

KMAT Logical Reasoning

Sample Paper – 2

Duration: 40 Minutes

Maximum Marks: 40

Instructions

- This paper contains **40** Multiple Choice Questions (Single Correct Answer), modelled on the Logical Reasoning section of the **KMAT Karnataka** entrance examination.
- Each correct answer carries **+1 mark**. There is **no negative marking** for incorrect or unattempted answers.
- Only **one** option is correct per question. Choose carefully.
- Syllabus: Series, Analogy, Classification, Coding-Decoding, Blood Relations, Directions, Seating Arrangement, Syllogisms, Statements & Conclusions, Venn Diagrams, Ranking, and Data Sufficiency.
- Use of mobile phones, calculators, or other electronic gadgets is strictly prohibited.

Q1. Find the missing term in the series: 1, 2, 4, 8, 16, ____

- (A) 24
- (B) 32
- (C) 28
- (D) 20

Q2. Find the missing term in the series: Z, X, V, T, R, ____

- (A) Q
- (B) O
- (C) N
- (D) P



- Q3.** Find the missing term in the series: A2, C6, E12, G20, ____
- (A) I30
 - (B) H28
 - (C) I28
 - (D) J30
- Q4.** $4 : 64 :: 3 : \underline{\hspace{1cm}}$
- (A) 9
 - (B) 12
 - (C) 27
 - (D) 81
- Q5.** Doctor : Hospital :: Teacher : ____
- (A) Market
 - (B) School
 - (C) Office
 - (D) Factory
- Q6.** FLOW : WOLF :: BIRD : ____
- (A) DIRB
 - (B) BIDR
 - (C) RBID
 - (D) DRIB
- Q7.** Which number is the **odd one out**? 4, 9, 25, 49, 80
- (A) 80
 - (B) 4
 - (C) 49



(D) 25

Q8. Which of the following is **NOT** a primary colour of pigment?

(A) Red

(B) Blue

(C) Green

(D) Yellow

Q9. In a certain code language, CODE is written as DPEF (each letter is shifted one position forward in the alphabet). Using the same rule, how is BOLD written in that code?

(A) COME

(B) CPME

(C) CNLE

(D) CQME

Q10. In a code language:

'flowers are beautiful' = '3 7 9'

'beautiful birds fly' = '9 2 5'

'birds and flowers' = '7 2 8'

What is the code for **'fly'**?

(A) 9

(B) 2

(C) 7

(D) 5

Q11. If $2 \star 3 = 12$, $3 \star 4 = 24$, $4 \star 5 = 40$, then $6 \star 7 = ?$

(A) 42

(B) 50



(C) 84

(D) 56

Q12. In a code language:

'go to school' = 'la me si'

'school is good' = 'si ve ko'

'good students go' = 'ko me ra'

What is the code for **'good'**?

(A) ko

(B) si

(C) la

(D) ve

Q13. Pointing to a man in a photograph, a woman says, *"His mother is the only daughter of my father."* How is the man in the photo related to the woman?

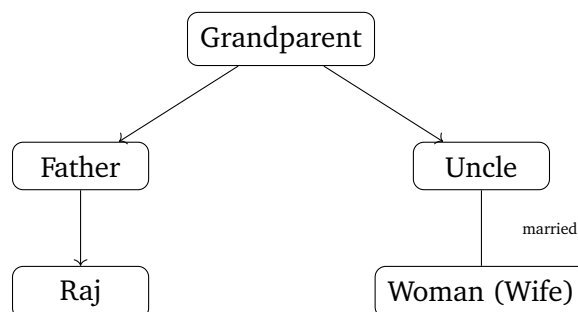
(A) Brother

(B) Son

(C) Nephew

(D) Father

Q14. Pointing to a woman, Raj says, *"She is the wife of my father's only brother."* How is Raj related to the woman?



- (A) Son
- (B) Brother
- (C) Husband
- (D) Nephew

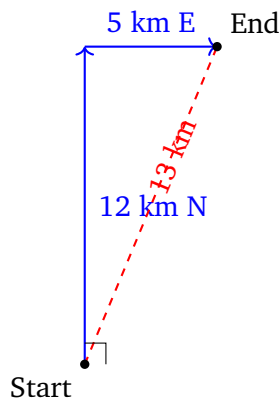
Q15. If $M+N$ means M is the father of N ; $M-N$ means M is the wife of N ; $M \times N$ means M is the brother of N . What does $P+Q \times R-S$ represent about P 's relation to S ?

- (A) Father
- (B) Brother
- (C) Father-in-law
- (D) Uncle

Q16. Maya walks 5 km East, then turns left and walks 3 km, then turns left again and walks 5 km West. In which direction is she from her **starting point**?

- (A) North
- (B) South
- (C) East
- (D) West

Q17. Rahim walks 12 km North, then turns right and walks 5 km East. What is the **shortest (straight-line) distance** from his starting point?



- (A) 17 km
- (B) 13 km
- (C) 7 km
- (D) $\sqrt{119}$ km

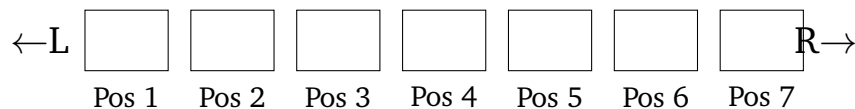
Q18. A clock shows 6:00. If the **minute hand** points **East**, in which direction does the **hour hand** point?

