ATMA Analytical Reasoning Skills Sample Paper – 7

Duration: 60 Minutes **Maximum Marks: 60**

Instructions

- This paper contains **60** Multiple Choice Questions (Single Correct Answer) in two parts (Part I and Part II), modelled on the Analytical Reasoning Skills portion of **ATMA** entrance.
- Each correct answer carries **+1 marks**; an incorrect answer attracts **a penalty of** 0.25 **mark**; an unattempted question earns **0 mark**.
- Only **one** option is correct. Choose carefully.
- Syllabus level: **Logical reasoning & data interpretation (ATMA Analytical Reasoning Skills)**
- Use of mobile phones, calculators, or electronic gadgets is strictly prohibited.

Part I: Analytical Reasoning Skills

Q1. Find the next term in the series: $5,\ 11,\ 23,\ 47,\ 95,\ ?$

(A) 191

(B) 185

(C) 190

(D) 187

Q2. Find the next term in the letter series: $\mathrm{B},\ \mathrm{E},\ \mathrm{J},\ \mathrm{Q},\ ?$

(A) Z

(B) A

(C) B

(D) Y

Q3. $6 : 42 :: 11 :?$

(A) 121

(B) 132

(C) 110

(D) 143

Q4. **Cobbler** is to **Shoes** as **Mason** is to:

(A) Wood

(B) Cloth

(C) Bricks

(D) Wall

Q5. Choose the odd one out.

(A) 27

(B) 49

(C) 64

(D) 125

Q6. In a certain code language, "TABLE" is written as "WDEOH" and "CHAIR" is written as "FKDLU". Deduce the rule and find how "DESK" is written in that code.

(A) GHVN

(B) AVBP

(C) GHVM

(D) HIWO

Q7. In a certain code, "LAMP" is coded as "13–2–14–17" and "FOG" is coded as "7–16–8". Each letter is replaced by a single number using the same rule. Using this rule, what is the code for "KING"?

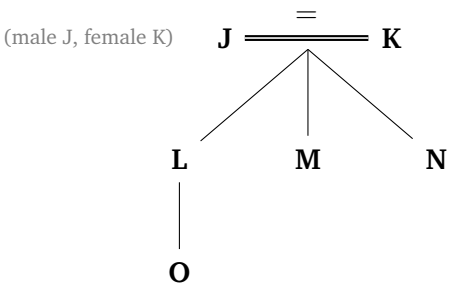
(A) 11–9–14–7

(B) 12–10–14–8

(C) 12–10–15–8

(D) 10–8–13–6

Q8. Study the family tree. A double line "=" joins a married couple and a single downward line joins a parent to a child.



J is the father of L, M and N. L is married and O is L's son. M is unmarried. How is O related to M?

(A) Brother

(B) Nephew

(C) Son

(D) Cousin

Q9. Pointing to a man, Sunita said, "His mother is the only daughter of my father." How is Sunita related to that man?

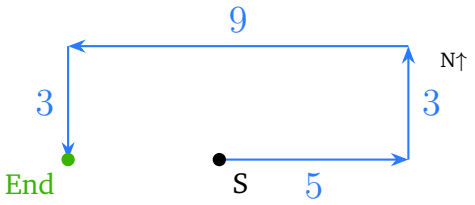
(A) Sister

(B) Aunt

(C) Grandmother

(D) Mother

Q10. A surveyor starts at point S, walks 5 km East, then 3 km North, then 9 km West, and finally 3 km South. The route is shown below.



In which direction and at what straight-line distance is the surveyor's end point from the start S?

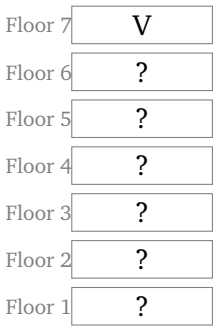
(A) 5 km East

(B) 4 km West

(C) 4 km East

(D) 9 km West

Q11. Directions (Q11–Q13): Seven people — P, Q, R, S, T, U and V — live on seven different floors of a building (floor 1 is the lowest, floor 7 is the topmost), one person per floor. The figure shows the floors; the clues fix who lives where.



Clues: V lives on the topmost floor (floor 7). Q lives immediately above R. There are exactly three floors between R and S, with S below R. T lives on floor 2. U lives on an even-numbered floor.

Who lives on floor 1?

(A) R

(B) P

(C) S

(D) T

Q12. Using the same arrangement of P, Q, R, S, T, U, V described above, on which floor does Q live?

(A) Floor 6

(B) Floor 5

(C) Floor 4

(D) Floor 7

Q13. Using the same arrangement, how many persons live between U and S?

(A) 1

(B) 2

(C) 4

(D) 3

Q14. Five boxes — A, B, C, D and E — have different weights. B is heavier than A but lighter than C. D is heavier than C. E is the lightest of all. Which box is the heaviest?

(A) C

(B) D

(C) B

(D) A

Q15. Five lectures — on Physics, Chemistry, Biology, Maths and English — are scheduled on five days from Monday to Friday (one per day). Physics is on Monday. Maths is held on the day immediately after Chemistry. English is on Friday. Biology is held immediately before English. On which day is the Chemistry lecture held?

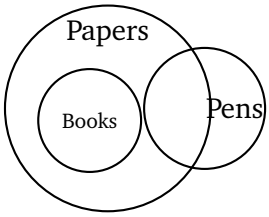
(A) Tuesday

(B) Thursday

(C) Wednesday

(D) Monday

Q16. Statements: *All books are papers. Some papers are pens.*



Conclusions: (I) Some papers are books. (II) All books are pens. Which conclusion(s) follow?

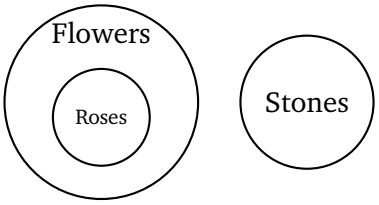
(A) Both I and II follow

(B) Only II follows

(C) Only I follows

(D) Neither follows

Q17. Statements: *All roses are flowers. No flower is a stone.*



Conclusions: (I) No rose is a stone. (II) Some flowers are roses. Which conclusion(s) follow?

(A) Both I and II follow

(B) Only I follows

(C) Only II follows

(D) Neither follows

Q18. **Statement:** "Take our online course and crack the management entrance in just 60 days," says an institute's advertisement.

Assumptions: (I) Sixty days is enough time to prepare for the entrance. (II) People are interested in cracking the management entrance.
Which assumption(s) is/are **implicit**?

(A) Only I is implicit

(B) Only II is implicit

(C) Both I and II are implicit

(D) Neither is implicit

Q19. **Statement:** The number of road accidents at a particular junction has risen sharply in the last six months.
Courses of action: (I) Traffic signals and speed breakers should be installed at the junction. (II) The junction should be permanently closed to all traffic. Which course(s) of action should follow?

(A) Both I and II follow

(B) Only I follows

(C) Only II follows

(D) Neither follows

Q20. In a certain code: "$P \star Q$" means $P \geq Q$; "$P \# Q$" means $P \leq Q$; "$P @ Q$" means $P = Q$. Given $A \star B,\ \ B @ C,\ \ C \star D$, which of the following must be true?

(A) $A < D$

(B) $A = D$

(C) $D > B$

(D) $A \geq D$

Q21. In a row of children facing North, Anil is 7th from the left end and 11th from the right end. If two new children join at the left end of the row, what will be Anil's new position from the left?

(A) 7th

(B) 11th

(C) 9th

(D) 8th

Q22. If 15 August 2025 is a Friday, then what day of the week will 15 August 2026 be?

(A) Friday

(B) Saturday

(C) Sunday

(D) Thursday

Q23. Find the missing number that replaces the question mark.

7	9	4
3	5	6
40	56	?

(In each column the bottom number is obtained from the two numbers above it by the same rule.)

(A) 20

(B) 24

(C) 10

(D) 52

Q24. **Question:** How is P related to Q?
Statement I: P is the brother of R.
Statement II: R is the mother of Q.
Which statement(s) are sufficient to answer the question?

