marked price played no part in that calculation. Indeed the shopkeeper could have marked the clock at any figure with a matching discount and the cost price would still be Rs. 900. So R is a true statement about the same transaction but it does not explain A. Hence (B).

983. Check A. In one day Nikhil does $\dfrac{1}{12}$ of the work and Farida $\dfrac{1}{18}$, so together they do $\dfrac{1}{12} + \dfrac{1}{18} = \dfrac{3}{36} + \dfrac{2}{36} = \dfrac{5}{36}$ per day. The time required is $\dfrac{36}{5} = 7.2$ days, so A is true. Check R. The average of 12 and 18 is 15 days, which is longer than either the correct answer or even Nikhil's own time – absurd, since two people together must finish faster than the quicker of them alone. The correct rule uses the reciprocals of the times, not the times themselves, so R is false. A true with R false gives (C).

984. Solve the age problem. Let the ages be $3x$ and $4x$. Then $3x + 4x = 42$, so $7x = 42$ and $x = 6$. Ramesh's age is $3x = 18$ years and Suresh's is $4x = 24$ years. A claims Ramesh is 24, which is in fact Suresh's age, so A is false. The difference of the ages is $24 - 18 = 6$ years, not 12 years, so R is false too. (The figure 12 would be the difference only if the sum were 84.) Since both statements fail, the answer is that both A and R are false.

985. Check R first. A train has crossed a platform only when its rear end has passed the far end of the platform, so the distance it must cover is its own length plus the length of the platform, $180 + 240 = 420$ m. R states exactly this rule, so R is true. Now check A. The speed is 54 km/h $= 54 \times \dfrac{5}{18} = 15$ m/s,

so the time taken is $\frac{420}{15} = 28$ seconds, not 24 seconds. (A time of 24 seconds would require a speed of $\frac{420}{24} = 17.5$ m/s, that is 63 km/h.) So A is false. Since A is false, options (A), (B) and (C) are ruled out; since R is true, (E) is ruled out. Hence A is false but R is true.

986. Compute both interests. Simple interest $= \frac{15000 \times 10 \times 2}{100} =$ Rs. 3,000. Compound amount $= 15000 \times \left(\frac{11}{10}\right)^2 =$ Rs. 18,150, so compound interest = Rs. 3,150. The difference is $3150 - 3000 =$ Rs. 150, so A is true. Now R. The first year's interest is Rs. 1,500; under compounding this Rs. 1,500 itself earns 10% in the second year, i.e. Rs. 150 – precisely the difference just computed. So R is true, and it is the reason the difference takes that value (equivalently $P\left(\frac{r}{100}\right)^2 = 15000 \times 0.01 = 150$). Hence both are true and R is the correct explanation of A.

987. Work out A. Doubling means the interest earned equals the principal P, so P is earned in 8 years and the yearly interest is $\frac{P}{8}$. To become four times, the interest needed is $4P - P = 3P$, which takes $3P \div \frac{P}{8} = 24$ years. So A is true. Now R. Applying R's rule to $n = 8$ would give 16 years for four times, which contradicts the correct figure of 24 years. R confuses simple interest with doubling behaviour under compounding, where a doubling period does repeat. So R is false, and a false statement cannot explain a true one. A true and R false gives (C).

Subtopic 2.12.1

988. Test each number for primality. 43 has no factor other than 1 and itself. 61 is prime. 37 is prime. 79 is prime (it is not divisible by $2, 3, 5$ or 7, and $8^2 = 64 < 79 < 81 = 9^2$). But $51 = 3 \times 17$, so 51 is composite. Hence the group is 'prime numbers' and 51 is the odd one out.

989. Write the alphabetical positions. $B = 2, D = 4$: gap of 2. $F = 6, H = 8$: gap of 2. $J = 10, L = 12$: gap of 2. $N = 14, P = 16$: gap of 2. But $R = 18, U = 21$: gap of 3. So four pairs skip exactly one letter, while RU skips two letters (S and T). Hence RU is the odd one out.

990. A Savings Account, a Current Account, a Fixed Deposit and a Recurring Deposit are all types of *deposit accounts* that a customer opens with a bank and in which money is held. A Debit Card is not an account at all: it is an instrument or access device issued against an existing account, used to withdraw or spend the money already lying in that account. Hence Debit Card is the odd one out.

991. Check which numbers are perfect squares: $121 = 11^2$, $144 = 12^2$, $169 = 13^2$, $196 = 14^2$. For 180: $13^2 = 169$ and $14^2 = 196$, so 180 lies strictly between two consecutive squares and is therefore not a perfect square. Hence 180 is the odd one out.

992. State Bank of India, Punjab National Bank, Canara Bank and Bank of Baroda are all public-sector *commercial banks* that accept deposits from the public and lend to them. The Reserve Bank of India is the central bank and regulator of the country's banking system; it does not run ordinary retail branches for the public and instead supervises the other four. Hence Reserve Bank of India is the odd one out.

993. Divide each by 7: $63 = 7 \times 9$, $77 = 7 \times 11$, $91 = 7 \times 13$, $105 = 7 \times 15$. For 116: $7 \times 16 = 112$ and $7 \times 17 = 119$, so 116 is not a multiple of 7 (it leaves remainder 4). Hence 116 is the odd one out.