- (A) North
- (B) East
- (C) South
- (D) West

Q19. [Q19–Q22] Read the following and answer the questions.

Seven friends N, M, L, P, Q, R, and O sit in a row from left to right (positions 1 to 7).

- L sits at the 3rd position from the left.
- M sits to the immediate right of N.
- O sits at the extreme right (position 7).
- P sits to the immediate left of Q.
- Q sits to the immediate left of R.
- R sits between L and O.



Q19. Who sits at the **4th position** from the left?

- (A) Q
- (B) L
- (C) P
- (D) R



Q20. How many persons sit **between M and R**?

- (A) 3
- (B) 2
- (C) 4
- (D) 1

Q21. Who sits to the **immediate left of Q**?

- (A) L
- (B) P
- (C) R
- (D) M

Q22. Which pair of persons sit at the **extreme ends** of the row?

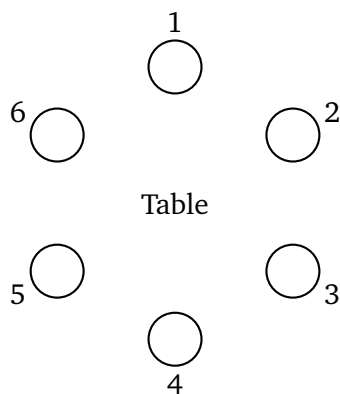
- (A) N and R
- (B) M and O
- (C) L and O
- (D) N and O

Q23. [Q23–Q25] Read the following and answer the questions.

Six people P, Q, U, S, T, and R sit around a **circular table**, all **facing the centre**. The positions are numbered 1 to 6 clockwise.

- P and S sit directly opposite each other.
- Q is to the immediate right (clockwise) of P.
- T sits directly opposite Q.
- U is to the immediate right (clockwise) of Q.
- R fills the remaining position.





Q23. Who sits to the **immediate left** (counterclockwise) of S?

- (A) T
- (B) R
- (C) U
- (D) Q

Q24. Who are the **immediate neighbours** of T?

- (A) S and R
- (B) P and Q
- (C) Q and U
- (D) U and S

Q25. Who sits **directly opposite** to R?

- (A) P
- (B) U
- (C) S
- (D) T

Q26. Statements:

- i. Some teachers are doctors.
- ii. Some doctors are engineers.



Conclusions:

- I. Some teachers are engineers.
- II. All engineers are doctors.

Which conclusion(s) follow(s)?

- (A) Only I follows
- (B) Only II follows
- (C) Both follow
- (D) Neither follows

Q27. Statements:

- i. All chairs are furniture.
- ii. All furniture is useful.

Conclusions:

- I. All chairs are useful.
- II. Some useful things are furniture.

Which conclusion(s) follow(s)?

- (A) Only I follows
- (B) Only II follows
- (C) Both follow
- (D) Neither follows

Q28. Statements:

- i. All roses are flowers.
- ii. Priya's garden has roses.

Conclusions:

- I. Priya's garden has flowers.
- II. All flowers come from Priya's garden.



Which conclusion(s) follow(s)?

- (A) Only I follows
- (B) Only II follows
- (C) Both follow
- (D) Neither follows

Q29. Statements:

- i. No fish is a bird.
- ii. All birds have wings.

Conclusions:

- I. No fish has wings.
- II. Some winged creatures are not fish.

Which conclusion(s) follow(s)?

- (A) Only I follows
- (B) Only II follows
- (C) Both follow
- (D) Neither follows

Q30. Statement: *“Reading books daily improves vocabulary and general knowledge.”*

Which assumption is implicit?

- I. All people who read books daily have perfect vocabulary.
 - II. Vocabulary can be improved through consistent reading.
- (A) Only I is implicit
 - (B) Both are implicit
 - (C) Neither is implicit
 - (D) Only II is implicit



Q31. Statement: *“Due to heavy rainfall, the cricket match between India and Australia was abandoned.”*

Conclusions:

- I. Heavy rainfall disrupts outdoor sports events.
- II. The cricket match was being held outdoors.

Which conclusion(s) follow(s)?

- (A) Only I follows
- (B) Only II follows
- (C) Both follow
- (D) Neither follows

Q32. Using the pattern shown in the table below, find the value of $4 \star 5$.

a	b	$a \star b$
3	4	25
5	6	61
2	3	13

- (A) 41
- (B) 45
- (C) 20
- (D) 9

Q33. In a row of **50 students**, Rahul is **20th from the left** end. How many students are to his **right**?

- (A) 29
- (B) 30
- (C) 31
- (D) 19



Q34. Five friends A, B, C, D, and E are compared by weight:

- A is heavier than B.
- C is heavier than D but lighter than B.
- E is lighter than D.

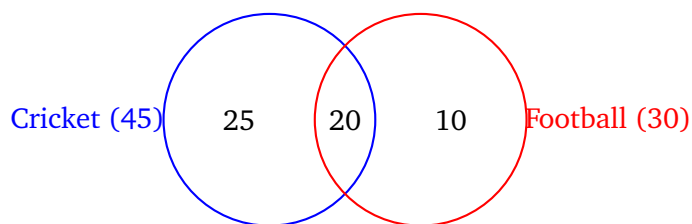
Who is the **lightest**?

- (A) B
- (B) C
- (C) D
- (D) E

Q35. Suresh is **7th from the left** end and **8th from the right** end in a row of students. How many students are in the row?

