ATMA Analytical Reasoning Skills Sample Paper – 8

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**. There is **a penalty of** 0.25 **mark** for each incorrect answer; unattempted questions carry 0.
- 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: $5,\ 6,\ 9,\ 14,\ 21,\ ?$

(A) 28

(B) 29

(C) 30

(D) 31

Q2. Find the next term in the letter series: A, C, F, J, O, ?

(A) T

(B) U

(C) S

(D) V

Q3. **Thermometer : Temperature :: Barometer : ?**

(A) Pressure

(B) Humidity

(C) Altitude

(D) Rainfall

Q4. $7 : 50 :: 9 :?$ (apply the same rule that takes 7 to 50).

(A) 79

(B) 80

(C) 81

(D) 82

Q5. Three of the following four numbers are alike in sharing a common property. Which one does **not** belong to the group?

(A) 27

(B) 50

(C) 64

(D) 125

Q6. In a certain code each letter is replaced by its *mirror* letter in the alphabet (A $\leftrightarrow$ Z, B $\leftrightarrow$ Y, C $\leftrightarrow$ X, ...). In this code, how is the word **LOGIC** written?

(A) OLTRX

(B) ORTLX

(C) OLRXT

(D) OLTXR

Q7. Using the same mirror rule as in Q6 (A $\leftrightarrow$ Z, B $\leftrightarrow$ Y, ...), the code word **XSZIG** stands for which actual word?

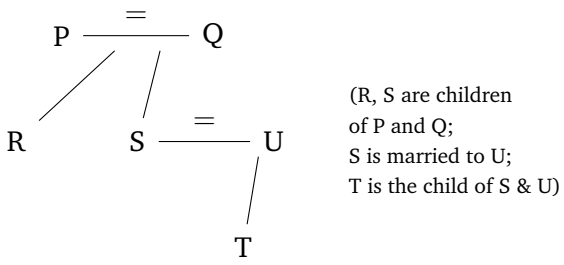
(A) CHART

(B) CHARM

(C) CHASE

(D) CHAIR

Q8. Study the family tree below, where a double line "=" joins a married couple and a downward line joins a parent to a child. How is **T** related to **P**?



(A) Son

(B) Daughter

(C) Nephew

(D) Grandchild

Q9. Pointing to a lady, Karan said, "She is the only daughter of the mother of my brother." How is the lady related to Karan?

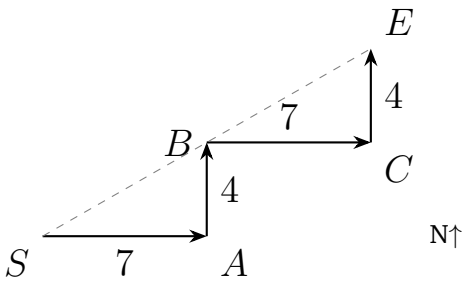
(A) Mother

(B) Sister

(C) Aunt

(D) Cousin

Q10. A surveyor starts at point S, walks 7 km East to A, then 4 km North to B, then 7 km East to C, and finally 4 km North to reach E. The route is shown below. What is the straight-line distance between S and E, and in which direction does E lie from S?



(A) $\sqrt{260}$ km, North-East

(B) $\sqrt{200}$ km, North-East

(C) $\sqrt{260}$ km, South-East

(D) $\sqrt{210}$ km, North-West

Q11. Directions (Q11–Q13): Seven employees — Amit, Bina, Charu, Dev, Esha, Farhan and Gita — take exactly one day of leave each, one per day, across the seven days of a week from **Monday to Sunday**. The following facts are known:

- Charu takes leave on Wednesday.
- Amit takes leave on the day immediately before Charu.
- Gita takes leave on Sunday.
- Esha takes leave on Thursday.
- Bina takes leave on Friday.
- Farhan does not take leave on Monday.

Use the blank schedule grid below to work out the arrangement.

Mon	Tue	Wed	Thu	Fri	Sat	Sun

Q11. Who takes leave on Monday?

(A) Charu

(B) Farhan

(C) Dev

(D) Amit

Q12. (Refer to the schedule in Q11.) On which day does Esha take leave?

(A) Tuesday

(B) Thursday

(C) Saturday

(D) Sunday

Q13. (Refer to the schedule in Q11.) Who takes leave on Saturday?

(A) Dev

(B) Esha

(C) Farhan

(D) Bina

Q14. Six books — on Maths, Physics, Chemistry, Biology, History and Geography — are stacked one above another. Maths is immediately above Physics. History is at the very top. Geography is immediately below Chemistry. Biology is at the very bottom. Chemistry is somewhere above Maths. Which book is exactly in the middle pair, i.e. occupies the **third** position from the top?

(A) Chemistry

(B) Geography

(C) Maths

(D) Physics

Q15. Five colleagues compare their work experience. Pooja has more experience than Rahul but less than Sameer. Tarun has more experience than Sameer. Umesh has less experience than Rahul. Who has the **second-highest** experience?

(A) Tarun

(B) Pooja

(C) Rahul

(D) Sameer

Q16. **Statements:** All artists are dreamers. All dreamers are creators.

Conclusions: (I) All artists are creators. (II) Some creators are artists.

Which conclusion(s) follow?

(A) Both I and II follow

(B) Only I follows

(C) Only II follows

(D) Neither follows

Q17. **Statements:** Some doctors are singers. No singer is a dancer.

Conclusions: (I) Some doctors are not dancers. (II) No doctor is a dancer.

Which conclusion(s) follow?

(A) Both I and II follow

(B) Only II follows

(C) Only I follows

(D) Neither follows

Q18. **Statement:** An institute advertises: "Enrol in our crash course and guarantee yourself a top-100 rank in the exam."

Assumptions: (I) Candidates are influenced by rank-related promises. (II) The institute can control every candidate's final rank.

Which assumption is **implicit**?

(A) Only II is implicit

(B) Only I is implicit

(C) Both are implicit

(D) Neither is implicit

Q19. **Statement:** "After the company shifted to a four-day work week, employee productivity per hour rose by 18% within three months."

Which of the following is the most logical **inference** from this statement?

(A) A four-day week always raises productivity in every company.

(B) Employees were deliberately working slowly earlier.

(C) Productivity is unrelated to the number of working days.

(D) For this company, reducing working days did not reduce, and in fact coincided with higher, hourly output.

Q20. In a certain code: '$P \,\square\, Q$' means $P \geq Q$; '$P \,\triangle\, Q$' means $P > Q$; '$P \circ Q$' means $P = Q$; '$P \diamond Q$' means $P \leq Q$; '$P \star Q$' means $P < Q$. Given $A \,\triangle\, B$, $B \circ C$ and $C \,\square\, D$, which of the following is **definitely true**?

(A) $A \,\triangle\, D$

(B) $D \,\triangle\, A$

(C) $A \circ C$

(D) $B \star D$

Q21. In a row of children facing North, Neha is 9th from the left end and 14th from the right end. If 5 more children join at the right end of the row, what is Neha's new position from the right end?

(A) 18th

(B) 19th

(C) 14th

(D) 20th

Q22. If 15th August 2025 falls on a Friday, what day of the week will 15th August 2026 be? (Note: there is no 29th February between these two dates.)

(A) Friday

(B) Sunday

(C) Saturday

(D) Thursday

Q23. In the grid below, each row follows the same rule: the number in the third column equals (first column $\times$ second column) $+$ first column. Find the value that replaces "?".

3	4	15
5	2	15
7	6	?

(A) 42

(B) 48

(C) 54

(D) 49

Q24. **Question:** What is the two-digit number?

Statement I: The sum of its digits is 11.

Statement II: The tens digit is 3 more than the units digit.

Which statement(s) are sufficient to answer the question?

(A) Both statements together are sufficient, but neither alone is sufficient.

(B) Statement I alone is sufficient.

(C) Statement II alone is sufficient.

(D) Each statement alone is sufficient.

Q25. **Question:** Is the positive integer N divisible by 6?

Statement I: N is divisible by 3.

Statement II: N is an even number.