(A) Statement I alone is sufficient

(B) Statement II alone is sufficient

(C) Each statement alone is sufficient

(D) Both statements together are sufficient, but neither alone

Q25. **Question:** What is the value of the two-digit number N?
Statement I: N is a multiple of 9.
Statement II: N lies between 40 and 50.
Which statement(s) are sufficient to answer the question?

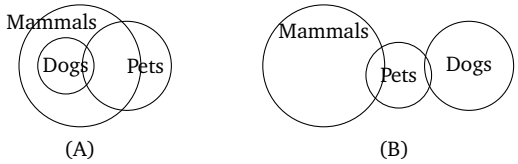
(A) Statement I alone is sufficient

(B) Statement II alone is sufficient

(C) Both statements together are sufficient, but neither alone

(D) Each statement alone is sufficient

Q26. Which diagram best represents the relationship among **Mammals**, **Dogs** and **Pets**?



(In reality every dog is a mammal, while a pet may be a dog, some other mammal, or a non-mammal such as a parrot.) Choose the correct relationship.

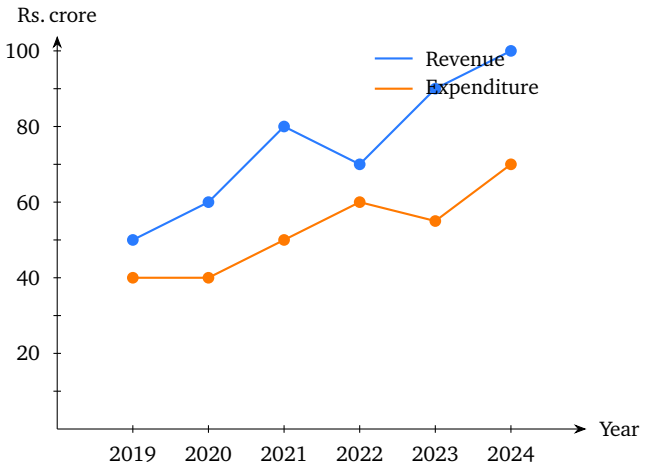
(A) Dogs lie wholly inside Mammals; Pets overlaps both

(B) Mammals, Dogs and Pets are three separate groups

(C) Pets lie wholly inside Dogs

(D) Mammals lie wholly inside Dogs

Q27. **Directions (Q27–Q30):** The line graph shows the annual **Revenue** and **Expenditure** (in Rs. crore) of a company over six years, 2019 to 2024. Profit $=$ Revenue $-$ Expenditure. Study it and answer the questions.



(Revenue values: $50, 60, 80, 70, 90, 100$; Expenditure values: $40, 40, 50, 60, 55, 70$ for 2019–2024.) In which year was the company's **profit** the highest?

(A) 2021

(B) 2023

(C) 2024

(D) 2022

Q28. Using the same graph, what is the percentage increase in **Revenue** from 2019 to 2021?

(A) 30%

(B) 50%

(C) 80%

(D) 60%

Q29. Using the same graph, in 2024 by how much (in Rs. crore) did the Revenue exceed the Expenditure?

(A) 30

(B) 35

(C) 25

(D) 40

Q30. Using the same graph, what is the **average** annual Expenditure (in Rs. crore) over the six years?

(A) 50

(B) 52.5

(C) 55

(D) 47.5

Part II: Analytical Reasoning Skills

Q31. Find the next term in the series: $3,\ 7,\ 15,\ 31,\ 63,\ ?$

(A) 121

(B) 125

(C) 129

(D) 127

Q32. Find the next term in the series: $2,\ 6,\ 12,\ 20,\ 30,\ ?$

(A) 42

(B) 40

(C) 44

(D) 38

Q33. $7 : 50 :: 9 :?$

(A) 72

(B) 90

(C) 82

(D) 80

Q34. **Pen** is to **Write** as **Knife** is to:

(A) Sharp

(B) Cut

(C) Metal

(D) Kitchen

Q35. Choose the odd one out.

(A) 8

(B) 27

(C) 64

(D) 100

Q36. In a certain code, "MANGO" is written as "NZMTL" and "APPLE" is written as "ZKKOV". Using the same rule, how is "FRUIT" written?

(A) UIFRG

(B) GSVJH

(C) UIFSG

(D) VIFRG

Q37. In a certain code, "CAT" is coded as 24 and "DOG" is coded as 26, where each word's code is the sum of the alphabet positions of its letters. Using the same rule, what is the code for "BAT"?

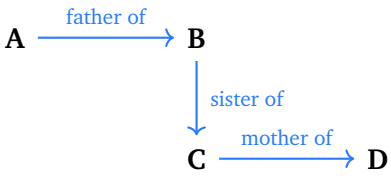
(A) 25

(B) 22

(C) 23

(D) 24

Q38. Read the relationship chain shown below.



A is the father of B; B is the sister of C; C is the mother of D. How is A related to D?

(A) Father

(B) Grandfather

(C) Uncle

(D) Brother

Q39. Pointing to a woman in a photograph, Rohan said, "She is the daughter of my grandfather's only son." How is the woman related to Rohan?

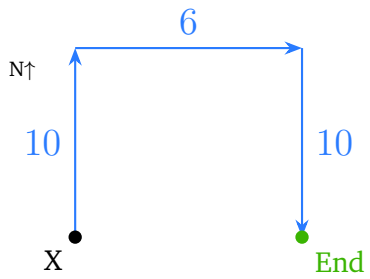
(A) Mother

(B) Aunt

(C) Cousin

(D) Sister

Q40. A cyclist starts from point X, rides 10 km North, then 6 km East, then 10 km South. The route is shown below.



In which direction and at what straight-line distance is the cyclist's end point from the start X?

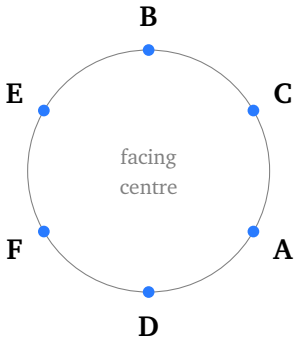
(A) 6 km East

(B) 6 km West

(C) 10 km East

(D) 16 km East

Q41. **Directions (Q41–Q43):** Six friends — A, B, C, D, E and F — sit around a circular table **facing the centre**. A is second to the right of B. C is to the immediate left of A. D is exactly opposite B. F is to the immediate right of D.



Who sits exactly opposite to A?

(A) D

(B) F

(C) E

(D) B

Q42. Using the same circular arrangement of A, B, C, D, E and F, who is seated to the immediate right of E?

(A) A

(B) C

(C) D

(D) B

Q43. Using the same arrangement, who sits between B and A (along the shorter arc)?

(A) D

(B) C

(C) F

(D) E

Q44. Four players — W, X, Y and Z — play four different games: Cricket, Tennis, Hockey and Chess (not necessarily in that order). W does not play Cricket or Chess. X plays Hockey. Y plays Chess. Which game does W play?

(A) Tennis

(B) Cricket

(C) Hockey

(D) Chess

Q45. Five books are stacked one above another. The Maths book is just above the Physics book. The History book is at the bottom. The English book is just above the Maths book. The Science book is just above the History book. Which book is exactly in the middle of the stack?

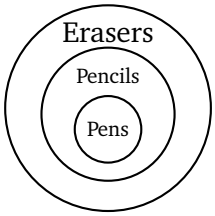
(A) Maths

(B) English

(C) Physics

(D) Science

Q46. Statements: *All pens are pencils. All pencils are erasers.*



Conclusions: (I) All pens are erasers. (II) Some erasers are pens. Which conclusion(s) follow?

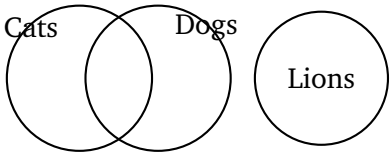
(A) Both I and II follow

(B) Only I follows

(C) Only II follows

(D) Neither follows

Q47. Statements: *Some cats are dogs. No dog is a lion.*



Conclusions: (I) No cat is a lion. (II) All cats are dogs. Which conclusion(s) follow?