- (A) 13
- (B) 15
- (C) 14
- (D) 16

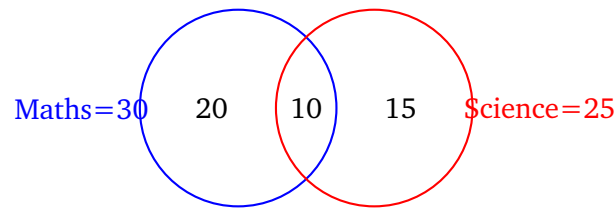
Q36. In a group of 80 students, 45 play cricket, 30 play football, and 20 play **both**. How many students play **only football**?



- (A) 10
- (B) 20
- (C) 25
- (D) 45



Q37. In a class, 30 students like Maths, 25 like Science, and 10 like **both**. How many students like **at least one** subject?



- (A) 55
- (B) 45
- (C) 40
- (D) 15

Q38. Question: Is the integer m divisible by 6?

Statement I: m is divisible by 2.

Statement II: m is divisible by 4.

- (A) Statement I alone is sufficient
- (B) Statement II alone is sufficient
- (C) Both together are sufficient
- (D) Both together are also not sufficient

Q39. Question: What is the cost of 1 apple?

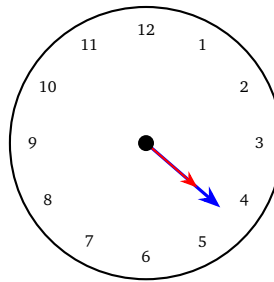
Statement I: The cost of 3 apples and 2 mangoes is Rs. 50.

Statement II: The cost of 1 apple is Rs. 2 less than 1 mango.

- (A) Statement I alone is sufficient
- (B) Statement II alone is sufficient
- (C) Both together are sufficient, but neither alone
- (D) Both together are also not sufficient

Q40. At what time between **4 and 5 o'clock** are the hour and minute hands of a clock **together**?





Both hands coincide

- (A) 4 h $21\frac{9}{11}$ min
- (B) 4 h 25 min
- (C) 4 h 20 min
- (D) 4 h 22 min



Detailed Solutions

Sol 1.

Solution

Concept — Number Series (Geometric Progression): Each term is obtained by multiplying the previous term by 2.

Step 1 — List the pattern: $1 \times 2 = 2$, $2 \times 2 = 4$, $4 \times 2 = 8$, $8 \times 2 = 16$, $16 \times 2 = 32$.

Why other options are wrong:

- Option A (24): $16 + 8 = 24$, which would be arithmetic addition, not doubling.
- Option C (28): $16 + 12$ — no consistent rule.
- Option D (20): $16 + 4$ — no consistent rule.

Final Answer: Next term = $16 \times 2 = 32 \Rightarrow$ **B**

Answer: (B) [Go Back to Q 1](#)

Sol 2.

Solution

Concept — Letter Series (Skip-one backward): The series moves backward through the alphabet, skipping one letter each time (-2 positions).

Step 1 — $Z(26) \rightarrow X(24) \rightarrow V(22) \rightarrow T(20) \rightarrow R(18) \rightarrow P(16)$.

Why other options are wrong:

- Option A (Q): Q is position 17, which is only -1 from R.
- Option B (O): O is position 15, which is -3 from R.
- Option C (N): N is position 14, which is -4 from R.

Final Answer: Next letter = P $\Rightarrow$ **D**

Answer: (D) [Go Back to Q 2](#)



Sol 3.

Solution

Concept — Alpha-numeric Series (dual pattern): Letters advance by +2 (A, C, E, G, I...); numbers follow differences of +4, +6, +8, +10... (i.e., 2, 6, 12, 20, 30...).

Step 1 — Letter: $A \rightarrow C \rightarrow E \rightarrow G \rightarrow I$.

Step 2 — Number differences: $6 - 2 = 4$; $12 - 6 = 6$; $20 - 12 = 8$; next difference = 10; $20 + 10 = 30$.

Why other options are wrong:

- Option B (H28): H is wrong (letter skips by 2, not 1); 28 is also incorrect.
- Option C (I28): Letter I is correct but number should be 30, not 28.
- Option D (J30): Letter J skips by 3 — not the pattern.

Final Answer: Next term = I30 $\Rightarrow$ A

Answer: (A) [Go Back to Q 3](#)

Sol 4.

Solution

Concept — Number Analogy (Cubes): The relationship is $n : n^3$.

Step 1 — Verify: $4^3 = 64$ ✓. Apply to 3: $3^3 = 27$.

Why other options are wrong:

- Option A (9): $3^2 = 9$ — that is the square, not the cube.
- Option B (12): $3 \times 4 = 12$ — multiplication, not cubing.
- Option D (81): $3^4 = 81$ — fourth power, not cube.

Final Answer: $3^3 = 27 \Rightarrow$ C

Answer: (C) [Go Back to Q 4](#)



Sol 5.

Solution

Concept — Word Analogy (Person : Workplace): A doctor works in a hospital; a teacher works in a school.

Step 1 — Doctor $\rightarrow$ Hospital (workplace). Teacher $\rightarrow$ **School** (workplace).

Why other options are wrong:

- Option A (Market): Not a teacher's workplace.
- Option C (Office): Generic workplace; not specific to a teacher.
- Option D (Factory): Workers, not teachers, are associated with factories.