994. Rupee (India), Dollar (USA), Euro (Eurozone) and Yen (Japan) are all names of *currencies*. A Ledger is a book or record of account in which transactions are posted; it is a record-keeping device, not a unit of money. Hence Ledger is the odd one out.

995. In each pair check whether the second number is the square of the first. $11^2 = 121$ (yes). $13^2 = 169$ (yes). $17^2 = 289$ (yes). $19^2 = 361$ (yes). Now $21^2 = 441$, not 431. So the relation 'second = (first)^2' fails only for $21 : 431$, which is therefore the odd one out.

996. In each four-digit number multiply the first two digits and compare the product with the two-digit number formed by the last two digits. 4832: $4 \times 8 = 32$ (yes). 6742: $6 \times 7 = 42$ (yes). 9872: $9 \times 8 = 72$ (yes). 5735: $5 \times 7 = 35$ (yes). 6320: $6 \times 3 = 18$, but the last two digits form 20 (no). Hence 6320 is the odd one out.

997. Replace letters by alphabetical positions and test whether (first) + (second) = (third). $BEG \to 2, 5, 7$ and $2 + 5 = 7$ (yes). $DHL \to 4, 8, 12$ and $4 + 8 = 12$ (yes). $EIN \to 5, 9, 14$ and $5 + 9 = 14$ (yes). $FKQ \to 6, 11, 17$ and $6 + 11 = 17$ (yes). $CFJ \to 3, 6, 10$, but $3 + 6 = 9$, which is I, not J. Hence CFJ is the odd one out.

998. Use $SI = \dfrac{P \times R \times T}{100}$. Option A: $\dfrac{5000 \times 8 \times 3}{100} = $ Rs. 1,200. Option B: $\dfrac{6000 \times 5 \times 4}{100} = $ Rs. 1,200. Option D: $\dfrac{4000 \times 10 \times 3}{100} = $ Rs. 1,200. Option E: $\dfrac{3000 \times 8 \times 5}{100} = $ Rs. 1,200. Option C: $\dfrac{9000 \times 4 \times 3}{100} =$ Rs. 1,080. Four plans yield Rs. 1,200 each while option C yields only Rs. 1,080, so C is the odd one out.

999. A Cheque, a Demand Draft, a Pay Order (banker's cheque) and a Bill of Exchange are all *payment instruments*: each is a written order directing that a stated sum of money be paid to a named party, and each can be presented for payment. A Passbook is only a record: it shows the deposits and withdrawals already made in an account and carries no instruction to pay anyone. Hence Passbook is the odd one out.

1000. First note all five are perfect squares: $289 = 17^2$, $361 = 19^2$, $529 = 23^2$, $625 = 25^2$, $841 = 29^2$. So squaring alone does not separate them; look at the roots. The roots $17, 19, 23, 29$ are all prime numbers, but $25 = 5 \times 5$ is composite. The group is therefore 'squares of prime numbers', and 625 is the odd one out.

1001. Check whether the second number is the cube of the first. $8^3 = 512$ (yes). $7^3 = 343$ (yes). $6^3 = 216$ (yes). $5^3 = 125$ (yes). But $4^3 = 64$, not 60. Hence 4 : 60 breaks the pattern and is the odd one out.

1002. For each number find the digit sum and test whether the number is divisible by it. 132: digit sum $1 + 3 + 2 = 6$ and $132 \div 6 = 22$ (yes). 156: digit sum 12 and $156 \div 12 = 13$ (yes). 171: digit sum 9 and $171 \div 9 = 19$ (yes). 195: digit sum 15 and $195 \div 15 = 13$ (yes). 182: digit sum $1 + 8 + 2 = 11$ and $182 \div 11 = 16.54\ldots$, not a whole number ($11 \times 16 = 176$, remainder 6). So four numbers are divisible by their own digit sum and 182 is not; 182 is the odd one out.

1003. Convert to alphabetical positions and test whether (first) × (second) = (third). $BCF \to 2, 3, 6$ and $2 \times 3 = 6$ (yes). $CDL \to 3, 4, 12$ and $3 \times 4 = 12$ (yes). $BDH \to 2, 4, 8$ and $2 \times 4 = 8$ (yes). $CEO \to 3, 5, 15$ and $3 \times 5 = 15$ (yes). $BEK \to 2, 5, 11$, but $2 \times 5 = 10$, which is J, not K. Hence BEK is the odd one out.

1004. Reduce each fraction to lowest terms. $\dfrac{91}{143} = \dfrac{7 \times 13}{11 \times 13} = \dfrac{7}{11}$. $\dfrac{63}{99} = \dfrac{7 \times 9}{11 \times 9} = \dfrac{7}{11}$. $\dfrac{105}{165} = \dfrac{7 \times 15}{11 \times 15} = \dfrac{7}{11}$. $\dfrac{84}{132} = \dfrac{7 \times 12}{11 \times 12} = \dfrac{7}{11}$. But $\dfrac{119}{175} = \dfrac{7 \times 17}{7 \times 25} = \dfrac{17}{25}$, which is not $\dfrac{7}{11}$. Hence $\dfrac{119}{175}$ is the odd one out.

1005. Factorise each number into two primes and check whether those primes are consecutive in the list of primes $2, 3, 5, 7, 11, 13, 17, \ldots$ $15 = 3 \times 5$ (consecutive) (yes). $35 = 5 \times 7$ (consecutive) (yes). $77 = 7 \times 11$ (consecutive) (yes). $143 = 11 \times 13$ (consecutive) (yes). $187 = 11 \times 17$: both are prime, but 13 lies between them, so they are not consecutive primes. Hence 187 is the odd one out.