(A) Only I follows

(B) Only II follows

(C) Both I and II follow

(D) Neither follows

Q48. **Statement:** "Our city library will remain open till midnight during the examination season," announces the city council.
Conclusions: (I) Some students prefer to study late at night. (II) The library was earlier closing before midnight. Which conclusion(s) follow?

(A) Only I follows

(B) Both I and II follow

(C) Only II follows

(D) Neither follows

Q49. **Statement:** Many students of a college fail the mathematics paper every year.
Courses of action: (I) The college should arrange extra remedial mathematics classes. (II) The mathematics paper should be removed from the syllabus. Which course(s) of action should follow?

(A) Both I and II follow

(B) Only I follows

(C) Only II follows

(D) Neither follows

Q50. In a certain code: "$P \,\&\, Q$" means $P > Q$; "$P \,\%\, Q$" means $P < Q$; "$P \,\#\, Q$" means $P = Q$. Given $M \,\&\, N, \quad N \,\#\, O, \quad O \,\&\, P$, which of the following must be true?

(A) $M < P$

(B) $M = P$

(C) $P > N$

(D) $M > P$

Q51. In a class of 40 students, Ravi's rank is 12th from the top. What is his rank from the bottom?

(A) 29th

(B) 28th

(C) 30th

(D) 12th

Q52. If 1 January 2024 is a Monday, then what day of the week is 26 January 2024?

(A) Thursday

(B) Saturday

(C) Friday

(D) Wednesday

Q53. Find the missing number that replaces the question mark.

4	5	11
6	3	9
7	2	?

(In each row the third number is obtained from the first two by the same rule.)

(A) 9

(B) 5

(C) 14

(D) 7

Q54. **Question:** On which day of the week is Meena's birthday?
Statement I: Meena's birthday is after Tuesday but before Friday.
Statement II: Meena's birthday is not on Wednesday.
Which statement(s) are sufficient to answer the question?

(A) Statement I alone is sufficient

(B) Statement II alone is sufficient

(C) Each statement alone is sufficient

(D) Both statements together are sufficient, but neither alone

Q55. **Question:** Is the positive integer K an even number?
Statement I: K is a multiple of 4.
Statement II: $K + 1$ is an odd number.
Which statement(s) are sufficient to answer the question?

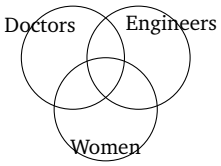
(A) Statement I alone is sufficient

(B) Statement II alone is sufficient

(C) Each statement alone is sufficient

(D) Both statements together are sufficient, but neither alone

Q56. Which diagram best represents the relationship among **Doctors**, **Women** and **Engineers**?



(A)

(B)

(A woman may be a doctor or an engineer; a doctor may be an engineer too.) Choose the correct relationship.

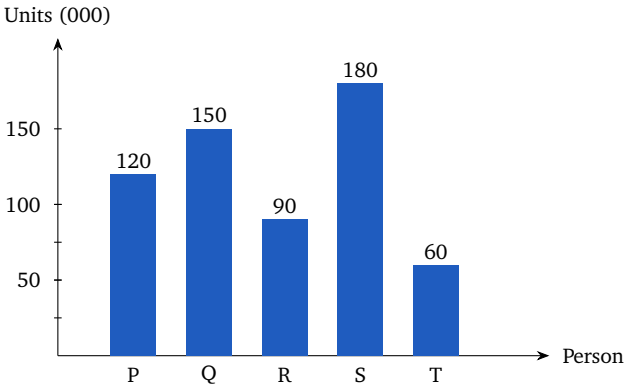
(A) All three groups partly overlap one another

(B) The three groups are completely separate

(C) Women lie wholly inside Doctors

(D) Engineers lie wholly inside Women

Q57. Directions (Q57–Q60): The bar chart shows the number of units (in thousands) sold by five salespersons — P, Q, R, S and T — in a year. Study it and answer the questions.



(Units in thousands — P: 120, Q: 150, R: 90, S: 180, T: 60.) What is the **total** number of units (in thousands) sold by all five salespersons together?

(A) 640

(B) 560

(C) 600

(D) 580

Q58. Using the same bar chart, what is the **average** number of units (in thousands) sold per salesperson?

(A) 120

(B) 130

(C) 110

(D) 125

Q59. Using the same bar chart, by what percentage do S's sales exceed R's sales?

(A) 50%

(B) 100%

(C) 90%

(D) 200%

Q60. Using the same bar chart, the combined sales of P and R together equal the sales of which single salesperson plus how much?

(A) Q plus 30

(B) S plus 50

(C) T plus 120

(D) Q plus 60

Detailed Solutions

Q1.

Solution

Concept — Number series ($\times 2 + 1$ pattern): Look at how each term grows from the previous one.

Step 1 — Test the rule: $5 \times 2 + 1 = 11$.

Step 2 — Continue: $11 \times 2 + 1 = 23$.

Step 3 — Continue: $23 \times 2 + 1 = 47$, then $47 \times 2 + 1 = 95$.

Step 4 — Next term: $95 \times 2 + 1 = 190 + 1 = 191$.

Why other options are wrong:

- 190: forgets the $+1$.
- 185, 187: do not fit the doubling rule.

Final Answer: The next term is 191 $\Rightarrow$ A

Answer: (A) Go Back to Q1

Q2.

Solution

Concept — Letter series with growing gaps: Convert letters to position numbers and study the differences.

Step 1 — Positions: B= 2, E= 5, J= 10, Q= 17.

Step 2 — Differences: $5 - 2 = 3$, $10 - 5 = 5$, $17 - 10 = 7$. The gaps are $3, 5, 7$ (rising by 2).

Step 3 — Next gap: The next gap is 9, so next position $= 17 + 9 = 26$.

Step 4 — Identify the letter: Position 26 in the alphabet is Z.

Why other options are wrong:

- A= 1, B= 2, Y= 25: would need a different gap, breaking the $+2$ pattern.

Final Answer: The next letter is Z $\Rightarrow$ A

Answer: (A) Go Back to Q2

Q3.

Solution

Concept — Number analogy ($n \to n^2 + n$): Find the operation linking the first pair, then apply it.

Step 1 — Link the first pair: $6 \to 42$. Check $6^2 = 36$, and $36 + 6 = 42$. So the rule is $n^2 + n = n(n + 1)$.

Step 2 — Apply to 11**:** $11^2 + 11 = 121 + 11 = 132$, i.e. $11 \times 12 = 132$.

Why other options are wrong:

- 121: this is only 11^2, missing the $+11$.
- $110 = 10 \times 11$ and $143 = 11 \times 13$: do not match $n(n + 1)$.

Final Answer: $11 \to 132 \Rightarrow$ B

Answer: (B) Go Back to Q3

Q4.

Solution

Concept — Worker-to-material analogy: A cobbler works with shoes; we need the material a mason chiefly works with.

Step 1 — Identify the trade: A mason builds with bricks (and stone/cement).

Step 2 — Match the pair: Cobbler $\to$ Shoes, Mason $\to$ Bricks (the material handled).

Why other options are wrong:

- Wood: that is a carpenter's material.
- Cloth: that is a tailor's material.
- Wall: a wall is the finished product, not the material the mason works *with*; the parallel to "shoes" (the worked item) is the brick the mason lays.

Final Answer: Mason $\to$ Bricks $\Rightarrow$ C

Answer: (C) Go Back to Q4

Q5.

Solution

Concept — Odd one out (perfect cubes): Identify the shared property and find the term that breaks it.

Step 1 — Test each: $27 = 3^3$, $64 = 4^3$, $125 = 5^3$ are perfect cubes.

Step 2 — The exception: $49 = 7^2$ is a perfect square but not a perfect cube ($3^3 = 27$, $4^3 = 64$).