Which statement(s) are sufficient to answer the question?

(A) Statement I alone is sufficient.

(B) Both statements together are sufficient, but neither alone is sufficient.

(C) Statement II alone is sufficient.

(D) Each statement alone is sufficient.

Q26. Which one of the diagrams below best represents the relationship among **Vegetables**, **Carrots** and **Red objects**? (Every carrot is a vegetable; some carrots and some other vegetables can be red; some red objects are neither.)

(A) Three mutually separate circles.

(B) Three circles, all coinciding completely.

(C) "Carrots" wholly inside "Vegetables", and "Red objects" overlapping both partially.

(D) "Red objects" wholly inside "Carrots".

Q27. Directions (Q27–Q30): The table shows the number of laptops (in thousands) sold by a retailer across five product categories over four years. Study it and answer the questions that follow.

Category	**2021**	**2022**	**2023**	**2024**	**Total**
Gaming	20	25	30	25	100
Business	30	35	40	45	150
Student	40	50	55	55	200
Ultrabook	15	20	25	40	100
Convertible	10	20	20	50	100
Total	115	150	170	215	650

Q27. What is the total number of laptops (in thousands) sold in the year **2023** across all five categories?

(A) 150

(B) 215

(C) 115

(D) 170

Q28. (Refer to the table in Q27.) What is the ratio of the total **Business** laptops sold to the total **Gaming** laptops sold over the four years?

(A) 3 : 2

(B) 2 : 3

(C) 3 : 4

(D) 4 : 3

Q29. (Refer to the table in Q27.) The total **Student** laptops sold over the four years is what percentage of the grand total (650 thousand)? (Answer to the nearest whole number.)

(A) 25%

(B) 31%

(C) 20%

(D) 35%

Q30. (Refer to the table in Q27.) What is the **average** number of laptops (in thousands) sold per year, taken over the four years?

(A) 150.0

(B) 170.0

(C) 162.5

(D) 160.0

Part II: Analytical Reasoning Skills

Q31. Find the next term in the series: 3, 6, 11, 18, 27, ?

(A) 36

(B) 37

(C) 38

(D) 40

Q32. Find the next term in the letter series: B, D, G, K, P, ?

(A) T

(B) U

(C) W

(D) V

Q33. **Author : Novel :: Composer : ?**

(A) Orchestra

(B) Symphony

(C) Stage

(D) Audience

Q34. 4 : 65 :: 6 :? (apply the same rule that takes 4 to 65).

(A) 217

(B) 216

(C) 215

(D) 222

Q35. Three of the following four numbers are alike in sharing a common property. Which one does **not** belong to the group?

(A) 31

(B) 37

(C) 41

(D) 51

Q36. In a certain code, each letter is replaced by the letter that comes **two places after** it in the alphabet (A $\rightarrow$ C, B $\rightarrow$ D, . . .). In this code, how is the word **FROG** written?

(A) HTQK

(B) HSQI

(C) HTQI

(D) GTQI

Q37. Using the same rule as in Q36 (each letter shifted two places forward), the code word **JCPF** stands for which actual word?

(A) HAND

(B) HARD

(C) LAND

(D) BAND

Q38. In a certain code: '$A + B$' means A is the *father* of B; '$A - B$' means A is the *wife* of B; '$A \times B$' means A is the *brother* of B. Given the expression $P - Q \times R$, how is **P** related to **R**?

(A) Sister

(B) Sister-in-law

(C) Mother

(D) Aunt

Q39. Pointing to a man, a woman said, "His mother is the only daughter of my mother." How is the woman related to the man?

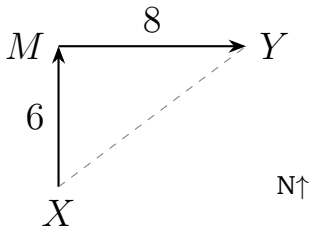
(A) Grandmother

(B) Aunt

(C) Mother

(D) Sister

Q40. A delivery rider starts at point X, rides 6 km North to M, then turns and rides 8 km East to reach Y, as shown below. What is the straight-line distance between X and Y, and in which direction does Y lie from X?



(A) 12 km, North-East

(B) 10 km, North-East

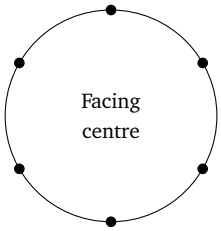
(C) 10 km, South-East

(D) 14 km, North-West

Q41. **Directions (Q41–Q43):** Six friends — A, B, C, D, E and F — sit around a circular table **facing the centre**. The following facts are known:

- A sits directly opposite D.
- B sits immediately to the right of A.
- C sits immediately to the left of D.
- F sits immediately to the right of D.

The empty table is shown below (positions only; work out who sits where).



Q41. Who sits directly opposite B?

(A) C

(B) E

(C) D

(D) F

Q42. (Refer to the arrangement in Q41.) Who sits immediately to the left of A?

(A) E

(B) B

(C) C

(D) F

Q43. (Refer to the arrangement in Q41.) Who sits exactly between C and F (on the shorter arc)?

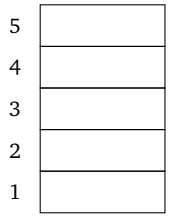
(A) A

(B) E

(C) D

(D) B

Q44. Five people — P, Q, R, S and T — live on a five-storey building, floor 1 being the lowest and floor 5 the highest, one person per floor. T lives on the topmost floor. R lives on floor 1. P lives immediately above Q. S lives on a floor above P. Using the building sketch below, who lives on the **3rd** floor?



(A) Q

(B) S

(C) P

(D) R

Q45. Five students compare their heights. Mohit is taller than Neeraj but shorter than Om. Pranav is shorter than Neeraj. Qadir is taller than Om. Who is the **third tallest** among the five?

(A) Qadir

(B) Om

(C) Neeraj

(D) Mohit

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

Conclusions: (I) Some pens are erasers. (II) Some erasers are pencils.

Which conclusion(s) follow?

(A) Both I and II follow

(B) Only II follows

(C) Only I follows

(D) Neither follows

Q47. **Statements:** All cats are mammals. No mammal is a bird.

Conclusions: (I) No cat is a bird. (II) Some mammals are cats.

Which conclusion(s) follow?

(A) Both I and II follow

(B) Only I follows

(C) Only II follows

(D) Neither follows

Q48. **Statement:** A college notice reads: "All examination forms must be submitted before 5 PM; forms received after this time will not be accepted."

Assumptions: (I) Some students may try to submit their forms late. (II) The office has a way to record the time at which each form is received.

Which assumption(s) are **implicit**?

(A) Only I is implicit

(B) Only II is implicit

(C) Both are implicit

(D) Neither is implicit

Q49. **Statement:** The number of road accidents at an unmarked highway junction has tripled in the past year.

Courses of action: (I) The junction should be provided with proper road markings and traffic signals. (II) The junction should be permanently closed to all traffic.

Which course of action logically follows?

(A) Only II follows

(B) Only I follows

(C) Both follow

(D) Neither follows

Q50. In a certain code: '$P \triangle Q$' means $P > Q$; '$P \square Q$' means $P \geq Q$; '$P \circ Q$' means $P = Q$; '$P \star Q$' means $P < Q$. Given $A \triangle B$, $B \square C$ and $C \circ D$, which of the following is **definitely true**?

(A) $A \triangle D$

(B) $D \triangle A$

(C) $A \circ C$

(D) $B \star D$

Q51. In a row of children facing North, Ravi is 12th from the left end and 18th from the right end. If 4 children at the **left** end leave the row, what is Ravi's new position from the **left** end?

(A) 9th

(B) 12th

(C) 8th

(D) 16th

Q52. If 1st January 2024 is a Monday, what day of the week will 1st January 2025 be? (Note: 2024 is a leap year.)

(A) Monday

(B) Tuesday

(C) Thursday

(D) Wednesday

Q53. In the grid below, each row follows the same rule: the number in the third column equals (first column)^2 + (second column)^2. Find the value that replaces "?".

3	4	25
6	8	100
5	12	?