1006. Add 1 to each number and test whether the result is a perfect cube. $728 + 1 = 729 = 9^3$ (yes). $342 + 1 = 343 = 7^3$ (yes). $215 + 1 = 216 = 6^3$ (yes). $124 + 1 = 125 = 5^3$ (yes). $500 + 1 = 501$, which lies between $343 = 7^3$ and $512 = 8^3$ and is not a cube. So four numbers are of the form $n^3 - 1$ while 500 is not (the number needed there was 511). Hence 500 is the odd one out.

1007. NEFT, RTGS, IMPS and UPI are all electronic *fund-transfer* channels through which money actually moves from one bank account to another. KYC (Know Your Customer) is a customer-

identification and verification procedure carried out at the time of opening or updating an account; no money is transferred by it. Hence KYC is the odd one out.

1008. Split each four-digit number into the two-digit number formed by the first two digits and the two-digit number formed by the last two digits, then check whether the first equals three times the second. 7525: $3 \times 25 = 75$ (yes). 6321: $3 \times 21 = 63$ (yes). 5418: $3 \times 18 = 54$ (yes). 3612: $3 \times 12 = 36$ (yes). 4815: $3 \times 15 = 45$, but the leading pair is 48 (no). Hence 4815 is the odd one out.

Subtopic 2.12.2

1009. Identify the relation in the first pair. 7 and 49 are linked by squaring, since $7 \times 7 = 49$. Apply the same operation to 11: $11 \times 11 = 121$. Checking the other options rules them out: 111 is not a perfect square, $132 = 11 \times 12$ (product of consecutive integers, a different rule), and $144 = 12^2$ which is the square of 12, not of 11. Hence the required number is 121.

1010. Write the alphabetical positions. B = 2, D = 4; F = 6, H = 8. Each letter of the first group has moved forward by 4 places to give the second group ($2 + 4 = 6$, $4 + 4 = 8$). Now take JL: J = 10, L = 12. Adding 4 to each gives $10 + 4 = 14$ and $12 + 4 = 16$, i.e. N and P. So the answer is NP. MO $(13, 15)$ is a shift of 3, KM $(11, 13)$ a shift of 1, and OQ $(15, 17)$ a shift of 5, so none of them fits.

1011. The relation in the first pair is worker to workplace: a cashier is the person who works in a bank. Applying the same relation, a teacher is the person who works in a school. The other options fail the test: a book and chalk are tools a teacher uses (tool relation, not workplace), and a student is the person a teacher serves (a person-to-person relation). Only School gives a workplace, so B is correct.

1012. Compare CAT with DBU letter by letter: C $\rightarrow$ D, A $\rightarrow$ B, T $\rightarrow$ U. Every letter has moved one step forward in the alphabet. Apply the same rule to DOG: D $\rightarrow$ E, O $\rightarrow$ P, G $\rightarrow$ H, giving EPH. EPI wrongly shifts the last letter by 2, FQI shifts every letter by 2, and DPH leaves the first letter unchanged. Hence EPH is correct.

1013. In the first pair, $42 = 6 \times 7$, that is the number multiplied by the next consecutive integer: $n \times (n + 1)$. Applying this to 9 gives $9 \times 10 = 90$. Now test the listed options: $72 = 8 \times 9$, $81 = 9 \times 9$, $99 = 9 \times 11$ and $108 = 9 \times 12$ – none equals 90. Since the correct value 90 is not listed, the answer is None of these.

1014. The first pair links an instrument to the action it is designed to perform: a pen is used to write. The same relation applied to a knife gives its designed action, which is to cut. The remaining options express different relations: Sharp is a property of a knife, Kitchen is a place where it is used, and Steel is the material it is made of. Only Cut matches the instrument-to-action relation.

1015. The first pair links a currency with the country that issues it: the rupee is the currency of India. The yen is the official currency of Japan, so Japan completes the analogy. The distractors are the currencies of other countries: China uses the yuan, South Korea uses the won and Thailand uses the baht. Hence only Japan is correct.

1016. Take positions. A = 1, Z = 26; B = 2, Y = 25. So the first letter moves one step forward ($1 \rightarrow 2$) while the second letter moves one step backward ($26 \rightarrow 25$). Apply the same double rule to CX: C = 3 becomes 4 = D, and X = 24 becomes 23 = W. The answer is DW. DV moves the second letter back by 2, EW moves the first letter forward by 2, and BW moves the first letter backward, so all are rejected.

1017. Look for a relation between 12 and 66. Note $66 = \dfrac{12 \times 11}{2}$, i.e. $\dfrac{n(n-1)}{2}$, the sum of the first $(n - 1)$ natural numbers. Verify: $\dfrac{12 \times 11}{2} = \dfrac{132}{2} = 66$. Applying the same rule to 15: $\dfrac{15 \times 14}{2} = \dfrac{210}{2} = 105$. The distractors correspond to other rules – $90 = 15 \times 6$, $120 = \dfrac{16 \times 15}{2}$ (one term too many) and $135 = 15 \times 9$ – so 105 is the answer.