Final Answer: Teacher : School $\Rightarrow$ **B**

Answer: (B) [Go Back to Q 5](#)

Sol 6.

Solution

Concept — Letter Analogy (Reversal): The word is reversed letter by letter.

Step 1 — FLOW reversed $\rightarrow$ W-O-L-F = WOLF ✓.

Step 2 — BIRD reversed $\rightarrow$ D-R-I-B = **DRIB**.

Why other options are wrong:

- Option A (DIRB): D and I are swapped compared to the correct reversal.
- Option B (BIDR): Not a reversal; letters are rearranged differently.
- Option C (RBID): R is brought to front — not a simple reversal.

Final Answer: Reverse of BIRD = DRIB $\Rightarrow$ **D**

Answer: (D) [Go Back to Q 6](#)



Sol 7.

Solution

Concept — Classification (Perfect Squares): All numbers except one are perfect squares.

Step 1 — Check each: $4 = 2^2$; $9 = 3^2$; $25 = 5^2$; $49 = 7^2$; $80 = ? \rightarrow \sqrt{80} \approx 8.94$ (not an integer).

Why other options are wrong:

- Option B (4): $4 = 2^2$ is a perfect square.
- Option C (49): $49 = 7^2$ is a perfect square.
- Option D (25): $25 = 5^2$ is a perfect square.

Final Answer: 80 is not a perfect square $\Rightarrow$ A

Answer: (A) [Go Back to Q 7](#)

Sol 8.

Solution

Concept — Classification (Primary Pigment Colours): The three primary colours of pigment (subtractive colour mixing) are **Red, Blue, and Yellow**.

Step 1 — Green is a primary colour of *light* (additive: Red, Green, Blue), but *not* of pigment. Hence Green is the odd one out.

Why other options are wrong:

- Option A (Red): Primary pigment colour.
- Option B (Blue): Primary pigment colour.
- Option D (Yellow): Primary pigment colour.

Final Answer: Green is not a primary pigment colour $\Rightarrow$ C

Answer: (C) [Go Back to Q 8](#)



Sol 9.

Solution

Concept — Coding-Decoding (Letter Shift +1): Each letter in the word is replaced by the next letter in the alphabet.

Step 1 — Verify: $C \rightarrow D, O \rightarrow P, D \rightarrow E, E \rightarrow F$ gives DPEF ✓.

Step 2 — Encode BOLD: $B \rightarrow C, O \rightarrow P, L \rightarrow M, D \rightarrow E \Rightarrow \text{CPME}$.

Why other options are wrong:

- Option A (COME): C is correct but O stays as O instead of becoming P.
- Option C (CNLE): N is wrong (L+1 should give M).
- Option D (CQME): Q is wrong (O+1 should give P, not Q).

Final Answer: BOLD $\rightarrow$ CPME $\Rightarrow$ B

Answer: (B) [Go Back to Q 9](#)

Sol 10.

Solution

Concept — Coding-Decoding (Word-to-Code Matching): Identify the code for each word by finding which code appears in exactly those sentences that share the word.

Step 1 — ‘beautiful’ appears in sentences 1 & 2; common code = 9.

Step 2 — ‘birds’ appears in sentences 2 & 3; common code = 2.

Step 3 — ‘flowers’ appears in sentences 1 & 3; common code = 7.

Step 4 — ‘fly’ appears only in sentence 2; remaining code in sentence 2 after 9 and 2 is 5.

Why other options are wrong:

- Option A (9): Code for ‘beautiful’.
- Option B (2): Code for ‘birds’.
- Option C (7): Code for ‘flowers’.

Final Answer: Code for ‘fly’ = 5 $\Rightarrow$ D



Answer: (D) [Go Back to Q 10](#)

Sol 11.

Solution

Concept — Coding-Decoding (Operation Pattern): Identify the hidden operation from the given pairs.

Step 1 — Try $a \star b = 2ab$: $2 \times 2 \times 3 = 12$ ✓; $2 \times 3 \times 4 = 24$ ✓; $2 \times 4 \times 5 = 40$ ✓.

Step 2 — Apply: $6 \star 7 = 2 \times 6 \times 7 = 84$.

Why other options are wrong:

- Option A (42): $6 \times 7 = 42$ — simple product, ignores factor of 2.
- Option B (50): $6 + 7 + \dots$ — no consistent rule yields 50.
- Option D (56): $8 \times 7 = 56$ — incorrect multiplier.

Final Answer: $6 \star 7 = 2 \times 6 \times 7 = 84 \Rightarrow$ **C**

Answer: (C) [Go Back to Q 11](#)

Sol 12.

Solution

Concept — Coding-Decoding (Common Word Isolation): Match codes that appear in multiple sentences where the target word is the common element.

Step 1 — ‘good’ appears in sentences 2 (‘school is good’ = ‘si ve ko’) and 3 (‘good students go’ = ‘ko me ra’). Common code = ko.

Why other options are wrong:

- Option B (si): ‘si’ appears in sentences 1 & 2; common word is ‘school’.
- Option C (la): ‘la’ appears only in sentence 1; it could be ‘go’ or ‘to’.
- Option D (ve): ‘ve’ appears only in sentence 2; it codes for ‘is’.

Final Answer: Code for ‘good’ = ko $\Rightarrow$ **A**

Answer: (A) [Go Back to Q 12](#)



Sol 13.