(A) 144

(B) 169

(C) 149

(D) 179

Q54. **Question:** What is the present age of X?

Statement I: X's age is 3 times Y's present age.
Statement II: Y is 8 years old now.

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 is sufficient.

Q55. **Question:** Is $x > y$ (where x and y are real numbers)?

Statement I: $x + 5 > y + 5$.

Statement II: $x^2 > y^2$.

Which statement(s) are sufficient to answer the question?

(A) Statement II alone is sufficient.

(B) Statement I alone is sufficient.

(C) Both statements together are needed.

(D) Each statement alone is sufficient.

Q56. Which one of the diagrams below best represents the relationship among **Women**, **Mothers** and **Doctors**? (Every mother is a woman; some women are doctors; some mothers are doctors; some doctors are men.)

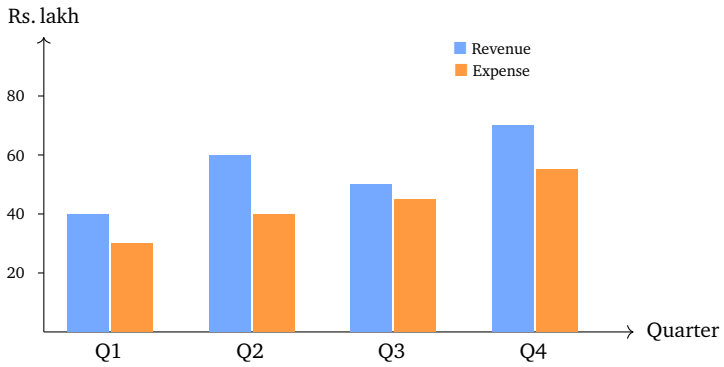
(A) Three mutually separate circles.

(B) "Doctors" wholly inside "Women".

(C) "Mothers" wholly inside "Women", and "Doctors" overlapping both partially.

(D) Three circles all coinciding completely.

Q57. **Directions (Q57–Q60):** The bar chart below shows the quarterly **Revenue** and **Expense** (both in Rs. lakh) of a company over four quarters of a year. Study it and answer the questions that follow.



Q57. What is the **total revenue** (in Rs. lakh) earned by the company over all four quarters?

(A) 220

(B) 200

(C) 210

(D) 230

Q58. (Refer to the bar chart in Q57.) In which quarter is the company's **profit** (Revenue − Expense) the **highest**?

(A) Q1

(B) Q2

(C) Q3

(D) Q4

Q59. (Refer to the bar chart in Q57.) What is the ratio of the **revenue** in Q2 to the **revenue** in Q1?

(A) 2 : 3

(B) 4 : 3

(C) 3 : 2

(D) 3 : 4

Q60. (Refer to the bar chart in Q57.) What is the **average** expense (in Rs. lakh) per quarter over the four quarters?

(A) 40.0

(B) 45.0

(C) 50.0

(D) 42.5

Detailed Solutions

Q1.

Solution

Concept — Number series (difference pattern): Examine the gaps between consecutive terms to find the rule.

Step 1 — List the differences:

$$6-5=1, \quad 9-6=3, \quad 14-9=5, \quad 21-14=7.$$

Step 2 — Identify the rule: The differences are $1, 3, 5, 7$ — consecutive odd numbers. The next difference is 9.

Step 3 — Compute the next term:

$$21+9=30.$$

Why other options are wrong:

- 28 and 29: would require a difference of 7 or 8, breaking the odd-number gap.
- 31: would need a difference of 10, not 9.

Final Answer: The next term is $30 \Rightarrow$ C

Answer: (C) Go Back to Q1

Q2.

Solution

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

Step 1 — Positions:

$$\text{A}=1,\ \text{C}=3,\ \text{F}=6,\ \text{J}=10,\ \text{O}=15.$$

Step 2 — Differences:

$$3-1=2, \quad 6-3=3, \quad 10-6=4, \quad 15-10=5.$$

The gaps are $2, 3, 4, 5$, so the next gap is 6.

Step 3 — Next position:

$$15 + 6 = 21 \Rightarrow \text{the 21st letter} = \text{U}.$$

Why other options are wrong:

- T (20) uses a gap of 5; S (19) and V (22) miss the gap of 6.

Final Answer: The next letter is U $\Rightarrow$ B

Answer: (B) Go Back to Q2

Q3.

Solution

Concept — Instrument : Quantity measured: A measuring device is matched with the physical quantity it measures.

Step 1 — Decode the given pair: A *thermometer* measures *temperature*.

Step 2 — Apply to the second pair: A *barometer* measures atmospheric *pressure*.

Why other options are wrong:

- Humidity is measured by a hygrometer.
- Altitude is measured by an altimeter.
- Rainfall is measured by a rain gauge.

Final Answer: Barometer measures Pressure $\Rightarrow$ A

Answer: (A) Go Back to Q3

Q4.

Solution

Concept — Number analogy: Find a function that maps 7 to 50, then apply the *same* function to 9.

Step 1 — Spot the rule: Note that $7^2 = 49$, and $49 + 1 = 50$. So the rule is "square the number and add 1", i.e. $n^2 + 1$.

Step 2 — Verify on the given pair:

$$7^2 + 1 = 49 + 1 = 50. \checkmark$$

Step 3 — Apply to 9:

$$9^2 + 1 = 81 + 1 = 82.$$

Why other options are wrong:

- 81 is just 9^2 and forgets the "$+1$".
- 79 and 80 do not match the $n^2 + 1$ rule.

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

Answer: (D) Go Back to Q4

Q5.

Solution

Concept — Classification (perfect cubes): Look for a property shared by four of the numbers.

Step 1 — Test each number as a cube:

$$27 = 3^3, \quad 64 = 4^3, \quad 125 = 5^3.$$

These are perfect cubes.

Step 2 — Check 50: 50 is not a perfect cube ($3^3 = 27$, $4^3 = 64$, so nothing cubes to 50). It is also not a perfect square. So 50 breaks the pattern.

Step 3 — Confirm the odd one: $27, 64, 125$ are cubes of $3, 4, 5$. The odd one out is 50.

Why other options are wrong:

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

Final Answer: 50 is not a perfect cube $\Rightarrow \boxed{\text{B}}$

Answer: (B) Go Back to Q5

Q6.

Solution

Concept — Mirror (atbash) code: Each letter maps to its mirror: position $k \to 27 - k$, i.e. A↔Z, B↔Y, etc.

Step 1 — Encode each letter of LOGIC:

- L $= 12 \to 27 - 12 = 15 =$ O
- O $= 15 \to 27 - 15 = 12 =$ L
- G $= 7 \to 27 - 7 = 20 =$ T
- I $= 9 \to 27 - 9 = 18 =$ R
- C $= 3 \to 27 - 3 = 24 =$ X

Step 2 — Assemble: LOGIC $\to$ O L T R X $=$ OLTRX.

Why other options are wrong:

- ORTLX, OLRXT, OLTXR all scramble the correct letter order.

Final Answer: LOGIC $=$ OLTRX $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q6

Q7.

Solution

Concept — Decode the mirror code: The mirror map is its own inverse, so decoding uses the same rule $k \to 27 - k$.

Step 1 — Decode each code letter of XSZIG:

- X $= 24 \to 27 - 24 = 3 =$ C
- S $= 19 \to 27 - 19 = 8 =$ H
- Z $= 26 \to 27 - 26 = 1 =$ A
- I $= 9 \to 27 - 9 = 18 =$ R
- G $= 7 \to 27 - 7 = 20 =$ T

Step 2 — Assemble: XSZIG $\to$ C H A R T $=$ CHART.

Why other options are wrong:

- CHARM, CHASE, CHAIR differ in the last one or two letters, which the mirror map fixes as R then T.

Final Answer: XSZIG = CHART $\Rightarrow$ A

Answer: (A) Go Back to Q7

Q8.

Solution

Concept — Family tree reading: Trace generations from the tree.

Step 1 — Top generation: P and Q are a married couple. R and S are their children.

Step 2 — Next generation: S is married to U, and T is the child of S and U.