1018. Compare FLOWER with REWOLF. Reading FLOWER backwards gives R, E, W, O, L, F, which is exactly REWOLF, so the rule is simple reversal of the whole word. Apply the same rule to GARDEN: reading G, A, R, D, E, N backwards gives N, E, D, R, A, G, i.e. NEDRAG. The distractors are near misses: NEDARG interchanges the fourth and fifth letters of the reversal, NDERAG interchanges its second and third letters, and GNEDAR is the reversal with the final letter moved to the front. Hence NEDRAG is correct.

1019. First recognise that 125 is a perfect cube: $125 = 5^3$, so its cube root is 5. The paired number is 6, which is $5+1$. So the rule is: take the cube root and add 1. Check with the second term: $216 = 6^3$, so the cube root is 6 and the required number is $6 + 1 = 7$. Option 8 would mean adding 2, option 9 is not obtainable from any consistent rule here, and 12 is twice the cube root, which does not match the first pair. Hence 7.

1020. Convert to positions. ACE $= (1, 3, 5)$ and GIK $= (7, 9, 11)$. Each letter has advanced by 6 places: $1+6=7$, $3+6=9$, $5+6=11$. Now MOQ $= (13, 15, 17)$. Adding 6 to each gives $(19, 21, 23)$, which are S, U and W, i.e. SUW. RTV $= (18, 20, 22)$ is a shift of 5, NPR $= (14, 16, 18)$ a shift of 1, and TVX $= (20, 22, 24)$ a shift of 7, so only SUW fits.

1021. Debit and Credit are the two opposite sides of every accounting entry – the relation is that of a complementary opposite pair in double-entry bookkeeping. The item that stands opposite to an Asset on a balance sheet is a Liability, since the balance sheet identity is Assets = Liabilities + Capital. Expense and Revenue belong to the profit-and-loss account, not to the asset side of the balance sheet, and Capital Adequacy is a regulatory ratio, not the counterpart of an asset. Hence Liability.

1022. In each pair, compare the second number with the first. For $3 : 10$: $3^2 = 9$ and $9 + 1 = 10$. For $5 : 26$: $5^2 = 25$ and $25 + 1 = 26$. So the rule is $n \to n^2 + 1$. Applying it to 7: $7^2 + 1 = 49 + 1 = 50$. Option 49 is only the square (the $+1$ is missing), $48 = 7^2 - 1$ and $52 = 7^2 + 3$ do not follow the rule. Hence 50.

1023. Write positions for the first pair. BDGK $= (2, 4, 7, 11)$ and CFJO $= (3, 6, 10, 15)$. The gaps are $3-2=1$, $6-4=2$, $10-7=3$, $15-11=4$, so the shifts increase as $+1, +2, +3, +4$ across the four positions. Now DFIM $= (4, 6, 9, 13)$. Applying the same shifts: $4+1=5=$ E, $6+2=8=$ H, $9+3=12=$ L, $13+4=17=$ Q. So the answer is EHLQ. EGKP uses shifts $+1, +1, +2, +3$; FHLQ shifts the first letter by 2; EHKP shifts the third and fourth letters by 2 and 3. Only EHLQ is consistent.

1024. Test cube-based rules on the first pair. $7^3 = 343$ and $343 + 7 = 350$, so the rule is $n \to n^3 + n$, which can also be written as $n(n^2 + 1) = 7 \times 50 = 350$. Apply it to 9: $9^3 = 729$, and $729 + 9 = 738$. Among the options, 729 is only the cube (the $+n$ step is missing), $810 = 9 \times 90$ and $820 = 9^3 + 91$ follow no consistent rule. Hence 738.

1025. In the first triplet the third entry must be built from the first two. Try squares: $6^2 + 5^2 = 36 + 25 = 61$, which matches exactly. (A product rule fails, since $6 \times 5 = 30 \neq 61$, and a sum rule fails since $6 + 5 = 11$.) Applying $a^2 + b^2$ to $(9, 7)$: $9^2 + 7^2 = 81 + 49 = 130$. The distractors come from wrong rules: $112 = 2 \times 9 \times 7 - 14$, $121 = (9 + 2)^2$ and $144 = 12^2$, none of which reproduces 61 in the first triplet. Hence 130.

1026. Handle the letters and the number separately. First letters: A = 1, E = 5, I = 9, each increasing by 4, so the next is $9 + 4 = 13 =$ M. Last letters: C = 3, G = 7, K = 11, again increasing by 4, so the next is $11 + 4 = 15 =$ O. Middle numbers: $4, 16, 36$ are $2^2, 4^2, 6^2$, i.e. squares of consecutive even numbers, so the next is $8^2 = 64$. Combining gives M64O. M49O uses 7^2 (breaking the even pattern), while N64P and M64P shift the letters by 5 instead of 4.

1027. A stethoscope is the characteristic professional instrument used by a doctor in his own work. The corresponding characteristic instrument of a land surveyor is the theodolite, used to measure horizontal and vertical angles. Each of the other options is the defining instrument of a different profession: a scalpel belongs to a surgeon, a telescope to an astronomer, and a microscope to a biologist

or pathologist, and none of them is used in surveying. Only the theodolite fits the professional-to-instrument relation.