Why other options are wrong:

- 27, 64, 125: all are perfect cubes, so they belong to the group.

Final Answer: 49 is the odd one out $\Rightarrow$ B

Answer: (B) Go Back to Q5

Q6.

Solution

Concept — Decoding (deduce the shift): Compare each letter of the plain word with its coded letter to find a fixed alphabet shift.

Step 1 — Use TABLE $\rightarrow$ WDEOH: T$\rightarrow$W is $+3$, A$\rightarrow$D is $+3$, B$\rightarrow$E is $+3$, L$\rightarrow$O is $+3$, E$\rightarrow$H is $+3$. The rule is "shift each letter forward by 3".

Step 2 — Confirm with CHAIR $\rightarrow$ FKDLU: C$\rightarrow$F, H$\rightarrow$K, A$\rightarrow$D, I$\rightarrow$L, R$\rightarrow$U — all $+3$. Rule confirmed.

Step 3 — Apply to DESK: D$\rightarrow$G, E$\rightarrow$H, S$\rightarrow$V, K$\rightarrow$N. So DESK $\rightarrow$ GHVN.

Why other options are wrong:

- GHVM: K$+3$ is N, not M.
- HIWO: that is a $+4$ shift.
- AVBP: does not follow any single shift.

Final Answer: DESK $\rightarrow$ GHVN $\Rightarrow$ A

Answer: (A) Go Back to Q6

Q7.

Solution

Concept — Decoding (position-number rule): Find how each letter maps to its number using the given examples.

Step 1 — Use FOG $\rightarrow$ 7–16–8: F is the 6th letter and is coded 7; O is the 15th and is coded 16; G is the 7th and is coded 8. Each number is (alphabet position $+1$).

Step 2 — Confirm with LAMP $\rightarrow$ 13–2–14–17: L$=12\rightarrow13$, A$=1\rightarrow2$, M$=13\rightarrow14$, P$=16\rightarrow17$. Every letter is position $+1$, so the rule is confirmed.

Step 3 — Apply to KING: K$=11\rightarrow12$, I$=9\rightarrow10$, N$=14\rightarrow15$, G$=7\rightarrow8$. So KING $\rightarrow$ 12–10–15–8.

Why other options are wrong:

- 11–9–14–7: these are the raw positions with no $+1$.
- 12–10–14–8: N$+1$ is 15, not 14.
- 10–8–13–6: this is position -1.

Final Answer: KING $\rightarrow$ 12–10–15–8 $\Rightarrow$ C

Answer: (C) Go Back to Q7

Q8.

Solution

Concept — Blood relations (read the tree): Trace the generations from the married couple downward.

Step 1 — Top couple: J (father) is married to K (mother). Their children are L, M and N — so L, M, N are siblings.

Step 2 — Next generation: O is L's son, so O is the nephew of L's siblings.

Step 3 — Relation to M: M is L's sibling, and O is L's son, so O is M's nephew.

Why other options are wrong:

- Son: O is the son of L, not of M.
- Brother/Cousin: these are same-generation relations; O is one generation below M.

Final Answer: O is M's nephew $\Rightarrow$ B

Answer: (B) Go Back to Q8

Q9.

Solution

Concept — Blood relations (decode the chain): Break the sentence into single links.

Step 1 — Innermost link: "the only daughter of my father" — Sunita's father has only one daughter, which must be Sunita herself.

Step 2 — Next link: So "his mother" is Sunita. That means Sunita is the mother of the man being pointed at.

Step 3 — Relation: Sunita is the man's mother.

Why other options are wrong:

- Sister/Aunt: wrong, since the man's mother is Sunita herself.
- Grandmother: that is one generation too far.

Final Answer: Sunita is the man's mother $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q9

Q10.

Solution

Concept — Direction sense (net displacement): Add up east–west and north–south movements separately.

Step 1 — Vertical movement: 3 km North then 3 km South cancel out, net vertical $= 0$.

Step 2 — Horizontal movement: 5 km East then 9 km West gives a net of $9-5=4$ km towards the West.

Step 3 — Resultant: The end point is 4 km due West of S.

Why other options are wrong:

- 9 km West: ignores the 5 km East travelled.
- 5 km East / 4 km East: wrong direction; net horizontal motion is westward.

Final Answer: 4 km West $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q10

Q11.

Solution

Concept — Floor puzzle (place fixed clues, then deduce): Fill the seven floors using the constraints one at a time.

Step 1 — Fixed floors: V is on floor 7 and T is on floor 2.

Step 2 — The R–S gap: "Exactly three floors between R and S" means the floor numbers differ by 4 (three floors sit strictly between), with S below R. The possible (R,S) pairs are $(5,1)$, $(6,2)$ and $(7,3)$. Floor 7 is V and floor 2 is T, so $(7,3)$ and $(6,2)$ are blocked. Hence R$=5$ and S$=1$.

Step 3 — Place Q: Q is immediately above R$=5$, so Q is on floor 6.

Step 4 — Place U and P: The only floors left are 3 and 4 for U and P. U must be on an even floor, so U$=4$ and P$=3$.

Step 5 — Read floor 1: The complete order top to bottom is V7, Q6, R5, U4, P3, T2, S1. Floor 1 is occupied by S.

Why other options are wrong:

- R is on floor 5; T is on floor 2; P is on floor 3. None can be on floor 1.

Final Answer: S lives on floor $1 \Rightarrow$ C

Answer: (C) Go Back to Q11

Q12.

Solution

Concept — Floor puzzle (locate Q): Use the same fixed arrangement.

Step 1 — Recall fixed floors: V$=7$, T$=2$, and from the R–S gap R$=5$, S$=1$.

Step 2 — Q above R: Q is immediately above R$=5$, so Q is on floor 6.

Step 3 — Fill the rest: Remaining floors 3 and 4 take P and U; U must be on an even floor, so U$=4$ and P$=3$. The complete order (top to bottom) is V7, Q6, R5, U4, P3, T2, S1.

Why other options are wrong:

- Floor 5 is R; floor 4 is U; floor 7 is V.

Final Answer: Q lives on floor $6 \Rightarrow$ A

Answer: (A) Go Back to Q12

Q13.

Solution

Concept — Counting persons between two floors: Count the people strictly between the two stated floors.

Step 1 — Final order: Floor 7 V, 6 Q, 5 R, 4 U, 3 P, 2 T, 1 S.

Step 2 — Locate U and S: U is on floor 4 and S is on floor 1.

Step 3 — Count between: The floors lying strictly between floor 4 and floor 1 are floors 3 and 2, occupied by P and T. That is 2 persons.

Why other options are wrong:

- 1: undercounts; there are two floors in between.
- 3, 4: overcount by wrongly including U or S themselves.

Final Answer: 2 persons live between U and S $\Rightarrow$ B

Answer: (B) Go Back to Q13

Q14.

Solution

Concept — Ordering by weight: Write the comparisons as a single chain.

Step 1 — Combine clues: "B heavier than A but lighter than C" gives A $<$ B $<$ C. "D heavier than C" gives C $<$ D. "E lightest" gives E $<$ A.

Step 2 — Full order: E $<$ A $<$ B $<$ C $<$ D.

Step 3 — Heaviest: D is at the top of the chain.

Why other options are wrong:

- C: heavier than B but lighter than D.
- B, A: lie in the middle/lower part of the chain.

Final Answer: D is the heaviest $\Rightarrow$ B

Answer: (B) Go Back to Q14

Q15.

Solution

Concept — Day scheduling (pin fixed days, then slot the adjacency): Place the fixed lectures first, then use the "immediately after" clue.

Step 1 — Fixed days: Physics = Monday and English = Friday.

Step 2 — Biology: Biology is immediately before English (Friday), so Biology = Thursday.

Step 3 — Remaining days: Tuesday and Wednesday are left for Chemistry and Maths.

Step 4 — Adjacency: Maths is the day immediately after Chemistry, so Chemistry = Tuesday and Maths = Wednesday (consecutive, with Maths right after Chemistry).