Step 3 — Relate T to P: T is the child of S, and S is the child of P. So T is P's child's child, i.e. P's grandchild. (T's exact gender is not given, so "grandchild" is the precise relation, not son/daughter/nephew.)

Why other options are wrong:

- Son/Daughter would make T a child of P, which is one generation too high.
- Nephew would require T to be the child of P's sibling, not of P's child.

Final Answer: T is the grandchild of P $\Rightarrow$ D

Answer: (D) Go Back to Q8

Q9.

Solution

Concept — Coded relation: Break the statement into pieces, innermost first.

Step 1 — "the mother of my brother": Karan's brother's mother is Karan's own mother.

Step 2 — "the only daughter of (my mother)": The only daughter of Karan's mother. Karan is male (he has a brother and is referred to as "he"/Karan), so the only daughter of his mother is Karan's sister.

Step 3 — Conclusion: The lady is the only daughter of Karan's mother, hence Karan's sister.

Why other options are wrong:

- Mother: she is the daughter of the mother, not the mother herself.

- Aunt/Cousin: would require a different parent or generation.

Final Answer: The lady is Karan's sister $\Rightarrow$ B

Answer: (B) Go Back to Q9

Q10.

Solution

Concept — Direction sense (net displacement): Add east/west moves and north/south moves separately, then use Pythagoras.

Step 1 — Net East–West: 7 km East $+ 7$ km East $= 14$ km East.

Step 2 — Net North–South: 4 km North $+ 4$ km North $= 8$ km North.

Step 3 — Straight-line distance:

$$\sqrt{14^2 + 8^2} = \sqrt{196 + 64} = \sqrt{260} \text{ km}.$$

Step 4 — Direction: E is to the East and North of S, i.e. in the North-East direction.

Why other options are wrong:

- $\sqrt{200}$ and $\sqrt{210}$ use wrong net legs.
- South-East and North-West are wrong quadrants; the net move is East and North, i.e. North-East.

Final Answer: $\sqrt{260}$ km, North-East $\Rightarrow$ A

Answer: (A) Go Back to Q10

Q11.

Solution

Concept — Day scheduling (one person per day, Mon–Sun): Place the fixed clues first, then deduce the rest.

Step 1 — Directly fixed days: Charu $=$ Wednesday; Gita $=$ Sunday; Esha $=$ Thursday; Bina $=$ Friday.

Step 2 — Amit immediately before Charu: The day before Wednesday is Tuesday, so Amit $=$ Tuesday.

Step 3 — Remaining people and days: People left = Dev, Farhan. Days left = Monday, Saturday.

Step 4 — Use "Farhan not on Monday": Since Farhan cannot take Monday, Farhan = Saturday, which forces Dev = Monday.

Step 5 — Final grid:

Mon	Tue	Wed	Thu	Fri	Sat	Sun
Dev	Amit	Charu	Esha	Bina	Farhan	Gita

Answer for Q11 (Monday): Dev takes leave on Monday.

Why other options are wrong:

- Charu is Wednesday, Amit is Tuesday, Farhan is Saturday — none is Monday.

Final Answer: Monday = Dev $\Rightarrow$ C

Answer: (C) Go Back to Q11

Q12.

Solution

Concept — Read off the solved grid from Q11. The final schedule is:

Mon	Tue	Wed	Thu	Fri	Sat	Sun
Dev	Amit	Charu	Esha	Bina	Farhan	Gita

Step 1 — Locate Esha: Esha takes leave on Thursday.

Why other options are wrong:

- Tuesday is Amit, Saturday is Farhan, Sunday is Gita.

Final Answer: Esha = Thursday $\Rightarrow$ B

Answer: (B) Go Back to Q12

Q13.

Solution

Concept — Read off the solved grid. Using the same schedule:

Mon	Tue	Wed	Thu	Fri	Sat	Sun
Dev	Amit	Charu	Esha	Bina	Farhan	Gita

Step 1 — Locate Saturday: Saturday is Farhan.

Why other options are wrong:

- Dev is Monday, Esha is Thursday, Bina is Friday.

Final Answer: Saturday $=$ Farhan $\Rightarrow$ C

Answer: (C) Go Back to Q13

Q14.

Solution

Concept — Stacking puzzle: Place the strongest clues first; positions 1 (top) to 6 (bottom).

Step 1 — Fix the ends: History is at the top (position 1). Biology is at the bottom (position 6).

Step 2 — Use adjacency clues: Maths is immediately above Physics (Maths just over Physics). Geography is immediately below Chemistry (Chemistry just over Geography). Chemistry is somewhere above Maths.

Step 3 — Build the order: Order from top: History(1). Below it must come the Chemistry–Geography block then the Maths–Physics block (since Chemistry is above Maths), and Biology last. That gives:

$$1 : \text{History},\ 2 : \text{Chemistry},\ 3 : \text{Geography},\ 4 : \text{Maths},\ 5 : \text{Physics},\ 6 : \text{Biology}.$$

Check: Maths(4) immediately above Physics(5) ✓; Geography(3) immediately below Chemistry(2) ✓; Chemistry(2) above Maths(4) ✓.

Step 4 — Third from top: Position 3 is Geography.

Why other options are wrong:

- Chemistry is 2nd, Maths is 4th, Physics is 5th.

Final Answer: Third from top is Geography $\Rightarrow$ B

Answer: (B) Go Back to Q14

Q15.

Solution

Concept — Comparison ordering: Translate each comparison into a chain.

Step 1 — Write inequalities (">" means more experience):

$$\text{Sameer} > \text{Pooja} > \text{Rahul}, \quad \text{Rahul} > \text{Umesh}, \quad \text{Tarun} > \text{Sameer}.$$

Step 2 — Merge into one order:

$$\text{Tarun} > \text{Sameer} > \text{Pooja} > \text{Rahul} > \text{Umesh}.$$

Step 3 — Identify second-highest: Highest is Tarun; second-highest is Sameer.

Why other options are wrong:

- Tarun is first, Pooja is third, Rahul is fourth.

Final Answer: Second-highest is Sameer $\Rightarrow$ D

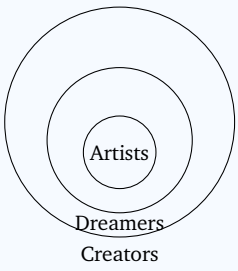
Answer: (D) Go Back to Q15

Q16.

Solution

Concept — Syllogism (two universals chain): Draw nested circles.

Step 1 — Diagram: "All artists are dreamers" puts the Artists circle inside Dreamers. "All dreamers are creators" puts Dreamers inside Creators.



Step 2 — Test Conclusion I: Artists $\subseteq$ Dreamers $\subseteq$ Creators, so all artists are

creators. **I follows.**

Step 3 — Test Conclusion II: Since all artists are creators (and artists exist as a defined set), some creators are artists is the valid converse of a universal here. **II follows.**

Why other options are wrong:

- Any option excluding I or II is incomplete; both are forced by the nesting.

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

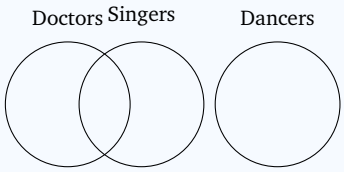
Answer: (A) Go Back to Q16

Q17.

Solution

Concept — Syllogism (Some + No): Draw the overlap and the exclusion.

Step 1 — Diagram: "Some doctors are singers" overlaps Doctors and Singers. "No singer is a dancer" separates Singers entirely from Dancers.



Step 2 — Test Conclusion I: The doctors who are singers cannot be dancers (singers are wholly outside dancers). So at least those doctors are not dancers. **"Some doctors are not dancers" follows.**

Step 3 — Test Conclusion II: "No doctor is a dancer" is too strong: doctors who are *not* singers might still be dancers. **II does not follow.**

Why other options are wrong:

- "Both" and "Only II" wrongly accept the unsupported universal II.
- "Neither" wrongly rejects the valid I.

Final Answer: Only I follows $\Rightarrow$ C

Answer: (C) Go Back to Q17

Q18.