1028. Compare DELHI with EDMGJ position by position: D $\to$ E is $+1$, E $\to$ D is -1, L $\to$ M is $+1$, H $\to$ G is -1, I $\to$ J is $+1$. So odd positions move one step forward and even positions move one step backward. Apply this to MUMBAI: M$(+1)$ =N, U(-1) =T, M$(+1)$ =N, B(-1) =A, A$(+1)$ =B, I(-1) =H. The code is NTNABH. NVNCBJ moves every letter forward, NTNCBH gets the fourth letter wrong, and LVLCZJ reverses the whole rule.

1029. Find the relation in the first pair. The growth factor is $\dfrac{2205}{2000} = 1.1025 = (1.05)^2$, which is exactly the compound-interest factor for 2 years at 5% per annum. Confirm: $2000 \times \dfrac{105}{100} = 2100$ after one year and $2100 \times \dfrac{105}{100} = 2205$ after the second. Apply the same relation to Rs. 4,000: $4000 \times 1.05 = 4200$, then $4200 \times 1.05 = 4410$. So the answer is Rs. 4,410. Rs. 4,400 corresponds to simple interest at 5% for 2 years, Rs. 4,500 is a flat 12.5% rise, and Rs. 4,420 fits no consistent rate.

Subtopic 2.12.3

1030. Convert 25 to binary by repeated division by 2: $25 \div 2 = 12$ remainder 1; $12 \div 2 = 6$ remainder 0; $6 \div 2 = 3$ remainder 0; $3 \div 2 = 1$ remainder 1; $1 \div 2 = 0$ remainder 1. Reading the remainders from last to first gives 11001. Check by place value: $11001 = 16 + 8 + 0 + 0 + 1 = 25$. Hence the screen shows 11001.

1031. Write the place values of the six binary digits from left to right: $32, 16, 8, 4, 2, 1$. The code is 1 0 1 1 0 1, so add the place values wherever the digit is 1: $32 + 8 + 4 + 1 = 45$. Hence the locker number is 45. (The nearby options fail: $43 = 101011$, $47 = 101111$, $53 = 110101$.)

1032. Match the code 1 0 1 1 with the four positions in order: ATM = 1 (available), Locker = 0 (not available), Forex desk = 1 (available), Loan desk = 1 (available). The only 0 occurs in the second position, which stands for the Locker. Hence the locker facility is missing, and every other listed facility is present, so the other options are wrong.

1033. Compare the two codes position by position. Position 1: 1 and 1 – both are 1, so the merged bit is 0. Position 2: 0 and 1 – exactly one is 1, so the merged bit is 1. Position 3: 1 and 0 – exactly one is 1, so the merged bit is 1. Position 4: 0 and 0 – neither is 1, so the merged bit is 0. Reading in order, the merged code is 0110.

1034. Take the positions one at a time. Position 1: 1 and 1 – both 1, print 1. Position 2: 1 and 0 – not both 1, print 0. Position 3: 0 and 1 – not both 1, print 0. Position 4: 1 and 1 – both 1, print 1. The printed code is therefore 1001.

1035. Replace each digit of 1 0 1 1 0 by its opposite, digit by digit: $1 \to 0$, $0 \to 1$, $1 \to 0$, $1 \to 0$, $0 \to 1$. Reading the new digits in the same order gives 01001. As a check, a string and its digit-wise opposite must have a 1 wherever the other has a 0, and 10110 together with 01001 satisfies this in all five positions.

1036. Convert each code to its decimal value. $10011 = 16 + 2 + 1 = 19$; $1101 = 8 + 4 + 1 = 13$; $11000 = 16 + 8 = 24$; $10101 = 16 + 4 + 1 = 21$; $1111 = 8 + 4 + 2 + 1 = 15$. The values are $19, 13, 24, 21, 15$, and the greatest is 24, which corresponds to the code 11000.

1037. Step 1 – merge 1010 and 0011 using the at-least-one rule. Position 1: 1 or 0 gives 1. Position 2: 0 or 0 gives 0. Position 3: 1 or 1 gives 1. Position 4: 0 or 1 gives 1. Merged code = 1011. Step 2 – reverse every digit of 1011: 0100. Step 3 – convert 0100 to decimal using place values $8, 4, 2, 1$: only the 4 position carries 1, so the value is 4.

1038. First write 92 in binary. $92 = 64 + 28 = 64 + 16 + 12 = 64 + 16 + 8 + 4$, so the binary form is 1011100 (place values $64, 32, 16, 8, 4, 2, 1$ giving $1, 0, 1, 1, 1, 0, 0$). Verify: $64 + 16 + 8 + 4 = 92$. Now

count the 1s in 1011100: they occur in the 64, 16, 8 and 4 positions, i.e. four of them. Hence the check digit is 4.

1039. Decode both. $110110 = 32 + 16 + 4 + 2 = 54$ and $10111 = 16 + 4 + 2 + 1 = 23$. The difference is $54 - 23 = 31$. Now encode 31 in binary: $31 = 16 + 8 + 4 + 2 + 1$, so every one of the five place values is used and the code is 11111.

1040. Decode the given code using place values $16, 8, 4, 2, 1$: $10110 = 16 + 4 + 2 = 22$. Writing its digits in reverse order gives 01101, whose value is $8 + 4 + 1 = 13$. The machine adds the two values: $22 + 13 = 35$. Now encode 35 in binary: $35 = 32 + 2 + 1$, so with place values $32, 16, 8, 4, 2, 1$ the digits are $1, 0, 0, 0, 1, 1$, i.e. 100011. (Option B is 43 and option C is 39, neither of which equals 35.)