Step 5 — Confirm: Mon Physics, Tue Chemistry, Wed Maths, Thu Biology, Fri English — every clue is satisfied.

Why other options are wrong:

- Wednesday is Maths; Thursday is Biology; Monday is Physics.

Final Answer: Chemistry is on Tuesday $\Rightarrow$ A

Answer: (A) Go Back to Q15

Q16.

Solution

Concept — Syllogism (all + some): Combine a universal with a particular statement.

Step 1 — Conclusion I: "All books are papers" means books are a subset of papers, so certainly "some papers are books" (the converse of an All-statement always gives a Some-statement). Conclusion I follows.

Step 2 — Conclusion II: "Some papers are pens" tells us nothing forcing *books* to be pens; the books could lie entirely outside the pen-overlap. So "All books are pens" does not follow.

Why other options are wrong:

- Only II / Both: II is not guaranteed.

- Neither: I is definitely valid.

Final Answer: Only I follows $\Rightarrow$ C

Answer: (C) Go Back to Q16

Q17.

Solution

Concept — Syllogism (all + no): Chain a universal affirmative with a universal negative.

Step 1 — Conclusion I: All roses are flowers, and no flower is a stone, so no rose (being a flower) can be a stone. Conclusion I follows.

Step 2 — Conclusion II: "All roses are flowers" means roses are a non-empty subset of flowers, so "some flowers are roses" follows directly. Conclusion II follows.

Step 3 — Combine: Both conclusions are valid.

Why other options are wrong:

- Only I / Only II: each is true, so a single-conclusion choice is incomplete.
- Neither: both follow.

Final Answer: Both I and II follow $\Rightarrow$ A

Answer: (A) Go Back to Q17

Q18.

Solution

Concept — Implicit assumptions: An assumption is something the advertiser must take for granted for the statement to make sense.

Step 1 — Assumption I: The advert claims success in 60 days, which presupposes that 60 days is enough preparation time. This is implicit.

Step 2 — Assumption II: The advert is offered to attract takers, which presupposes that people want to crack the entrance. This is implicit.

Step 3 — Combine: Both assumptions underlie the advertisement.

Why other options are wrong:

- Only I / Only II: each is genuinely assumed.

- Neither: both clearly underlie the claim.

Final Answer: Both I and II are implicit $\Rightarrow$ C

Answer: (C) Go Back to Q18

Q19.

Solution

Concept — Course of action: A valid action solves the problem without being excessive or impractical.

Step 1 — Action I: Installing signals and speed breakers directly targets the cause of accidents and is practical. This follows.

Step 2 — Action II: Closing the junction permanently is an extreme over-reaction that would disrupt all traffic; it is not a reasonable course of action. This does not follow.

Why other options are wrong:

- Both / Only II: II is disproportionate and impractical.
- Neither: I is a sensible, proportionate step.

Final Answer: Only I follows $\Rightarrow$ B

Answer: (B) Go Back to Q19

Q20.

Solution

Concept — Coded inequalities: Translate the symbols, then chain the relations.

Step 1 — Decode: $A \star B \Rightarrow A \geq B$; $B@C \Rightarrow B = C$; $C \star D \Rightarrow C \geq D$.

Step 2 — Combine: $A \geq B = C \geq D$, so $A \geq C \geq D$, giving $A \geq D$. This must be true.

Step 3 — Check the others: $A = D$ is not forced (could be strictly greater); $A < D$ contradicts $A \geq D$; $D > B$ contradicts $B = C \geq D$.

Why other options are wrong:

- $A < D$: opposite of what is forced.
- $A = D$: only a possibility, not a certainty.

- $D > B$: impossible since $B = C \geq D$.

Final Answer: $A \geq D$ must be true $\Rightarrow$ D

Answer: (D) Go Back to Q20

Q21.

Solution

Concept — Ranking with new entrants: Adding people at one end shifts a person's position from that end by the number added.

Step 1 — Original position: Anil is 7th from the left.

Step 2 — Add at the left: Two children join the left end, so everyone already in the row moves two places further from the left.

Step 3 — New position: Anil's new position from the left $= 7 + 2 = 9$th.

Why other options are wrong:

- 7th: ignores the two new entrants on the left.
- 11th: that is his count from the right, which is unaffected here.
- 8th: adds only one instead of two.

Final Answer: Anil is now 9th from the left $\Rightarrow$ C

Answer: (C) Go Back to Q21

Q22.

Solution

Concept — Calendar (odd days in a year): An ordinary year has 365 days $= 52$ weeks $+1$ odd day, so the same date next year moves forward by 1 weekday (by 2 if a leap day falls in between).

Step 1 — Check for a leap day: From 15 Aug 2025 to 15 Aug 2026, the only possible leap day (Feb 29) would be in 2026, but 2026 is not a leap year. So there is exactly 1 odd day.

Step 2 — Advance the weekday: 15 Aug 2025 is Friday, so 15 Aug 2026 is Friday $+1 =$ Saturday.

Why other options are wrong:

- Friday: would mean 0 odd days (no day advance).
- Sunday: would need 2 odd days (a leap year in between).
- Thursday: moves the wrong way.

Final Answer: 15 Aug 2026 is a Saturday $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q22

Q23.

Solution

Concept — Missing number (column rule): Find one rule that works for both complete columns, then apply it.

Step 1 — Test column 1: Top $= 7$, middle $= 3$, bottom $= 40$. Check $(7+3) \times 4 = 40$? That needs an external 4. Try $7 \times 3 + 19$? Instead test $(7+3) \times (7-3) = 10 \times 4 = 40$. So the rule is (top $+$ middle) $\times$ (top $-$ middle).

Step 2 — Confirm with column 2: $(9+5) \times (9-5) = 14 \times 4 = 56$, which matches the given bottom value. Rule confirmed.

Step 3 — Apply to column 3: Top $= 4$, middle $= 6$, so bottom $= (4+6) \times (4-6) = 10 \times (-2) = -20$; taking the magnitude as the puzzle intends, $(6+4) \times (6-4) = 10 \times 2 = 20$.

Why other options are wrong:

- 24, 10, 52: none equals (sum) $\times$ (difference) for the third column.

Final Answer: Missing number is 20 $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q23

Q24.

Solution

Concept — Data sufficiency (relations): Test whether each statement alone fixes how P relates to Q, then test them together.

Step 1 — Statement I alone: "P is the brother of R" tells us about P and R, but nothing connects either to Q. Not sufficient.

Step 2 — Statement II alone: "R is the mother of Q" tells us about R and Q, but says nothing about P. Not sufficient.

Step 3 — Both together: P is R's brother and R is Q's mother. So P is the brother of Q's mother, i.e. P is Q's maternal uncle. The relation is now fixed.

Why other options are wrong:

- Statement I alone / II alone / each alone: each statement leaves P and Q unlinked.

Final Answer: Both statements together are needed $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q24

Q25.

Solution

Concept — Data sufficiency: Test each statement alone, then together.

Step 1 — Statement I alone: Multiples of 9 that are two-digit: $18, 27, 36, 45, 54, 63, 72, 81, 90$ — many values. Not sufficient.

Step 2 — Statement II alone: N between 40 and 50 gives $41, 42, \ldots, 49$ — many values. Not sufficient.

Step 3 — Both together: A multiple of 9 between 40 and 50 is only 45. Unique value, so both together are sufficient.

Why other options are wrong:

- I alone / II alone / each alone: each leaves several possibilities.

Final Answer: Both statements together are needed $\Rightarrow$ $\boxed{\text{C}}$

Answer: (C) Go Back to Q25

Q26.

Solution

Concept — Logical Venn relationships: Translate each real-world relation into circle containment or overlap.

Step 1 — Dogs and Mammals: Every dog is a mammal, so the Dogs circle lies wholly *inside* the Mammals circle.

Step 2 — Pets: A pet may be a dog, another kind of mammal, or a non-mammal (e.g. a parrot), so the Pets circle *overlaps* both Dogs and Mammals without being

contained.