Solution

Concept — Statement & Assumption: An implicit assumption is something the advertiser must take for granted for the ad to make sense.

Step 1 — Test Assumption I: The ad highlights a top-100 rank to attract people. For this to be a selling point, the institute assumes candidates respond to rank promises. **I is implicit.**

Step 2 — Test Assumption II: "The institute can control every candidate's final rank" is an extreme guarantee no coaching can actually make; it is not a reasonable underlying assumption but an unrealistic claim. **II is not implicit.**

Why other options are wrong:

- Options accepting II assume total control over outcomes, which is not implied.
- "Neither" ignores the marketing logic behind I.

Final Answer: Only I is implicit $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q18

Q19.

Solution

Concept — Inference: An inference must be supported by the data without over-generalising.

Step 1 — What the data says: For *this* company, after moving to a four-day week, hourly productivity rose 18% in three months.

Step 2 — Evaluate option D: It states that for this company, fewer working days coincided with higher hourly output — a careful restatement of the given fact. **This is a safe inference.**

Why other options are wrong:

- "Always in every company" over-generalises from one case.
- "Working slowly earlier" assumes motive not stated.
- "Unrelated" contradicts the observed rise.

Final Answer: Fewer days coincided with higher hourly output for this firm $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q19

Q20.

Solution

Concept — Coded inequalities: Translate symbols, then chain.

Step 1 — Decode:

$$A \triangle B \Rightarrow A > B, \quad B \circ C \Rightarrow B = C, \quad C \square D \Rightarrow C \geq D.$$

Step 2 — Combine: $A > B = C \geq D$, so $A > C$ and $C \geq D$, giving $A > D$.

Step 3 — Match to code: $A > D$ is written as $A \triangle D$.

Why other options are wrong:

- $D \triangle A$ ($D > A$) reverses the proven inequality.
- $A \circ C$ ($A = C$) is false since $A > C$.
- $B \star D$ ($B < D$) is false since $B = C \geq D$.

Final Answer: $A > D$, i.e. $A \triangle D \Rightarrow$ A

Answer: (A) Go Back to Q20

Q21.

Solution

Concept — Ranking with row length: First find the total, then recompute positions.

Step 1 — Total children initially: Position from left + position from right -1:

$$9 + 14 - 1 = 22.$$

Step 2 — Add new children: 5 children join the right end, so total becomes $22 + 5 = 27$. Neha's position from the left is unchanged at 9th.

Step 3 — New position from right:

$$27 - 9 + 1 = 19.$$

Why other options are wrong:

- 14th was her original right position before anyone joined.
- 18th and 20th miss the $+1$ or use the wrong total.

Final Answer: 19th from the right $\Rightarrow$ B

Answer: (B) Go Back to Q21

Q22.

Solution

Concept — Calendar (odd days): Moving forward one year shifts the weekday by the number of odd days in between.

Step 1 — Days between the two dates: From 15 Aug 2025 to 15 Aug 2026 is exactly one ordinary year with no 29 Feb in between, i.e. 365 days.

Step 2 — Odd days: $365 = 52 \times 7 + 1$, so 1 odd day.

Step 3 — Shift the weekday: Friday $+ 1$ day $=$ Saturday.

Why other options are wrong:

- Friday would mean 0 odd days (only for a date crossing no extra day).
- Sunday/Thursday use the wrong odd-day count.

Final Answer: 15 Aug 2026 is a Saturday $\Rightarrow$ C

Answer: (C) Go Back to Q22

Q23.

Solution

Concept — Grid rule: Apply the stated rule (col3 $=$ col1$\times$ col2$+$ col1) and verify on known rows.

Step 1 — Verify Row 1: $3 \times 4 + 3 = 12 + 3 = 15$ ✓ (matches the given 15).

Step 2 — Verify Row 2: $5 \times 2 + 5 = 10 + 5 = 15$ ✓ (matches the given 15).

Step 3 — Apply to Row 3:

$$7 \times 6 + 7 = 42 + 7 = 49.$$

Why other options are wrong:

- 42 forgets the "+ first column" term.
- 48 and 54 do not follow the verified rule.

Final Answer: $? = 49 \Rightarrow \boxed{D}$

Answer: (D) Go Back to Q23

Q24.

Solution

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

Step 1 — Statement I alone (digit sum $= 11$): Many numbers qualify: $29, 38, 47, 56, 65, 74, 83, 92$. Not unique. **I alone insufficient.**

Step 2 — Statement II alone (tens $=$ units $+3$): Pairs (units, tens): $(0, 3) \to 30$, $(1, 4) \to 41$, $(2, 5) \to 52$, $(3, 6) \to 63$, $(4, 7) \to 74$, $(5, 8) \to 85$, $(6, 9) \to 96$. Not unique. **II alone insufficient.**

Step 3 — Both together: Let units $= u$ and tens $= u + 3$. The digit sum is $(u + 3) + u = 2u + 3 = 11 \Rightarrow 2u = 8 \Rightarrow u = 4$. Then tens $= 7$, so the number is 74. This is the *only* number satisfying both statements.

Step 4 — Conclusion: Neither statement alone fixes the number, but together they pin it down uniquely to 74. Hence both together are sufficient, neither alone.

Final Answer: Both statements together are sufficient, neither alone $\Rightarrow \boxed{A}$

Answer: (A) Go Back to Q24

Q25.

Solution

Concept — Divisibility by 6: A number is divisible by 6 iff it is divisible by *both* 2 and 3.

Step 1 — Statement I alone (N divisible by 3): N could be 9 (not div. by 6) or 12 (div. by 6). **I alone insufficient.**

Step 2 — Statement II alone (N even): N could be 4 (not div. by 6) or 12 (div. by 6). **II alone insufficient.**

Step 3 — Both together: N divisible by 3 AND even $\Rightarrow$ divisible by 6. Always yes. **Both together sufficient.**

Why other options are wrong:

- Neither single statement guarantees divisibility by 6, so "I alone", "II alone", and "each alone" are wrong.

Final Answer: Both together sufficient, neither alone $\Rightarrow$ B

Answer: (B) Go Back to Q25

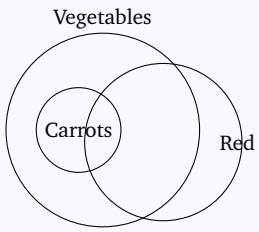
Q26.

Solution

Concept — Logical Venn relationships: Decide containment vs. overlap for each pair.

Step 1 — Carrots vs. Vegetables: Every carrot is a vegetable, so Carrots is wholly inside Vegetables.

Step 2 — Red objects vs. the rest: Some carrots are red, some other vegetables are red, and some red objects are neither vegetables nor carrots. So Red objects overlaps both Vegetables and Carrots partially, but is not contained in either.



Step 3 — Pick the matching description: "Carrots wholly inside Vegetables, and Red objects overlapping both partially" is exactly option (C).

Why other options are wrong:

- Three separate circles ignore that carrots are vegetables.
- Fully coinciding circles are false.
- Red wholly inside Carrots is false (red objects exist outside carrots).

Final Answer: Carrots in Vegetables, Red overlapping both $\Rightarrow$ C

Answer: (C) Go Back to Q26

Q27.

Solution

Concept — Reading a data table (column total): Sum the 2023 column down all five categories.

Step 1 — Add the 2023 figures:

$$30 + 40 + 55 + 25 + 20 = 170.$$

Step 2 — Cross-check: The table's own "Total" row for 2023 reads 170, matching.

Why other options are wrong:

- 150 is the 2022 total; 115 is 2021; 215 is 2024.

Final Answer: 2023 total $= 170$ thousand $\Rightarrow \boxed{\text{D}}$

Answer: (D) Go Back to Q27

Q28.

Solution

Concept — Ratio from row totals: Use the "Total" column for each category.

Step 1 — Read the totals: Business total $= 150$; Gaming total $= 100$.

Step 2 — Form and simplify the ratio:

$$150 : 100 = 3 : 2.$$

Why other options are wrong:

- $2 : 3$ is the inverse; $3 : 4$ and $4 : 3$ use wrong totals.