1041. Find the alphabet positions: F = 6, A = 1, D = 4, E = 5. (The given example confirms the rule: B = 2 = 10, A = 1 = 1, D = 4 = 100.) Now convert each number to binary: $6 = 4 + 2 = 110$, $1 = 1$, $4 = 100$, $5 = 4 + 1 = 101$. Joining the blocks in the order of the letters gives 110-1-100-101.

1042. Count the 1s in the data bits 1 1 0 1 0 1 1: they occur in positions $1, 2, 4, 6, 7$, that is five 1s. Five is odd, so one more 1 is needed to make the total even. Therefore the extra bit must be 1, and it is written after the data bits, giving 11010111. Check: this code has six 1s, which is even. Option A ends in 0 and would leave five 1s (odd), so it is wrong; options C and D change the data bits themselves.

1043. Decode $10110 = 16 + 4 + 2 = 22$. Doubling once gives 44 and doubling again gives 88 (in binary this is simply shifting the code two places to the left: 1011000). Now subtract the original amount: $88 - 22 = 66$. Encode 66 in binary: $66 = 64 + 2$, so the code is 1000010. Option B is the code of 88 before the subtraction, which is the common trap.

1044. Step 1 – combine $P = 110101$ and $Q = 101011$ with the both-must-be-1 rule, position by position: $(1,1) \to 1$, $(1,0) \to 0$, $(0,1) \to 0$, $(1,0) \to 0$, $(0,1) \to 0$, $(1,1) \to 1$. Result = 100001. Step 2 – combine 100001 with $R = 011110$ using the exactly-one rule: $(1,0) \to 1$, $(0,1) \to 1$, $(0,1) \to 1$, $(0,1) \to 1$, $(0,1) \to 1$, $(1,0) \to 1$. Result = 111111. Step 3 – convert: $111111 = 32+16+8+4+2+1 = 63$.

1045. Let the unknown code be $x_1x_2x_3x_4x_5x_6$. The rule says the merged bit is 1 exactly when the two bits differ, so in every position where the merged bit is 1 the unknown bit must be the opposite of the known bit, and where the merged bit is 0 the unknown bit must equal the known bit. Compare the known code 1 1 0 0 1 1 with the merged code 1 0 1 1 0 1 position by position. Position 1: merged 1, so flip 1 to get 0. Position 2: merged 0, so keep 1. Position 3: merged 1, so flip 0 to get 1. Position 4: merged 1, so flip 0 to get 1. Position 5: merged 0, so keep 1. Position 6: merged 1, so flip 1 to get 0. The unknown code is 011110. Check by re-applying the rule to 110011 and 011110: the bits differ in positions $1, 3, 4, 6$, giving 101101, as required. Finally convert: $011110 = 16 + 8 + 4 + 2 = 30$.

1046. Count the 1s in each code. 10110100: $1 + 0 + 1 + 1 + 0 + 1 + 0 + 0 = 4$, even – valid. 11010110: $1 + 1 + 0 + 1 + 0 + 1 + 1 + 0 = 5$, odd – corrupted. 01101001: $0 + 1 + 1 + 0 + 1 + 0 + 0 + 1 = 4$, even – valid. 11110000: four 1s, even – valid. 00111100: four 1s, even – valid. Only the second code has an odd count, so it is the corrupted one.

1047. Decode each count. $1101 = 8 + 4 + 1 = 13$ notes of Rs. 500; $101 = 4 + 1 = 5$ notes of Rs. 2,000; $1010 = 8 + 2 = 10$ notes of Rs. 100. Total number of notes $= 13 + 5 + 10 = 28$. Now encode 28 in binary: $28 = 16 + 8 + 4$, so with place values $16, 8, 4, 2, 1$ the digits are $1, 1, 1, 0, 0$, i.e. 11100. (As a check on the reading, the total value would be $13 \times 500 + 5 \times 2000 + 10 \times 100 =$ Rs. 17,500, but the question asks only for the count.)

1048. Undo the last step by reversing each block again. 00110 reversed is 01100; 11110 reversed is 01111; 10000 reversed is 00001; 01110 reversed is 01110. Now read these as 5-digit binary numbers with place values $16, 8, 4, 2, 1$: $01100 = 8 + 4 = 12$, $01111 = 8 + 4 + 2 + 1 = 15$, $00001 = 1$, $01110 = 8 + 4 + 2 = 14$. The alphabet positions $12, 15, 1, 14$ give L, O, A, N, so the word is LOAN. (LOAD would need $12, 15, 1, 4$ and LION would need $12, 9, 15, 14$, neither of which matches.)

1049. Apply the three conditions to each code. 10111: $b_2 = 0$, so condition (i) fails. 01110: $b_2 = 1$ (i) holds; the 1s are b_2, b_3, b_4, three in all, so (ii) holds; $b_3 = 1$, so b_1 and b_3 are not both 0 and (iii) holds – sanctioned. 01011: $b_2 = 1$ and there are three 1s, but $b_1 = 0$ and $b_3 = 0$, so (iii) fails. 11000: $b_2 = 1$ and (iii) holds since $b_1 = 1$, but only two bits are 1, so (ii) fails. 00110: $b_2 = 0$, so (i) fails. Only the second applicant satisfies all three conditions.