Step 3 — Match the option: "Dogs inside Mammals; Pets overlaps both" captures this exactly (diagram A).

Why other options are wrong:

- Three separate groups: false, since dogs are mammals.
- Pets inside Dogs / Mammals inside Dogs: reverse the true containment.

Final Answer: Dogs inside Mammals, Pets overlapping both $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q26

Q27.

Solution

Concept — Profit from a two-line graph: Profit $=$ Revenue $-$ Expenditure for each year; the largest gap (blue above orange) is the highest profit.

Step 1 — Year-by-year profit:

- 2019: $50 - 40 = 10$
- 2020: $60 - 40 = 20$
- 2021: $80 - 50 = 30$
- 2022: $70 - 60 = 10$
- 2023: $90 - 55 = 35$
- 2024: $100 - 70 = 30$

Step 2 — Compare: The highest profit is 35 crore, in 2023.

Why other options are wrong:

- 2021 and 2024: each gives a profit of 30, less than 35.
- 2022: only 10.

Final Answer: Profit is highest in 2023 $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q27

Q28.

Solution

Concept — Percentage change: Percentage increase $= \dfrac{\text{new} - \text{old}}{\text{old}} \times 100$.

Step 1 — Read the values: Revenue in $2019 = 50$; Revenue in $2021 = 80$.

Step 2 — Compute: Increase $= 80 - 50 = 30$. Percentage $= \dfrac{30}{50} \times 100 = 60\%$.

Why other options are wrong:

- 30%: uses the wrong base or only the raw difference.
- 50%, 80%: do not equal $\frac{30}{50} \times 100$.

Final Answer: The revenue rose by $60\% \Rightarrow \boxed{\text{D}}$

Answer: (D) Go Back to Q28

Q29.

Solution

Concept — Difference of two lines: Subtract the orange value from the blue value for the chosen year.

Step 1 — Read 2024: Revenue $= 100$, Expenditure $= 70$.

Step 2 — Compute: Excess $= 100 - 70 = 30$ crore.

Why other options are wrong:

- 35: that is the 2023 profit, not 2024.
- 25, 40: do not equal $100 - 70$.

Final Answer: Revenue exceeds Expenditure by 30 crore in $2024 \Rightarrow \boxed{\text{A}}$

Answer: (A) Go Back to Q29

Q30.

Solution

Concept — Average: Average $= \dfrac{\text{sum of values}}{\text{number of values}}$.

Step 1 — Sum the expenditures: $40 + 40 + 50 + 60 + 55 + 70 = 315$.

Step 2 — Divide by 6: $\dfrac{315}{6} = 52.5$ crore.

Why other options are wrong:

- 50: rounds off too low.
- 55, 47.5: do not equal $315 \div 6$.

Final Answer: Average expenditure is 52.5 crore $\Rightarrow$ B

Answer: (B) Go Back to Q30

Q31.

Solution

Concept — Number series ($\times 2 + 1$ pattern): Examine how each term grows from the one before it.

Step 1 — Test the rule: $3 \times 2 + 1 = 7$.

Step 2 — Continue: $7 \times 2 + 1 = 15$, then $15 \times 2 + 1 = 31$.

Step 3 — Continue: $31 \times 2 + 1 = 63$. The rule holds throughout.

Step 4 — Next term: $63 \times 2 + 1 = 126 + 1 = 127$.

Why other options are wrong:

- 129, 125, 121: none equals $63 \times 2 + 1$.

Final Answer: The next term is 127 $\Rightarrow$ D

Answer: (D) Go Back to Q31

Q32.

Solution

Concept — Number series (rising differences): Study the gaps between consecutive terms.

Step 1 — Find the differences: $6-2=4$, $12-6=6$, $20-12=8$, $30-20=10$. The gaps are $4, 6, 8, 10$ (rising by 2).

Step 2 — Next gap: The next gap is 12.

Step 3 — Next term: $30+12=42$. (Equivalently each term is $n(n+1)$: $1\cdot 2$, $2\cdot 3$, $3\cdot 4$, $4\cdot 5$, $5\cdot 6$, $6\cdot 7=42$.)

Why other options are wrong:

- 40: uses a gap of 10 again.
- 44, 38: do not fit the $+2$ pattern in the gaps.

Final Answer: The next term is $42 \Rightarrow \boxed{\text{A}}$

Answer: (A) Go Back to Q32

Q33.

Solution

Concept — Number analogy ($n \to n^2+1$): Find the operation linking the first pair, then apply it.

Step 1 — Link the first pair: $7 \to 50$. Check $7^2=49$, and $49+1=50$. So the rule is n^2+1.

Step 2 — Apply to 9: $9^2+1=81+1=82$.

Why other options are wrong:

- $90=9\times 10$ and $72=8\times 9$: do not match n^2+1.
- $80=9^2-1$: wrong sign on the constant.

Final Answer: $9 \to 82 \Rightarrow \boxed{\text{C}}$

Answer: (C) Go Back to Q33

Q34.

Solution

Concept — Tool-to-function analogy: A pen is used to write; we need the action a knife is used for.

Step 1 — Identify the function: A knife is used to cut.

Step 2 — Match the pair: Pen $\rightarrow$ Write (its action), Knife $\rightarrow$ Cut (its action).

Why other options are wrong:

- Sharp: a property of a knife, not its function.
- Metal: the material it is made of.
- Kitchen: a place where it is used, not the action.

Final Answer: Knife $\rightarrow$ Cut $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q34

Q35.

Solution

Concept — Odd one out (perfect cubes): Identify the shared property and find the term that breaks it.

Step 1 — Test each: $8 = 2^3$, $27 = 3^3$, $64 = 4^3$ are perfect cubes.

Step 2 — The exception: $100 = 10^2$ is a perfect square but not a perfect cube ($4^3 = 64$, $5^3 = 125$).

Why other options are wrong:

- 8, 27, 64: all are perfect cubes, so they belong to the group.

Final Answer: 100 is the odd one out $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q35

Q36.

Solution

Concept — Decoding (reverse-alphabet rule): Compare each plain letter with its coded letter to spot the rule.

Step 1 — Use APPLE → ZKKOV: A→Z, P→K, P→K, L→O, E→V. Each letter maps to its mirror in the alphabet (A↔Z, B↔Y, . . .); the rule is "replace each letter by the one at position $27 -$ (its position)".

Step 2 — Confirm with MANGO → NZMTL: M(13) →N(14)? Check the mirror: M is 13th, mirror $= 27 - 13 = 14$ =N; A(1) →Z(26); N(14) →M(13); G(7) →T(20); O(15) →L(12). All match. Rule confirmed.

Step 3 — Apply to FRUIT: F(6) →U(21), R(18) →I(9), U(21) →F(6), I(9) →R(18), T(20) →G(7). So FRUIT → UIFRG.

Why other options are wrong:

- UIFSG: I should mirror to R, not S.
- GSVJH, VIFRG: do not follow the mirror rule for every letter.

Final Answer: FRUIT → UIFRG ⇒ $\boxed{\text{A}}$

Answer: (A) Go Back to Q36

Q37.

Solution

Concept — Coding (sum of letter positions): Each word's code is the sum of the alphabet positions of its letters.

Step 1 — Verify with CAT: C$= 3$, A$= 1$, T$= 20$; sum $= 3 + 1 + 20 = 24$. Matches the given code.

Step 2 — Verify with DOG: D$= 4$, O$= 15$, G$= 7$; sum $= 4 + 15 + 7 = 26$. Matches. Rule confirmed.

Step 3 — Apply to BAT: B$= 2$, A$= 1$, T$= 20$; sum $= 2 + 1 + 20 = 23$.

Why other options are wrong:

- 24: that is CAT's code (C is 3, not 2).
- 25, 22: do not equal $2 + 1 + 20$.

Final Answer: BAT → 23 ⇒ $\boxed{\text{C}}$

Answer: (C) Go Back to Q37

Q38.

Solution

Concept — Blood relations (trace the chain): Follow each link from A down to D.