Final Answer: Business : Gaming $= 3 : 2 \Rightarrow \boxed{\text{A}}$

Answer: (A) Go Back to Q28

Q29.

Solution

Concept — Percentage of grand total: Divide the category total by 650 and multiply by 100.

Step 1 — Student total: 200 (thousand).

Step 2 — Percentage:

$$\frac{200}{650} \times 100 = \frac{20000}{650} \approx 30.77\%.$$

Step 3 — Round: 30.77% rounds to 31%.

Why other options are wrong:

- 25% would need a total of 162.5; 20% needs 130; 35% needs 227.5.

Final Answer: $\approx 31\% \Rightarrow$ B

Answer: (B) Go Back to Q29

Q30.

Solution

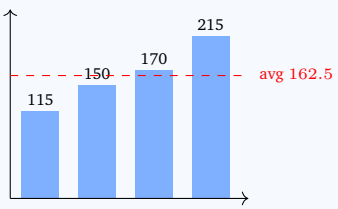
Concept — Average across years: Average yearly sales = grand total ÷ number of years.

Step 1 — Grand total and years: Grand total = 650 (thousand) over 4 years.

Step 2 — Compute the average:

$$\frac{650}{4} = 162.5 \text{ thousand per year.}$$

Step 3 — Cross-check with the yearly totals: $115 + 150 + 170 + 215 = 650$; $650/4 = 162.5$ ✓.



Why other options are wrong:

- $150, 160, 170$ do not equal $650/4$.

Final Answer: Average $= 162.5$ thousand per year $\Rightarrow$ C

Answer: (C) Go Back to Q30

Q31.

Solution

Concept — Number series (difference pattern): Study the gaps between consecutive terms.

Step 1 — List the differences:

$$6 - 3 = 3, \quad 11 - 6 = 5, \quad 18 - 11 = 7, \quad 27 - 18 = 9.$$

Step 2 — Identify the rule: The differences are $3, 5, 7, 9$ — consecutive odd numbers. The next difference is 11.

Step 3 — Compute the next term:

$$27 + 11 = 38.$$

Why other options are wrong:

- 36 and 37 use a gap of 9 or 10, breaking the odd-number pattern.
- 40 needs a gap of 13, skipping 11.

Final Answer: The next term is $38 \Rightarrow$ C

Answer: (C) Go Back to Q31

Q32.

Solution

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

Step 1 — Positions:

$$\text{B} = 2, \ \text{D} = 4, \ \text{G} = 7, \ \text{K} = 11, \ \text{P} = 16.$$

Step 2 — Differences:

$$4-2=2, \quad 7-4=3, \quad 11-7=4, \quad 16-11=5.$$

The gaps are $2, 3, 4, 5$, so the next gap is 6.

Step 3 — Next position:

$$16+6=22 \;\Rightarrow\; \text{the 22nd letter} = \text{V}.$$

Why other options are wrong:

- T (20) and U (21) fall short of the gap of 6; W (23) overshoots it.

Final Answer: The next letter is V $\Rightarrow$ D

Answer: (D) Go Back to Q32

Q33.

Solution

Concept — Creator : Creation: The first term is the person who composes a work; the second term is the work they produce.

Step 1 — Decode the given pair: An *author* produces a *novel* (a written work).

Step 2 — Apply to the second pair: A *composer* produces a *symphony* (a musical work).

Why other options are wrong:

- Orchestra and audience are groups of people, not the work created.
- Stage is a place of performance, not the composition itself.

Final Answer: Composer produces a Symphony $\Rightarrow$ B

Answer: (B) Go Back to Q33

Q34.

Solution

Concept — Number analogy: Find a function that maps 4 to 65, then apply the *same* function to 6.

Step 1 — Spot the rule: Note that $4^3 = 64$, and $64 + 1 = 65$. So the rule is "cube the number and add 1", i.e. $n^3 + 1$.

Step 2 — Verify on the given pair:

$$4^3 + 1 = 64 + 1 = 65. \checkmark$$

Step 3 — Apply to 6:

$$6^3 + 1 = 216 + 1 = 217.$$

Why other options are wrong:

- 216 is just 6^3 and forgets the "$+1$".
- 215 and 222 do not match the $n^3 + 1$ rule.

Final Answer: $6 \to 217 \Rightarrow \boxed{\text{A}}$

Answer: (A) Go Back to Q34

Q35.

Solution

Concept — Classification (prime numbers): Look for a property shared by three of the numbers.

Step 1 — Test each number for primality:

$$31 = \text{prime}, \quad 37 = \text{prime}, \quad 41 = \text{prime}.$$

Step 2 — Check 51: $51 = 3 \times 17$, so it is composite, not prime.

Step 3 — Identify the odd one: Three numbers are prime; 51 is the only composite. So 51 breaks the pattern.

Why other options are wrong:

- 31, 37, 41 have no factors other than 1 and themselves, so each is prime and belongs to the group.

Final Answer: 51 is not prime $\Rightarrow$ D

Answer: (D) Go Back to Q35

Q36.

Solution

Concept — Forward-shift code (+2): Each letter at position k maps to position $k+2$.

Step 1 — Encode each letter of FROG:

- F $= 6 \rightarrow 6+2 = 8 =$ H
- R $= 18 \rightarrow 18+2 = 20 =$ T
- O $= 15 \rightarrow 15+2 = 17 =$ Q
- G $= 7 \rightarrow 7+2 = 9 =$ I

Step 2 — Assemble: FROG $\rightarrow$ H T Q I $=$ HTQI.

Why other options are wrong:

- HTQK, HSQI, GTQI each mis-shift at least one letter.

Final Answer: FROG $=$ HTQI $\Rightarrow$ C

Answer: (C) Go Back to Q36

Q37.

Solution

Concept — Decode the forward-shift code: To decode a +2 shift, move each code letter *two places back* ($k \rightarrow k-2$).

Step 1 — Decode each code letter of JCPF:

- J $= 10 \rightarrow 10-2 = 8 =$ H
- C $= 3 \rightarrow 3-2 = 1 =$ A
- P $= 16 \rightarrow 16-2 = 14 =$ N
- F $= 6 \rightarrow 6-2 = 4 =$ D

Step 2 — Assemble: JCPF $\rightarrow$ H A N D $=$ HAND.

Why other options are wrong:

- HARD, LAND, BAND differ in at least one letter from the decoded H-A-N-D.

Final Answer: JCPF = HAND $\Rightarrow$ A

Answer: (A) Go Back to Q37

Q38.

Solution

Concept — Coded relations: Decode the expression from right to left.

Step 1 — Decode $Q \times R$: '$\times$' means "brother of", so Q is the brother of R.

Step 2 — Decode $P - Q$: '$-$' means "wife of", so P is the wife of Q.

Step 3 — Relate P to R: P is the wife of Q, and Q is R's brother. So P is married to R's brother, which makes P the **sister-in-law** of R.

Why other options are wrong:

- Sister/Mother/Aunt would each require a blood link to R, but P is related only by marriage to R's brother.

Final Answer: P is the sister-in-law of R $\Rightarrow$ B

Answer: (B) Go Back to Q38

Q39.

Solution

Concept — Coded relation: Break the statement into pieces, innermost first.

Step 1 — "the only daughter of my mother": The only daughter of the speaker's (the woman's) mother is the woman herself.

Step 2 — Substitute back: The statement becomes "His mother is the woman (the speaker) herself."

Step 3 — Conclusion: If the man's mother is the woman, then the woman is the man's **mother**.

Why other options are wrong:

- Grandmother/Aunt would place the woman a generation away or on a sibling line, which the statement does not support.
- Sister is wrong: she is the man's mother, not his sibling.

Final Answer: The woman is the man's mother $\Rightarrow$ C

Answer: (C) Go Back to Q39

Q40.

Solution

Concept — Direction sense (net displacement): Combine the perpendicular legs and use Pythagoras.

Step 1 — The two legs: 6 km North, then 8 km East. These are perpendicular.