1050. Decode both codes. $11011 = 16 + 8 + 0 + 2 + 1 = 27$ accounts per branch, and $1011 = 8 + 0 + 2 + 1 = 11$ branches. Total accounts $= 27 \times 11 = 297$. Now encode 297 in binary. The largest power of 2 not exceeding 297 is 256; $297 - 256 = 41$; then $41 - 32 = 9$; then $9 - 8 = 1$; then $1 - 1 = 0$. So $297 = 256 + 32 + 8 + 1$. With place values $256, 128, 64, 32, 16, 8, 4, 2, 1$ the digits are $1, 0, 0, 1, 0, 1, 0, 0, 1$, giving 100101001.

Subtopic 2.12.4

1051. The digits of 57249 are $5, 7, 2, 4, 9$. Arranging them in ascending order (smallest first) gives $2, 4, 5, 7, 9$, i.e. the new number is 24579. Counting from the left end: first digit = 2, second digit = 4, third digit = 5. Hence the digit third from the left is 5. (The digit 7 is fourth and 9 is fifth, so no other option fits.)

1052. Number the letters of BANKERS: B(1), A(2), N(3), K(4), E(5), R(6), S(7). The required letters are the second = A, third = N, fifth = E and sixth = R, i.e. the set {A, N, E, R}. From these four letters two meaningful words can be formed: EARN and NEAR. Since more than one word is possible, the answer as per the instruction is M. (Options A, R and N would each be a single third letter, valid only if exactly one word existed; X is wrong because words do exist.)

1053. To get the largest number, place the digits in descending order: 8631. To get the smallest number, place them in ascending order: 1368 (no leading zero problem arises here since 0 is not among the digits). The required difference is $8631 - 1368 = 7263$. Hence option A is correct, and since a genuine value from the list is obtained, None of these is not the answer.

1054. The number is 5 9 3 6 4 8. Interchanging in pairs: $(5, 9)$ becomes $9, 5$; $(3, 6)$ becomes $6, 3$; $(4, 8)$ becomes $8, 4$. The new arrangement is 9 5 6 3 8 4. Counting from the right end: first = 4, second = 8, third = 3. So the required digit is 3.

1055. The digits are $8, 2, 5, 9, 1, 4$. In descending order they become 9 8 5 4 2 1. Counting from the right end: first = 1, second = 2, third = 4, fourth = 5. Hence the answer is 5. (Note that 5 is also third from the left, which is a useful cross-check for a six-digit number.)

1056. All five words begin with the same three letters B, A, N, so compare the fourth letters: Bandit has d, Banish has i, Bank has k, Banker has k, Banner has n. In alphabetical order $\mathrm{d} < \mathrm{i} < \mathrm{k} < \mathrm{n}$. So Bandit comes first, Banish second, then the two words beginning Bank…, and Banner last. Between Bank and Banker, the word Bank is exhausted first and a shorter word that is a prefix of a longer one comes earlier, so Bank precedes Banker. The final order is Bandit, Banish, Bank, Banker, Banner, and the third word is Bank.

1057. RESPONSIBLE has 11 letters: R, E, S, P, O, N, S, I, B, L, E. Written in reverse order the arrangement is E, L, B, I, S, N, O, P, S, E, R. Counting from the left: first = E, second = L, third = B, fourth = I, fifth = S. Hence the required letter is S. (Equivalently, the fifth letter from the left of the reversed word is the fifth letter from the right of the original word, which is also S.)

1058. Take the four letters D, E, A, R and test the arrangements systematically. The meaningful English words obtainable are DARE, DEAR and READ. No other arrangement such as RADE, AERD, EDAR or RDEA is an English word. So exactly three meaningful words can be formed, and the answer is Three.

1059. Step 1: The digits $7, 3, 9, 2, 6, 4, 8$ in descending order give 9 8 7 6 4 3 2. Step 2: Interchange positions 1 and 7: 2 8 7 6 4 3 9. Interchange positions 2 and 6: 2 3 7 6 4 8 9. Interchange positions

3 and 5: 2 3 4 6 7 8 9. The fourth digit from the left of 2346789 is 6. (In effect the descending order has simply been reversed into ascending order.)

1060. Original: 1 8 3 7 5 9 2 6. Ascending order: 1 2 3 5 6 7 8 9. Compare position by position. Position 1: 1 and 1 – same. Position 2: 8 and 2 – different. Position 3: 3 and 3 – same. Position 4: 7 and 5 – different. Position 5: 5 and 6 – different. Position 6: 9 and 7 – different. Position 7: 2 and 8 – different. Position 8: 6 and 9 – different. Exactly two digits, namely 1 and 3, keep their positions.

1061. Reverse the digits of each number: $487 \to 784$, $632 \to 236$, $215 \to 512$, $794 \to 497$, $358 \to 853$. Arranging these reversed numbers in descending order gives 853, 784, 512, 497, 236. The fourth from the left is 497, which came from the original number 794. Hence the answer is 794.

1062. DEPARTMENTAL has 12 letters, so each half has 6 letters. First half: D, E, P, A, R, T, which reversed becomes T, R, A, P, E, D. Second half: M, E, N, T, A, L, which reversed becomes L, A, T, N, E, M. The new arrangement is T R A P E D L A T N E M. Counting from the right end: first = M, second = E, third = N, fourth = T, fifth = A, sixth = L. Hence the required letter is L.