Solution

Concept — Blood Relations (Identifying Relationship): Decode the description step by step.

Step 1 — “Only daughter of my father” = the woman herself.

Step 2 — The man’s mother = the woman. Therefore the man is the woman’s **son**.

Why other options are wrong:

- Option A (Brother): Would require the man to share the same parents, which is not the case.
- Option C (Nephew): Nephew implies the man’s parent is the woman’s sibling, not the woman herself.
- Option D (Father): The man cannot be the woman’s father if the woman is his mother.

Final Answer: The man is the woman’s Son $\Rightarrow$ **B**

Answer: (B) [Go Back to Q 13](#)

Sol 14.

Solution

Concept — Blood Relations (Uncle/Aunt/Nephew): Decode step by step using the family tree shown in the question.

Step 1 — Raj’s father’s only brother = Raj’s **uncle**.

Step 2 — The woman is the uncle’s wife = Raj’s **aunt**.

Step 3 — Raj is the nephew of his aunt (the woman). Hence the woman sees Raj as her **nephew**.

Why other options are wrong:

- Option A (Son): Raj is the son of the father, not the uncle.
- Option B (Brother): Raj and the uncle are not siblings.
- Option C (Husband): Raj is not married to the woman.

Final Answer: Raj is the woman’s Nephew $\Rightarrow$ **D**



Answer: (D) [Go Back to Q 14](#)

Sol 15.

Solution

Concept — Blood Relations (Symbolic Notation): Decode each operator in sequence.

Step 1 — $P+Q$: P is the **father** of Q.

Step 2 — $Q \times R$: Q is the **brother** of R $\Rightarrow$ P is also the father of R.

Step 3 — $R-S$: R is the **wife** of S $\Rightarrow$ S is R's husband. Since P is R's father, P is S's **father-in-law**.

Why other options are wrong:

- Option A (Father): P is R's father, not S's father.
- Option B (Brother): P and S share no sibling relation.
- Option D (Uncle): No uncle relationship is established.

Final Answer: P is the father-in-law of S $\Rightarrow$ **C**

Answer: (C) [Go Back to Q 15](#)

Sol 16.

Solution

Concept — Directions (Tracking Movement): Track each move on a coordinate grid.

Step 1 — Start at (0, 0). Walk 5 km East $\rightarrow$ (5, 0).

Step 2 — Turn left (now facing North). Walk 3 km $\rightarrow$ (5, 3).

Step 3 — Turn left (now facing West). Walk 5 km $\rightarrow$ (0, 3).

Step 4 — Final position (0, 3): directly **North** of start (0, 0).

Why other options are wrong:



- Option B (South): She is above the starting point, not below.
- Option C (East): Her x -coordinate is 0, same as start.
- Option D (West): She moved West but also moved North, ending directly North.

Final Answer: Maya is North of her starting point $\Rightarrow$ **A**

Answer: (A) [Go Back to Q 16](#)

Sol 17.

Solution

Concept — Directions (Pythagoras Theorem): The two displacements form the legs of a right-angled triangle.

Step 1 — Start at $(0, 0)$. Walk 12 km North $\rightarrow (0, 12)$.

Step 2 — Walk 5 km East $\rightarrow (5, 12)$.

Step 3 — Straight-line distance $= \sqrt{5^2 + 12^2} = \sqrt{25 + 144} = \sqrt{169} = 13$ km.

Why other options are wrong:

- Option A (17 km): $12 + 5 = 17$ is the total path length, not the straight-line distance.
- Option C (7 km): $12 - 5 = 7$ — subtraction, not the hypotenuse.
- Option D ($\sqrt{119}$ km): Incorrect arithmetic: $12^2 - 5^2 = 119$, but the hypotenuse uses addition.

Final Answer: Shortest distance $= 13$ km $\Rightarrow$ **B**

Answer: (B) [Go Back to Q 17](#)



Sol 18.

Solution

Concept — Directions (Clock-based Orientation): Determine relative positions of clock hands and apply the given orientation.

Step 1 — At 6:00, the minute hand points to 12 (normally **North**/up) and the hour hand points to 6 (normally **South**/down).

Step 2 — The angle between minute hand (12) and hour hand (6) is 180.

Step 3 — If the minute hand now points East (rotated 90 clockwise from North), the hour hand — always 180 opposite — points 90 clockwise from South = **West**.

Why other options are wrong:

- Option A (North): North is where the minute hand points.
- Option B (East): East is where the minute hand points.
- Option C (South): South is the default (unrotated) position of the hour hand.

Final Answer: Hour hand points West $\Rightarrow$ D

Answer: (D) [Go Back to Q 18](#)

Sol 19.

Solution

Concept — Linear Seating Arrangement: Deduce each person's position using the given clues.

Step 1 — L = 3, O = 7 (given directly).

Step 2 — R is between L(3) and O(7) and to the immediate right of Q who is to the immediate right of P $\Rightarrow$ P(4)–Q(5)–R(6).

Step 3 — M is to the immediate right of N. Remaining positions: 1 and 2. So N(1)–M(2).

Arrangement: N(1) – M(2) – L(3) – P(4) – Q(5) – R(6) – O(7).

Position 4 = P.

Why other options are wrong:



- Option A (Q): Q is at position 5.
- Option B (L): L is at position 3.
- Option D (R): R is at position 6.

Final Answer: 4th position = P $\Rightarrow$ C

Answer: (C) [Go Back to Q 19](#)

Sol 20.