Step 2 — Straight-line distance:

$$\sqrt{6^2 + 8^2} = \sqrt{36 + 64} = \sqrt{100} = 10 \text{ km}.$$

Step 3 — Direction: Y is to the East and North of X, i.e. in the North-East direction.

Why other options are wrong:

- 12 km and 14 km simply add the legs instead of using Pythagoras.
- South-East and North-West are the wrong quadrants; the net move is East and North.

Final Answer: 10 km, North-East $\Rightarrow$ B

Answer: (B) Go Back to Q40

Q41.

Solution

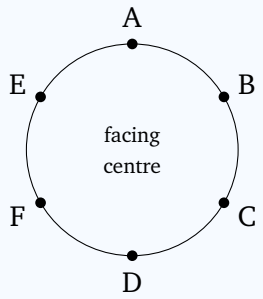
Concept — Circular seating (facing centre): When everyone faces the centre, a person's *right* is clockwise and *left* is anticlockwise. Fix A, then place the others.

Step 1 — Place A and D: Seat A at the top. A sits directly opposite D, so D is at the bottom.

Step 2 — Place B and C: B is immediately to the right of A (one seat clockwise from A). C is immediately to the left of D (one seat anticlockwise from D).

Step 3 — Place F and E: F is immediately to the right of D (one seat clockwise from D). The only seat left goes to E.

Step 4 — Final clockwise order:



Clockwise: A, B, C, D, F, E.

Step 5 — Opposite of B: B is one seat clockwise of A (top); the seat directly opposite B is F.

Why other options are wrong:

- C is opposite E, D is opposite A; only F faces B.

Final Answer: Opposite B sits F $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q41

Q42.

Solution

Concept — Read off the solved circle from Q41. Clockwise order: A, B, C, D, F, E (all facing the centre).

Step 1 — "Left of A" means one seat anticlockwise of A: Going anticlockwise from A, the previous seat in the clockwise list (A, B, C, D, F, E) is E.

Step 2 — Conclusion: E sits immediately to the left of A.

Why other options are wrong:

- B is to the right of A (clockwise), not the left.
- C and F are not adjacent to A.

Final Answer: Left of A sits E $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q42

Q43.

Solution

Concept — Read off the solved circle. Clockwise order: A, B, C, D, F, E.

Step 1 — Locate C and F: In the clockwise order, C and F have exactly one seat between them: ... C, **D**, F ...

Step 2 — Conclusion: The person seated between C and F on the shorter arc is D.

Why other options are wrong:

- A, E and B are not located between C and F on the short arc.

Final Answer: Between C and F sits D $\Rightarrow$ $\boxed{\text{C}}$

Answer: (C) Go Back to Q43

Q44.

Solution

Concept — Floor puzzle: Place the fixed clues first; floor 1 lowest, floor 5 highest.

Step 1 — Fixed floors: T is on floor 5 (top). R is on floor 1.

Step 2 — Remaining people and floors: P, Q, S must take floors $2, 3, 4$.

Step 3 — Use "P immediately above Q": P and Q occupy consecutive floors. Among $\{2, 3, 4\}$ the consecutive pairs are $(2, 3)$ and $(3, 4)$.

Step 4 — Use "S above P": S must be higher than P.

- If $Q = 3, P = 4$, then S would need a floor above 4 from $\{2\}$ — impossible.
- If $Q = 2, P = 3$, then S $= 4$, which is above P(3). ✓

Step 5 — Final arrangement:

$$1 : \text{R},\ 2 : \text{Q},\ 3 : \text{P},\ 4 : \text{S},\ 5 : \text{T}.$$

So the 3rd floor is occupied by P.

Why other options are wrong:

- Q is on floor 2, S on floor 4, R on floor 1 — none is on floor 3.

Final Answer: Floor 3 is P $\Rightarrow$ C

Answer: (C) Go Back to Q44

Q45.

Solution

Concept — Comparison ordering: Translate each comparison into a chain (">" means taller).

Step 1 — Write inequalities:

$$\text{Om} > \text{Mohit} > \text{Neeraj}, \quad \text{Neeraj} > \text{Pranav}, \quad \text{Qadir} > \text{Om}.$$

Step 2 — Merge into one order:

$$\text{Qadir} > \text{Om} > \text{Mohit} > \text{Neeraj} > \text{Pranav}.$$

Step 3 — Identify the third tallest: First Qadir, second Om, third Mohit.

Why other options are wrong:

- Qadir is tallest, Om second, Neeraj fourth.

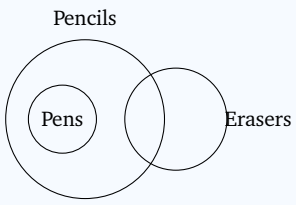
Final Answer: Third tallest is Mohit $\Rightarrow$ D

Answer: (D) Go Back to Q45

Q46.

Solution

Concept — Syllogism (All + Some): Draw the containment and the partial overlap.



Step 1 — Diagram: "All pens are pencils" puts Pens inside Pencils. "Some pencils are erasers" overlaps Pencils and Erasers, but that overlap need not touch the Pens region.

Step 2 — Test Conclusion I: The erasers might overlap only the part of Pencils outside Pens, so "Some pens are erasers" is *not* guaranteed. **I does not follow.**

Step 3 — Test Conclusion II: "Some pencils are erasers" directly converts to "Some erasers are pencils". **II follows.**

Why other options are wrong:

- "Both" and "Only I" wrongly accept the unsupported I.
- "Neither" wrongly rejects the valid conversion II.

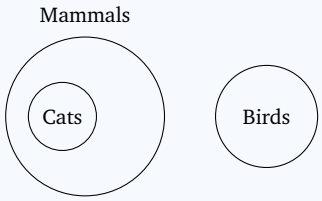
Final Answer: Only II follows $\Rightarrow$ B

Answer: (B) Go Back to Q46

Q47.

Solution

Concept — Syllogism (All + No): Draw the nesting and the exclusion.



Step 1 — Diagram: "All cats are mammals" puts Cats inside Mammals. "No mammal is a bird" separates Mammals entirely from Birds.

Step 2 — Test Conclusion I: Since Cats $\subseteq$ Mammals and Mammals are disjoint from Birds, no cat can be a bird. **I follows.**

Step 3 — Test Conclusion II: Cats exist and lie inside Mammals, so "Some mammals are cats" is the valid particular from "All cats are mammals". **II follows.**

Why other options are wrong:

- Any option excluding I or II is incomplete; both are forced by the diagram.

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

Answer: (A) Go Back to Q47

Q48.

Solution

Concept — Statement & Assumption: An implicit assumption is something taken for granted for the notice to make sense.

Step 1 — Test Assumption I: A deadline with a "late forms not accepted" warning only makes sense if some students might otherwise submit late. **I is implicit.**

Step 2 — Test Assumption II: To enforce "before 5 PM", the office must be able to record or check the time of each submission; otherwise the rule could not be applied. **II is implicit.**

Step 3 — Conclusion: Both assumptions underlie the notice.

Why other options are wrong:

- "Only I" and "Only II" each drop one necessary assumption.
- "Neither" ignores the logic of setting an enforceable deadline.

Final Answer: Both are implicit $\Rightarrow$ $\boxed{\text{C}}$

Answer: (C) Go Back to Q48

Q49.

Solution

Concept — Course of action: A valid course of action must directly address the problem and be reasonable and practical.

Step 1 — Identify the problem: Accidents have tripled at an *unmarked* junction, pointing to poor signage and traffic control as a likely cause.

Step 2 — Test Course I: Adding road markings and traffic signals directly tackles the lack of control and is a standard, proportionate remedy. **I follows.**

Step 3 — Test Course II: Permanently closing the junction to all traffic is an extreme over-reaction that would disrupt normal movement; it is not a reasonable first step. **II does not follow.**

Why other options are wrong:

- "Only II" and "Both" accept the disproportionate closure.
- "Neither" rejects the sensible remedy I.

Final Answer: Only I follows $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q49

Q50.

Solution

Concept — Coded inequalities: Translate symbols, then chain.