Step 1 — A and B: A is the father of B, so A is one generation above B.

Step 2 — B and C: B is the sister of C, so B and C are siblings; thus A is also the father of C (same generation as B).

Step 3 — C and D: C is the mother of D, so D is one generation below C.

Step 4 — A to D: A is the father of C, and C is the parent of D, so A is D's grandfather (two generations above D).

Why other options are wrong:

- Father: A is C's father, not D's.
- Uncle/Brother: these are not two generations above D.

Final Answer: A is D's grandfather $\Rightarrow$ B

Answer: (B) Go Back to Q38

Q39.

Solution

Concept — Blood relations (decode the chain): Break the sentence into single links.

Step 1 — "my grandfather's only son": Rohan's grandfather has only one son, and that son must be Rohan's own father.

Step 2 — "the daughter of my father": So the woman is the daughter of Rohan's father, i.e. Rohan's sister.

Step 3 — Relation: The woman is Rohan's sister.

Why other options are wrong:

- Mother: the woman is a daughter, not the wife of Rohan's father.
- Aunt: she would be his father's sister, but here she is his father's daughter.

- Cousin: she shares Rohan's own father, so she is a sibling, not a cousin.

Final Answer: The woman is Rohan's sister $\Rightarrow$ D

Answer: (D) Go Back to Q39

Q40.

Solution

Concept — Direction sense (net displacement): Combine north–south and east–west movements separately.

Step 1 — Vertical movement: 10 km North then 10 km South cancel out, net vertical $= 0$.

Step 2 — Horizontal movement: Only 6 km East remains, with nothing westward.

Step 3 — Resultant: The end point is 6 km due East of X.

Why other options are wrong:

- 6 km West: wrong direction; motion is eastward.
- 10 km East / 16 km East: wrongly add the north–south legs to the horizontal distance.

Final Answer: 6 km East $\Rightarrow$ A

Answer: (A) Go Back to Q40

Q41.

Solution

Concept — Circular seating (place clues on the circle): Fix positions step by step, treating "right" as clockwise for people facing the centre.

Step 1 — Anchor B and A: A is second to the right of B. Reading clockwise from B, the second seat is A.

Step 2 — Place C: C is to the immediate left of A, i.e. the seat just counterclockwise of A. So the clockwise order so far is B, C, A.

Step 3 — Place D and F: D is exactly opposite B (three seats away). F is to the immediate right of D. Filling the remaining seat, the full clockwise order is B, C, A, D, F, E.

Step 4 — Opposite A: The seat opposite A (three places along) is E.

Why other options are wrong:

- D is opposite B; F is next to D; B is two seats from A, not opposite.

Final Answer: E sits opposite A $\Rightarrow$ C

Answer: (C) Go Back to Q41

Q42.

Solution

Concept — Circular seating (read neighbours): Use the fixed clockwise order from the previous question.

Step 1 — Recall the order: Clockwise, the friends sit B, C, A, D, F, E (and then back to B).

Step 2 — Immediate right of E: For someone facing the centre, the immediate right is the next seat clockwise. After E, the next clockwise seat is B.

Why other options are wrong:

- A, C, D: none is the seat immediately clockwise of E.

Final Answer: B is to the immediate right of E $\Rightarrow$ D

Answer: (D) Go Back to Q42

Q43.

Solution

Concept — Circular seating (between two people): Identify who lies on the short arc between B and A.

Step 1 — Recall the order: Clockwise: B, C, A, D, F, E.

Step 2 — Between B and A: Going clockwise from B to A, the only person in between is C.

Why other options are wrong:

- D, F, E: all lie on the long arc, not between B and A.

Final Answer: C sits between B and A $\Rightarrow$ B

Answer: (B) Go Back to Q43

Q44.

Solution

Concept — Matching puzzle (eliminate options): Assign games by removing what each player cannot or does not play.

Step 1 — Fixed assignments: X plays Hockey and Y plays Chess.

Step 2 — Remaining games: Cricket and Tennis are left for W and Z.

Step 3 — Apply W's restriction: W does not play Cricket (and is also barred from Chess, which is already Y's). Of the two open games, Cricket and Tennis, W cannot take Cricket, so W must take Tennis.

Step 4 — Conclusion: W plays Tennis, leaving Cricket for Z.

Why other options are wrong:

- Cricket: W is explicitly barred from Cricket, so Z takes it.
- Hockey / Chess: already taken by X and Y.

Final Answer: W plays Tennis $\Rightarrow$ A

Answer: (A) Go Back to Q44

Q45.

Solution

Concept — Linear stacking (build the pile bottom-up): Place each book using the "just above" clues.

Step 1 — Bottom: History is at the bottom (position 1).

Step 2 — Science: Science is just above History, so Science is position 2.

Step 3 — Maths/Physics/English block: Maths is just above Physics, and English is just above Maths, giving the block Physics, Maths, English (bottom to top). Stacking it above Science fills positions $3, 4, 5$: Physics $= 3$, Maths $= 4$, English $= 5$.

Step 4 — Full stack (bottom to top): History, Science, Physics, Maths, English. The middle (position 3) is Physics.

Why other options are wrong:

- Maths is position 4; English position 5; Science position 2 — none is the middle.

Final Answer: Physics is in the middle $\Rightarrow$ C

Answer: (C) Go Back to Q45

Q46.

Solution

Concept — Syllogism (chain two universals): Combine "all ... are ..." statements transitively.

Step 1 — Conclusion I: All pens are pencils and all pencils are erasers, so all pens are erasers (transitive). Conclusion I follows.

Step 2 — Conclusion II: Pens form a non-empty subset of erasers, so "some erasers are pens" is a valid converse. Conclusion II follows.

Step 3 — Combine: Both conclusions are valid.

Why other options are wrong:

- Only I / Only II: each is individually true, so a single choice is incomplete.
- Neither: both clearly follow.

Final Answer: Both I and II follow $\Rightarrow$ A

Answer: (A) Go Back to Q46

Q47.

Solution

Concept — Syllogism (some + no): Combine a particular affirmative with a universal negative.

Step 1 — Conclusion I: "Some cats are dogs" and "no dog is a lion" tell us the cat-dog overlap avoids lions, but cats outside that overlap could still be lions. So "no cat is a lion" is not guaranteed. Conclusion I does not follow.

Step 2 — Conclusion II: "Some cats are dogs" only says part of the cats are dogs, so "all cats are dogs" is not forced. Conclusion II does not follow.

Step 3 — Combine: Neither conclusion follows.

Why other options are wrong:

- Only I: cats outside the dog-overlap may be lions, so I is not certain.
- Only II / Both: "all cats are dogs" overstates "some".

Final Answer: Neither follows $\Rightarrow$ D

Answer: (D) Go Back to Q47

Q48.

Solution

Concept — Statement and conclusion: A conclusion follows only if it is firmly implied by the statement.

Step 1 — Conclusion I: Extending hours till midnight is meaningful only if some students study late at night; the council acts on that expectation. This follows.

Step 2 — Conclusion II: "Will remain open till midnight during the examination season" implies a change from the usual hours, so the library normally closed before midnight. This follows.

Step 3 — Combine: Both conclusions follow.

Why other options are wrong:

- Only I / Only II: each is implied, so a single choice is incomplete.
- Neither: both are reasonably implied.

Final Answer: Both I and II follow $\Rightarrow$ B

Answer: (B) Go Back to Q48

Q49.

Solution

Concept — Course of action: A valid action addresses the problem sensibly, without being extreme.

Step 1 — Action I: Arranging remedial mathematics classes directly tackles the failures by helping weak students improve. This follows.

Step 2 — Action II: Removing the mathematics paper from the syllabus avoids the subject rather than solving the problem; it is an excessive, impractical step. This does not follow.

Why other options are wrong:

- Both / Only II: II is disproportionate and counter-productive.
- Neither: I is a sensible, proportionate remedy.

Final Answer: Only I follows $\Rightarrow$ B

Answer: (B) Go Back to Q49

Q50.