Solution

Concept — Linear Seating Arrangement (Count between): Using the established arrangement N(1)–M(2)–L(3)–P(4)–Q(5)–R(6)–O(7).

Step 1 — M is at position 2; R is at position 6.

Step 2 — Persons between positions 2 and 6: positions 3, 4, 5 $\Rightarrow$ L, P, Q = 3 persons.

Why other options are wrong:

- Option B (2): Counts only 2 people — misses one.
- Option C (4): Overcounts; there are only positions 3–5 between 2 and 6.
- Option D (1): Severe undercount.

Final Answer: 3 persons sit between M and R $\Rightarrow$ A

Answer: (A) [Go Back to Q 20](#)



Sol 21.

Solution

Concept — Linear Seating Arrangement (Immediate neighbour): Using the established arrangement.

Step 1 — Q is at position 5. Immediate left = position 4 = P.

Why other options are wrong:

- Option A (L): L is at position 3, two seats left of Q.
- Option C (R): R is to the immediate *right* of Q.
- Option D (M): M is at position 2, three seats left of Q.

Final Answer: Immediate left of Q = P $\Rightarrow$ **B**

Answer: (B) [Go Back to Q 21](#)

Sol 22.

Solution

Concept — Linear Seating Arrangement (Extreme ends): Using the established arrangement.

Step 1 — Leftmost position (1) = N. Rightmost position (7) = O.

Why other options are wrong:

- Option A (N and R): R is at position 6, not at an extreme end.
- Option B (M and O): M is at position 2, not the extreme left.
- Option C (L and O): L is at position 3, not the extreme left.

Final Answer: Extreme ends are N and O $\Rightarrow$ **D**

Answer: (D) [Go Back to Q 22](#)



Sol 23.

Solution

Concept — Circular Seating Arrangement: Deduce each person's position (clockwise: 1=top, going clockwise).

Step 1 — P and S are directly opposite $\Rightarrow$ positions 1 and 4. Let $P = 1, S = 4$.

Step 2 — Q is immediately right (clockwise) of P(1) $\Rightarrow Q = 2$.

Step 3 — T is directly opposite Q(2) $\Rightarrow T = 5$.

Step 4 — U is immediately right of Q(2) $\Rightarrow U = 3$.

Step 5 — Remaining position 6 = R.

Arrangement (clockwise): P(1)–Q(2)–U(3)–S(4)–T(5)–R(6).

Immediate left (counterclockwise) of S(4) = position 3 = U.

Why other options are wrong:

- Option A (T): T is at position 5 (immediate right of S, not left).
- Option B (R): R is at position 6.
- Option D (Q): Q is at position 2.

Final Answer: Immediate left of S = U $\Rightarrow$ C

Answer: (C) [Go Back to Q 23](#)

Sol 24.

Solution

Concept — Circular Seating Arrangement (Neighbours): Using arrangement P(1)–Q(2)–U(3)–S(4)–T(5)–R(6).

Step 1 — T is at position 5. Clockwise neighbour = R(6); counterclockwise neighbour = S(4).

Step 2 — Immediate neighbours of T = S and R.

Why other options are wrong:

- Option B (P and Q): P is at position 1 and Q at position 2 — neither is



adjacent to T(5).

- Option C (Q and U): Q(2) and U(3) are adjacent to each other, not to T.
- Option D (U and S): U(3) is not adjacent to T(5); only S(4) is.

Final Answer: Neighbours of T are S and R $\Rightarrow$ **A**

Answer: (A) [Go Back to Q 24](#)

Sol 25.

Solution

Concept — Circular Seating Arrangement (Opposite seat): In a 6-person circle, directly opposite means 3 positions away.

Step 1 — R is at position 6. Position directly opposite = $6 - 3 = 3 = \text{U}$.

Why other options are wrong:

- Option A (P): P is at position 1, which is 3 positions from R going counter-clockwise — wait, $|6 - 1| = 5$ or $6 - 5 = 1$ seats apart. Actually opposite of position 1 is position 4. So P(1) is not opposite R(6).
- Option C (S): S is at position 4; opposite of 4 is 1 (P), not 6.
- Option D (T): T is at position 5; opposite of 5 is 2 (Q).

Final Answer: Directly opposite R = U $\Rightarrow$ **B**

Answer: (B) [Go Back to Q 25](#)



Sol 26.

Solution

Concept — Syllogisms (Particular Affirmative): When both premises are ‘Some’ statements, no universal conclusion can be drawn between the non-overlapping sets.

Step 1 — Conclusion I: “Some teachers are engineers.” The teachers who are doctors may be different from the doctors who are engineers. Not certain. **Does not follow.**

Step 2 — Conclusion II: “All engineers are doctors.” The premise only says *some* doctors are engineers, not the reverse. **Does not follow.**

Why other options are wrong:

- Option A (Only I): I does not follow.
- Option B (Only II): II does not follow.
- Option C (Both): Neither follows.

Final Answer: Neither conclusion follows $\Rightarrow$ D

Answer: (D) [Go Back to Q 26](#)

Sol 27.

Solution

Concept — Syllogisms (Universal Affirmative chain): When all A are B and all B are C, then all A are C; also, all $B \subseteq C$ means some C are B.

Step 1 — All chairs $\rightarrow$ furniture $\rightarrow$ useful. So **all chairs are useful** (Conclusion I follows).