Step 1 — Decode:

$$A \triangle B \Rightarrow A > B, \quad B \square C \Rightarrow B \geq C, \quad C \circ D \Rightarrow C = D.$$

Step 2 — Combine: $A > B \geq C = D$, so $A > C$ and $C = D$, giving $A > D$.

Step 3 — Match to code: $A > D$ is written as $A \triangle D$.

Why other options are wrong:

- $D \triangle A$ ($D > A$) reverses the proven inequality.
- $A \circ C$ ($A = C$) is false since $A > C$.
- $B \star D$ ($B < D$) is false since $B \geq C = D$.

Final Answer: $A > D$, i.e. $A \triangle D \Rightarrow$ A

Answer: (A) Go Back to Q50

Q51.

Solution

Concept — Ranking after removal: Work out Ravi's left position, then adjust for children leaving the left end.

Step 1 — Original total (for reference):

$$12 + 18 - 1 = 29 \text{ children.}$$

Step 2 — Effect of 4 leaving from the left: Ravi is 12th from the left. The 4 children who leave are all to his left (positions 1 to 4). Removing them shifts everyone after them forward by 4.

Step 3 — New position from the left:

$$12 - 4 = 8\text{th.}$$

Why other options are wrong:

- 12th is his original left position before anyone left.
- 9th and 16th use the wrong shift.

Final Answer: 8th from the left $\Rightarrow$ C

Answer: (C) Go Back to Q51

Q52.

Solution

Concept — Calendar (odd days): Moving forward one year shifts the weekday by the number of odd days in between.

Step 1 — Days in the year 2024: 2024 is a leap year, so from 1 Jan 2024 to 1 Jan 2025 there are 366 days.

Step 2 — Odd days: $366 = 52 \times 7 + 2$, so 2 odd days.

Step 3 — Shift the weekday: Monday $+ 2$ days $=$ Wednesday.

Why other options are wrong:

- Tuesday would mean 1 odd day (a non-leap year).
- Monday means 0 odd days; Thursday uses 3.

Final Answer: 1 Jan 2025 is a Wednesday $\Rightarrow$ D

Answer: (D) Go Back to Q52

Q53.

Solution

Concept — Grid rule: Apply the stated rule ($\text{col}3 = \text{col}1^2 + \text{col}2^2$) and verify on known rows.

Step 1 — Verify Row 1: $3^2 + 4^2 = 9 + 16 = 25$ ✓ (matches the given 25).

Step 2 — Verify Row 2: $6^2 + 8^2 = 36 + 64 = 100$ ✓ (matches the given 100).

Step 3 — Apply to Row 3:

$$5^2 + 12^2 = 25 + 144 = 169.$$

Why other options are wrong:

- 144 is only 12^2, ignoring 5^2.
- 149 and 179 do not follow the verified rule.

Final Answer: $? = 169 \Rightarrow$ B

Answer: (B) Go Back to Q53

Q54.

Solution

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

Step 1 — Statement I alone ($X = 3Y$): Without knowing Y, X could be any multiple of 3. **I alone insufficient.**

Step 2 — Statement II alone ($Y = 8$): This tells us nothing about X on its own. **II alone insufficient.**

Step 3 — Both together: $X = 3Y = 3 \times 8 = 24$. This fixes X uniquely.

Step 4 — Conclusion: Neither statement alone is enough, but together they give $X = 24$.

Why other options are wrong:

- "I alone", "II alone" and "each alone" all fail, since each statement lacks a needed value.

Final Answer: Both together sufficient, neither alone $\Rightarrow$ D

Answer: (D) Go Back to Q54

Q55.

Solution

Concept — Data sufficiency (inequality): Test whether each statement settles "Is $x > y$?".

Step 1 — Statement I alone ($x + 5 > y + 5$): Subtract 5 from both sides: $x > y$. This answers the question with a definite "yes". **I alone sufficient.**

Step 2 — Statement II alone ($x^2 > y^2$): This means $|x| > |y|$, which does *not* fix the sign comparison. For example, $x = 3, y = 1$ gives $x > y$, but $x = -3, y = 1$

gives $x < y$ while still $x^2 > y^2$. **II alone insufficient.**

Step 3 — Conclusion: Statement I alone settles the question; Statement II alone does not.

Why other options are wrong:

- "II alone" and "each alone" fail because II is ambiguous.
- "Both together" is not needed, since I alone already suffices.

Final Answer: Statement I alone is sufficient $\Rightarrow$ B

Answer: (B) Go Back to Q55

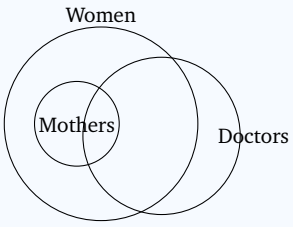
Q56.

Solution

Concept — Logical Venn relationships: Decide containment vs. overlap for each pair.

Step 1 — Mothers vs. Women: Every mother is a woman, so Mothers is wholly inside Women.

Step 2 — Doctors vs. the rest: Some women are doctors and some mothers are doctors, but some doctors are men (outside Women). So Doctors overlaps both Women and Mothers partially, without being contained in either.



Step 3 — Pick the matching description: "Mothers wholly inside Women, and Doctors overlapping both partially" is exactly option (C).

Why other options are wrong:

- Three separate circles ignore that mothers are women.
- Doctors wholly inside Women is false (some doctors are men).
- Fully coinciding circles are false.

Final Answer: Mothers in Women, Doctors overlapping both $\Rightarrow$ C

Answer: (C) Go Back to Q56

Q57.

Solution

Concept — Reading a bar chart (sum the revenue bars): Read each quarter's revenue and add.

Step 1 — Read the revenue values (in Rs. lakh):

$$\text{Q1} = 40, \quad \text{Q2} = 60, \quad \text{Q3} = 50, \quad \text{Q4} = 70.$$

Step 2 — Add them:

$$40 + 60 + 50 + 70 = 220.$$

Why other options are wrong:

- 200, 210 and 230 each mis-add one of the four bars.

Final Answer: Total revenue = Rs. 220 lakh $\Rightarrow$ A

Answer: (A) Go Back to Q57

Q58.

Solution

Concept — Profit per quarter: Profit = Revenue − Expense for each quarter.

Step 1 — Read revenue and expense (Rs. lakh):

Quarter	Revenue	Expense	Profit
Q1	40	30	10
Q2	60	40	20
Q3	50	45	5
Q4	70	55	15

Step 2 — Compare profits: 10, 20, 5, 15. The largest is 20, in Q2.

Why other options are wrong:

- Q1 (10), Q3 (5) and Q4 (15) all have smaller profit than Q2.

Final Answer: Highest profit is in Q2 $\Rightarrow$ B

Answer: (B) Go Back to Q58

Q59.

Solution

Concept — Ratio from the bar chart: Read the two revenue values and simplify.

Step 1 — Read the revenues: Q2 revenue $= 60$; Q1 revenue $= 40$.

Step 2 — Form and simplify the ratio:

$$60 : 40 = 3 : 2.$$

Why other options are wrong:

- $2 : 3$ is the inverse; $4 : 3$ and $3 : 4$ use wrong values.

Final Answer: Q2 : Q1 revenue $= 3 : 2 \Rightarrow$ C

Answer: (C) Go Back to Q59

Q60.

Solution

Concept — Average expense: Average $=$ (sum of the four expenses) $\div 4$.

Step 1 — Read the expense values (Rs. lakh):

$$\text{Q1} = 30, \quad \text{Q2} = 40, \quad \text{Q3} = 45, \quad \text{Q4} = 55.$$

Step 2 — Sum the expenses:

$$30 + 40 + 45 + 55 = 170.$$

Step 3 — Divide by 4:

$$\frac{170}{4} = 42.5 \text{ lakh}.$$

Why other options are wrong:

- 40.0, 45.0 and 50.0 do not equal $170/4$.

Final Answer: Average expense $=$ Rs. 42.5 lakh $\Rightarrow$ D

Answer: (D) Go Back to Q60

Answer Key

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