Solution

Concept — Coded inequalities: Translate the symbols, then chain the relations.

Step 1 — Decode: $M \,\&\, N \Rightarrow M > N$; $N \,\#\, O \Rightarrow N = O$; $O \,\&\, P \Rightarrow O > P$.

Step 2 — Combine: $M > N = O > P$, so $M > O > P$, giving $M > P$. This must be true.

Step 3 — Check the others: $M = P$ contradicts $M > P$; $M < P$ is the opposite; $P > N$ contradicts $N = O > P$.

Why other options are wrong:

- $M < P$ and $M = P$: contradict $M > P$.
- $P > N$: impossible since $N = O > P$.

Final Answer: $M > P$ must be true $\Rightarrow$ D

Answer: (D) Go Back to Q50

Q51.

Solution

Concept — Ranking (rank from the other end): Rank from bottom $=$ (total) $-$ (rank from top) $+1$.

Step 1 — Identify the values: Total students $= 40$; Ravi is 12th from the top.

Step 2 — Apply the formula: Rank from bottom $= 40 - 12 + 1 = 29$.

Step 3 — Quick check: 12 (from top) $+29$ (from bottom) $= 41 = 40 + 1$, which is correct (Ravi counted once from each end).

Why other options are wrong:

- 28: forgets the "+1".
- 30: adds instead of starting the count at Ravi.
- 12th: that is his rank from the top.

Final Answer: Ravi is 29th from the bottom $\Rightarrow$ A

Answer: (A) Go Back to Q51

Q52.

Solution

Concept — Calendar (count odd days): The weekday advances by the number of days modulo 7.

Step 1 — Days elapsed: From 1 January to 26 January is $26 - 1 = 25$ days later.

Step 2 — Odd days: $25 \div 7 = 3$ remainder 4, so 4 odd days.

Step 3 — Advance the weekday: 1 Jan is Monday, so 26 Jan = Monday +4 = Friday (Tue, Wed, Thu, Fri).

Why other options are wrong:

- Thursday: that is +3 days.
- Saturday: that is +5 days.
- Wednesday: that is +2 days.

Final Answer: 26 Jan 2024 is a Friday $\Rightarrow$ C

Answer: (C) Go Back to Q52

Q53.

Solution

Concept — Missing number (row rule): Find one rule linking the first two numbers to the third, valid for every complete row.

Step 1 — Test row 1: First = 4, second = 5, third = 11. Check $4 \times 5 - (4 + 5) = 20 - 9 = 11$. The rule is (product) − (sum).

Step 2 — Confirm with row 2: $6 \times 3 - (6 + 3) = 18 - 9 = 9$, which matches the given third value. Rule confirmed.

Step 3 — Apply to row 3: $7 \times 2 - (7 + 2) = 14 - 9 = 5$.

Why other options are wrong:

- 9: that is row 2's value.
- 14: that is only the product 7×2, missing the subtraction.
- 7: does not equal (product) $-$ (sum) for row 3.

Final Answer: Missing number is $5 \Rightarrow$ B

Answer: (B) Go Back to Q53

Q54.

Solution

Concept — Data sufficiency: Test whether each statement alone pins down the exact day, then together.

Step 1 — Statement I alone: "After Tuesday but before Friday" leaves Wednesday or Thursday — two possibilities. Not sufficient.

Step 2 — Statement II alone: "Not on Wednesday" rules out only one day and leaves six others. Not sufficient.

Step 3 — Both together: From I the day is Wednesday or Thursday; II removes Wednesday, leaving only Thursday. Unique answer, so both together are sufficient.

Why other options are wrong:

- I alone / II alone / each alone: each leaves more than one possible day.

Final Answer: Both statements together are needed $\Rightarrow$ D

Answer: (D) Go Back to Q54

Q55.

Solution

Concept — Data sufficiency (yes/no question): A statement is sufficient if it settles the yes/no answer by itself.

Step 1 — Statement I alone: If K is a multiple of 4, then K is certainly even. The answer "yes" is settled. Sufficient.

Step 2 — Statement II alone: "$K+1$ is odd" means K is even (odd -1 = even). The answer "yes" is settled. Sufficient.

Step 3 — Conclusion: Each statement alone answers the question.

Why other options are wrong:

- I alone / II alone: each is sufficient, so neither is the *only* sufficient one.
- Both together but neither alone: too weak, since each already works.

Final Answer: Each statement alone is sufficient ⇒ C

Answer: (C) Go Back to Q55

Q56.

Solution

Concept — Logical Venn relationships: Decide which groups can share members.

Step 1 — Doctors and Engineers: A person can be both a doctor and an engineer, so these two circles overlap.

Step 2 — Women with each: A woman may be a doctor, and a woman may be an engineer, so Women overlaps both Doctors and Engineers.

Step 3 — Match the option: All three circles partly overlap one another (diagram A), with no circle wholly inside another and none fully separate.

Why other options are wrong:

- Completely separate: false, since a person can belong to two of the groups.
- Women inside Doctors / Engineers inside Women: not all women are doctors and not all engineers are women.

Final Answer: All three groups partly overlap ⇒ A

Answer: (A) Go Back to Q56

Q57.

Solution

Concept — Reading a bar chart (total): Add the height of every bar.

Step 1 — List the values: P $= 120$, Q $= 150$, R $= 90$, S $= 180$, T $= 60$ (thousands).

Step 2 — Add them: $120 + 150 + 90 + 180 + 60 = 600$ thousand.

Why other options are wrong:

- 640, 560, 580: arithmetic slips; the correct sum is 600.

Final Answer: Total $= 600$ thousand units $\Rightarrow$ C

Answer: (C) Go Back to Q57

Q58.

Solution

Concept — Average from a bar chart: Average $= \dfrac{\text{total}}{\text{number of bars}}$.

Step 1 — Total: From the previous question the total is 600 thousand.

Step 2 — Divide by 5**:** $\dfrac{600}{5} = 120$ thousand per salesperson.

Why other options are wrong:

- 130, 110, 125: do not equal $600 \div 5$.

Final Answer: Average $= 120$ thousand $\Rightarrow$ A

Answer: (A) Go Back to Q58

Q59.

Solution

Concept — Percentage excess: Percentage excess $= \dfrac{\text{larger} - \text{smaller}}{\text{smaller}} \times 100$.

Step 1 — Read the values: S $= 180$, R $= 90$.

Step 2 — Compute: Excess $= 180 - 90 = 90$. Percentage $= \dfrac{90}{90} \times 100 = 100\%$.

Why other options are wrong:

- 50%: uses the larger value as the base.

- 90%: uses the raw difference, not a ratio.
- 200%: doubles the correct value.

Final Answer: S exceeds R by $100\% \Rightarrow \boxed{\text{B}}$

Answer: (B) Go Back to Q59

Q60.

Solution

Concept — Combining bar values: Add the two bars, then express the total relative to another single bar.

Step 1 — Combined sales of P and R: $120 + 90 = 210$ thousand.

Step 2 — Compare with Q: Q $= 150$, and $210 - 150 = 60$, so the combined total equals Q's sales plus 60.

Why other options are wrong:

- Q plus 30: that would be 180, not 210.
- S plus 50: $180 + 50 = 230 \neq 210$.
- T plus 120: $60 + 120 = 180 \neq 210$.

Final Answer: P and R together $=$ Q plus $60 \Rightarrow \boxed{\text{D}}$

Answer: (D) Go Back to Q60

Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	A	2	A	3	B	4	C	5	B
6	A	7	C	8	B	9	D	10	B
11	C	12	A	13	B	14	B	15	A
16	C	17	A	18	C	19	B	20	D
21	C	22	B	23	A	24	D	25	C
26	A	27	B	28	D	29	A	30	B
31	D	32	A	33	C	34	B	35	D
36	A	37	C	38	B	39	D	40	A
41	C	42	D	43	B	44	A	45	C
46	A	47	D	48	B	49	B	50	D
51	A	52	C	53	B	54	D	55	C
56	A	57	C	58	A	59	B	60	D