1063. Apply the rule digit by digit to 8 4 6 3 9 2 7. $8 > 5 \Rightarrow 7$; $4 < 5 \Rightarrow 5$; $6 > 5 \Rightarrow 5$; $3 < 5 \Rightarrow 4$; $9 > 5 \Rightarrow 8$; $2 < 5 \Rightarrow 3$; $7 > 5 \Rightarrow 6$. The new number is 7 5 5 4 8 3 6. Here only the digit 5 occurs more than once (twice); every other digit occurs exactly once. Hence exactly one digit appears more than once.

1064. Rearrange the digits of each number in ascending order and check whether the three digits are consecutive. $132 \to 123$: consecutive. $546 \to 456$: consecutive. $879 \to 789$: consecutive. $213 \to 123$: consecutive. $968 \to 689$: the digits $6, 8, 9$ are not three consecutive digits, since 7 is missing. Hence 968 is the odd one out.

1065. Step 1: The nine digits $5, 3, 9, 1, 6, 8, 2, 7, 4$ arranged in ascending order give 1 2 3 4 5 6 7 8 9. Step 2: Delete every alternate digit starting from the leftmost, i.e. delete the digits in positions $1, 3, 5, 7, 9$ – these are $1, 3, 5, 7, 9$. The digits left, in order, are $2, 4, 6, 8$, forming the number 2468. Step 3: Counting from the right end of 2468: first = 8, second = 6, third = 4. Hence the required digit is 4.

1066. Rearrange the letters of each word alphabetically. BANKING gives A B G I K N N. MONITOR gives I M N O O R T. PROFITS gives F I O P R S T. LEDGERS gives D E E G L R S. CASHIER gives A C E H I R S. Now order these five groups as in a dictionary. Both A B G I K N N and A C E H I R S start with A; comparing the second letters, B < C, so A B G I K N N comes first and A C E H I R S second. The remaining groups start with D, F and I, giving D E E G L R S third, F I O P R S T fourth and I M N O O R T fifth. The third group, D E E G L R S, came from LEDGERS.

1067. Let the original amount be $100a+10b+c$, where a is the hundreds digit, b the tens digit and c the units digit. Reversing gives $100c+10b+a$. The difference is $(100c+10b+a)-(100a+10b+c) = 99(c-a)$. Given this equals 396, we get $c - a = \dfrac{396}{99} = 4$. We are told $b = 4$ and $a + b + c = 12$, so $a + c = 8$. Solving $c-a = 4$ and $a+c = 8$ gives $c = 6$ and $a = 2$. The original amount is $100(2)+10(4)+6 = 246$. Check: $642 - 246 = 396$ and $2 + 4 + 6 = 12$. Hence Rs. 246.

1068. Original digits by position: 1:4, 2:7, 3:1, 4:9, 5:5, 6:2, 7:8, 8:6, 9:3. After the given interchanges: position 1 gets 5, position 2 gets 2, position 3 gets 8, position 4 gets 6, position 5 gets 4, position 6 gets 7, position 7 gets 1, position 8 gets 9, position 9 stays 3. The new arrangement is 5 2 8 6 4 7 1 9 3. The third digit from the left is 8 (position 3). Four places to its right is position $3+4 = 7$, which holds the digit 1.

1069. The letters of PRODUCTIVE in order are P, R, O, D, U, C, T, I, V, E. The vowels are O, U, I, E and the remaining six letters are consonants. Replace each vowel by the next letter: O → P, U → V, I → J, E → F. Replace each consonant by the preceding letter: P → O, R → Q, D → C, C → B, T → S, V → U. Taking the letters in their original order, the new set is O, Q, P, C, V, B, S, J, U, F. Arranged alphabetically these become B, C, F, J, O, P, Q, S, U, V. Counting from the left: first = B, second = C, third = F, fourth = J. Hence the required letter is J. (Note that B, C, O and P all occur in the new set but none of them stands fourth, so no other option fits.)

1070. Positions in the number 7 4 9 2 6 3 8 are: 7 at 1, 4 at 2, 9 at 3, 2 at 4, 6 at 5, 3 at 6, 8 at 7. In ascending order the digits are 2 3 4 6 7 8 9, giving ranks: $2 \to 1$, $3 \to 2$, $4 \to 3$, $6 \to 4$, $7 \to 5$, $8 \to 6$, $9 \to 7$. A pair qualifies when the gap between the two digits is the same in both lists, i.e. when the difference of positions equals the difference of ranks. Testing all pairs, the qualifying ones are: $(7, 9)$ with position difference $|1 - 3| = 2$ and rank difference $|5 - 7| = 2$; $(4, 2)$ with position difference $|2 - 4| = 2$ and rank difference $|3 - 1| = 2$; and $(6, 8)$ with position difference $|5 - 7| = 2$ and rank difference $|4 - 6| = 2$. No other pair satisfies the condition. Hence there are three such pairs.

1071. In Rs. 5832 the hundreds digit is 8 and the units digit is 2. Interchanging only these two digits gives Rs. 5238 (the thousands digit 5 and the tens digit 3 are untouched). The change caused is confined to those two place values: originally they contribute $800 + 2 = 802$, and after the swap they contribute $200 + 8 = 208$. So the entered amount is smaller by $802 - 208 = 594$. Directly, $5832 - 5238 = 594$. Hence the amount entered is less by Rs. 594.