Step 2 — All furniture is useful $\Rightarrow$ furniture $\subseteq$ useful $\Rightarrow$ some useful things are furniture (Conclusion II follows by conversion).

Why other options are wrong:

- Option A (Only I): II also follows.
- Option B (Only II): I also follows.
- Option D (Neither): Both follow.

Final Answer: Both conclusions follow $\Rightarrow$ C



Answer: (C) [Go Back to Q 27](#)

Sol 28.

Solution

Concept — Syllogisms (Particular Affirmative + Universal): From “All roses are flowers” and “Priya’s garden has roses”.

Step 1 — Priya’s garden has roses + all roses are flowers $\Rightarrow$ Priya’s garden has flowers. **Conclusion I follows.**

Step 2 — Conclusion II says “All flowers come from Priya’s garden.” This is a sweeping generalisation not supported by the premises. **Does not follow.**

Why other options are wrong:

- Option B (Only II): II does not follow.
- Option C (Both): II does not follow.
- Option D (Neither): I clearly follows.

Final Answer: Only Conclusion I follows $\Rightarrow$ **A**

Answer: (A) [Go Back to Q 28](#)

Sol 29.

Solution

Concept — Syllogisms (Negative premise): “No fish is a bird” + “All birds have wings”.

Step 1 — Conclusion I: “No fish has wings.” Fish may have wings through a category other than birds (e.g., flying fish). The premises do not rule this out. **Does not follow.**

Step 2 — Conclusion II: “Some winged creatures are not fish.” All birds have wings, and no bird is a fish $\Rightarrow$ birds form a set of winged creatures that are not fish. Hence some winged creatures (birds) are definitely not fish. **Follows.**

Why other options are wrong:



- Option A (Only I): I does not follow.
- Option C (Both): I does not follow.
- Option D (Neither): II does follow.

Final Answer: Only Conclusion II follows $\Rightarrow$ **B**

Answer: (B) [Go Back to Q 29](#)

Sol 30.

Solution

Concept — Statement & Assumption (Implicit vs Explicit): An implicit assumption is the underlying belief that makes the statement meaningful.

Step 1 — Assumption I: “All people who read books daily have perfect vocabulary.” The statement says reading *improves* vocabulary — not that readers achieve *perfection*. This is too extreme and is **not implicit**.

Step 2 — Assumption II: “Vocabulary can be improved through consistent reading.” This is exactly what the statement assumes — improvement is possible via daily reading. **Implicit**.

Why other options are wrong:

- Option A (Only I): I is too absolute to be implicit.
- Option B (Both): I is not implicit.
- Option C (Neither): II is clearly implicit.

Final Answer: Only Assumption II is implicit $\Rightarrow$ **D**

Answer: (D) [Go Back to Q 30](#)



Sol 31.

Solution

Concept — Statement & Conclusion (Logical Inference): Assess what can be logically concluded from the given statement.

Step 1 — Conclusion II: Cricket is universally played outdoors. The statement confirms this fact implicitly by linking heavy rainfall to match abandonment. **Follows.**

Step 2 — Conclusion I: “Heavy rainfall disrupts outdoor sports.” This is the general principle underlying the specific instance in the statement. It is a reasonable, direct inference. **Follows.**

Why other options are wrong:

- Option A (Only I): II also follows.
- Option B (Only II): I also follows.
- Option D (Neither): Both follow.

Final Answer: Both conclusions follow $\Rightarrow$ **C**

Answer: (C) [Go Back to Q 31](#)

Sol 32.

Solution

Concept — Mathematical Operations (Pattern Recognition): Identify the rule from the given table.

Step 1 — Try $a \star b = a^2 + b^2$: $3^2 + 4^2 = 9 + 16 = 25$ ✓; $5^2 + 6^2 = 25 + 36 = 61$ ✓; $2^2 + 3^2 = 4 + 9 = 13$ ✓.

Step 2 — Apply: $4 \star 5 = 4^2 + 5^2 = 16 + 25 = 41$.

Why other options are wrong:

- Option B (45): $4^2 + 5^2 = 41$, not 45.
- Option C (20): $4 + 5 + \dots$ — no rule yields 20.
- Option D (9): $4 + 5 = 9$ — simple addition, inconsistent with the table.

Final Answer: $4 \star 5 = 41 \Rightarrow$ **A**

Answer: (A) [Go Back to Q 32](#)



Sol 33.

Solution

Concept — Ranking (Row Count): Total students = position from left + students to the right.

Step 1 — Rahul is 20th from the left in a row of 50. Students to his right = $50 - 20 = 30$.

Why other options are wrong:

- Option A (29): Off by one — this would be the count if Rahul himself were included.
- Option C (31): Overcounts by 1.
- Option D (19): Confuses right count with left count (20th from left means 19 to his left, not right).

Final Answer: Students to Rahul's right = 30 $\Rightarrow$ **B**

Answer: (B) [Go Back to Q 33](#)

Sol 34.

Solution

Concept — Ranking (Weight Comparison): Build the order from the given conditions.

Step 1 — $A > B$ (A heavier than B).

Step 2 — $B > C > D$ (C heavier than D but lighter than B).

Step 3 — $D > E$ (E lighter than D).

Final Order (heaviest to lightest): $A > B > C > D > E$.

Why other options are wrong:

- Option A (B): B is 2nd heaviest.
- Option B (C): C is 3rd.
- Option C (D): D is 4th, heavier than E.

Final Answer: Lightest = E $\Rightarrow$ **D**

Answer: (D) [Go Back to Q 34](#)



Sol 35.

Solution

Concept — Ranking (Total Row Count): Total = position from left + position from right – 1.

Step 1 — Total = $7 + 8 - 1 = 14$.

Why other options are wrong:

- Option A (13): Uses $7 + 8 - 2$, an incorrect formula.
- Option B (15): Uses $7 + 8$, forgetting to subtract 1 for the person himself.
- Option D (16): Overcounts by 2.

Final Answer: Total students in row = 14 $\Rightarrow$ **C**

Answer: (C) [Go Back to Q 35](#)

Sol 36.

Solution

Concept — Venn Diagram (Set Intersection): Only football = total football – both sports.

Step 1 — Only cricket = $45 - 20 = 25$.

Step 2 — Only football = $30 - 20 = 10$.

Step 3 — Verify total: $25 + 20 + 10 = 55 \leq 80 \checkmark$ (25 play neither).

Why other options are wrong:

- Option B (20): 20 is the number who play *both*, not only football.
- Option C (25): 25 is the number who play only cricket.
- Option D (45): 45 is the total cricket players (including those who play both).

Final Answer: Only football = 10 $\Rightarrow$ **A**

Answer: (A) [Go Back to Q 36](#)



Sol 37.

Solution

Concept — Venn Diagram (Union Formula): $|A \cup B| = |A| + |B| - |A \cap B|$.

Step 1 — $|\text{Maths} \cup \text{Science}| = 30 + 25 - 10 = 45$.

Why other options are wrong:

- Option A (55): $30 + 25 = 55$ — forgets to subtract the overlap.
- Option C (40): $30 + 25 - 15$ — uses incorrect overlap.
- Option D (15): $25 - 10$ — only gives “only Science” count.

Final Answer: Students liking at least one subject = 45 $\Rightarrow$ **B**

Answer: (B) [Go Back to Q 37](#)

Sol 38.

Solution

Concept — Data Sufficiency (Divisibility by 6): Divisibility by 6 requires divisibility by both 2 and 3.

Step 1 — Statement I alone: m divisible by 2 $\Rightarrow$ even, but no info about divisibility by 3. *Not sufficient.*

Step 2 — Statement II alone: m divisible by 4 $\Rightarrow$ also divisible by 2, but still no info about 3. *Not sufficient.*

Step 3 — Both together: m divisible by 4 (and 2), but still no guarantee of divisibility by 3. Example: $m = 4$ (divisible by 4 but not 6); $m = 12$ (divisible by both). *Still not sufficient.*

Why other options are wrong:

- Options A, B, C: None can confirm divisibility by 3, which is necessary for divisibility by 6.

Final Answer: Both together are also not sufficient $\Rightarrow$ **D**

Answer: (D) [Go Back to Q 38](#)



Sol 39.

Solution

Concept — Data Sufficiency (System of Equations): Two unknowns need two independent equations.

Step 1 — Statement I alone: $3a + 2m = 50$ — one equation, two unknowns. *Not sufficient.*

Step 2 — Statement II alone: $a = m - 2$ — one equation, two unknowns. *Not sufficient.*

Step 3 — Together: Substitute $a = m - 2$ into $3(m - 2) + 2m = 50 \Rightarrow 5m - 6 = 50 \Rightarrow m = 11.2; a = 9.2$. *Sufficient.*

Why other options are wrong:

- Option A: One equation insufficient for two unknowns.
- Option B: One equation insufficient for two unknowns.
- Option D: Together, both statements are sufficient.

Final Answer: Both together are sufficient, but neither alone $\Rightarrow$ **C**

Answer: (C) [Go Back to Q 39](#)

Sol 40.

Solution

Concept — Clock Problems (Hands Coincidence): Use the formula: the minute hand gains $\frac{11}{12}$ minutes on the hour hand every minute.

Step 1 — At 4:00, the hour hand is at the 20-minute mark (since $4 \times 5 = 20$).

Step 2 — The minute hand must gain 20 minutes on the hour hand. Time taken $= 20 \div \frac{11}{12} = 20 \times \frac{12}{11} = \frac{240}{11} = 21\frac{9}{11}$ minutes.

Step 3 — The hands coincide at 4 h $21\frac{9}{11}$ min.

Why other options are wrong:

- Option B (4 h 25 min): At 4:25, minute hand is at 25, hour hand is at $20 + 25 \times \frac{1}{12} \approx 22.1$ — not coincident.



- Option C (4 h 20 min): At 4:20, minute hand is at 20, hour hand is at $20 + \frac{20}{12} \approx 21.7$ — not yet coincident.
- Option D (4 h 22 min): Very close but not exact; exact answer is $21\frac{9}{11}$ min.

Final Answer: Hands coincide at 4 h $21\frac{9}{11}$ min $\Rightarrow$ A

Answer: (A) [Go Back to Q 40](#)



Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	B	2	D	3	A	4	C	5	B
6	D	7	A	8	C	9	B	10	D
11	C	12	A	13	B	14	D	15	C
16	A	17	B	18	D	19	C	20	A
21	B	22	D	23	C	24	A	25	B
26	D	27	C	28	A	29	B	30	D
31	C	32	A	33	B	34	D	35	C
36	A	37	B	38	D	39	C	40	A

