NATA Aptitude Test (Part B)

Sample Paper – 4

Duration: 90 Minutes **Maximum Marks: 120**

Instructions

- This paper is the **Part B (Aptitude)** portion of the **NATA** (National Aptitude Test in Architecture), with **50** questions for **120 marks**.
- It has two parts: **Part B1 – 42 Multiple Choice Questions** (Q1–Q42, one correct option) and **Part B2 – 8 Numerical Answer Questions** (Q43–Q50, write the answer as a number).
- **Questions 1–30 carry +2 marks each** and **Questions 31–50 carry +3 marks each**. There is **no negative marking**; an unattempted or wrong answer scores 0.
- Questions cover **Mathematics and Numerical Ability**, **Visual and Spatial Reasoning**, **Logical Reasoning**, **Language Interpretation**, **Design Sensitivity**, and **General Knowledge in Architecture and Design**.
- Personal calculators, mobile phones and other electronic gadgets are strictly prohibited.

Part B1: Multiple Choice Questions

Q1. Find the next number in the series: $2,\ 3,\ 5,\ 8,\ 13,\ ?$

(A) 18

(B) 21

(C) 20

(D) 24

Q2. On a construction site, a stock of 9000 bricks is sorted: 40% are full bricks and 35% are half bricks; the rest are broken. How many bricks are broken?

(A) 1800

(B) 2000

(C) 2250

(D) 2700

Q3. Cement and sand on a site are mixed in the ratio $4 : 9$. If the mixture weighs 130 kg in all, what is the weight of the sand?

(A) 40 kg

(B) 80 kg

(C) 90 kg

(D) 100 kg

Q4. The average daily wage of six workers is Rs. 520. If one worker earning Rs. 420 is left out, what is the average wage of the remaining five workers?

(A) Rs. 520

(B) Rs. 540

(C) Rs. 560

(D) Rs. 500

Q5. A loaded truck covers 160 km in 4 hours. At the same speed, how far will it travel in 7 hours?

(A) 280 km

(B) 260 km

(C) 300 km

(D) 320 km

Q6. Find the compound interest on Rs. 20000 for 2 years at 5% per annum, compounded annually.

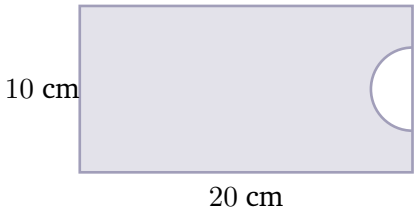
(A) Rs. 2000

(B) Rs. 1000

(C) Rs. 2050

(D) Rs. 2100

Q7. In the figure below, a rectangular wall panel of length 20 cm and breadth 10 cm has a semicircle removed from one short side (radius $= 5$ cm). Using $\pi = 3.14$, find the area of the shaded region.



(A) 160.75 cm^2

(B) 178.50 cm^2

(C) 150.25 cm^2

(D) 200 cm^2

Q8. If $\cos\theta = \frac{12}{13}$ and θ is acute, what is the value of $\tan\theta$?

(A) $\frac{5}{12}$

(B) $\frac{12}{5}$

(C) $\frac{5}{13}$

(D) $\frac{13}{12}$

Q9. What are the roots of the quadratic equation $x^2 - 9x + 20 = 0$?

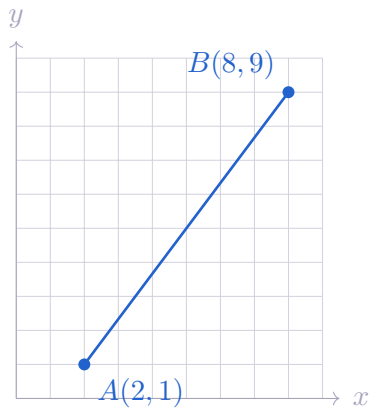
(A) 2 and 10

(B) -4 and -5

(C) 4 and 5

(D) 1 and 20

Q10. Find the distance between the points $A(2, 1)$ and $B(8, 9)$ shown on the grid below.



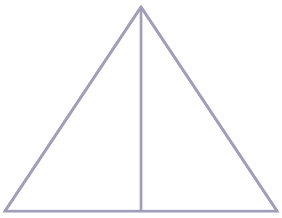
(A) 14

(B) 10

(C) 12

(D) 8

Q11. Count the total number of triangles in the figure below.



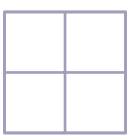
(A) 4

(B) 5

(C) 6

(D) 7

Q12. How many squares (of all sizes) are there in the 2×2 grid shown below?



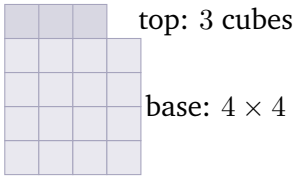
(A) 4

(B) 5

(C) 6

(D) 8

Q13. The solid below is built from identical unit cubes stacked as a 4×4 base with a smaller block on top. How many unit cubes are used in all?



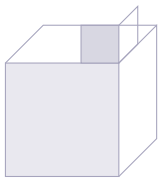
(A) 16

(B) 18

(C) 20

(D) 19

Q14. A solid is made of a cube with a smaller cube sitting on one corner of its top face, as shown. What is its **top view** (the shape seen looking straight down)?



(A) A small square set into one corner of a larger square

(B) A circle inside a square

(C) A single plain square

(D) Two squares side by side

Q15. When the digit **2** (shown below) is held up to a vertical mirror placed to its right, which of the following best describes its reflection?

(A) It looks exactly the same as the original 2

(B) It looks like a back-to-front (laterally flipped) 2

(C) It turns into the digit 5

(D) It turns upside down

Q16. A square sheet is folded once along its horizontal centre line, then a single round hole is punched near the folded edge. When the paper is unfolded, how many holes appear and how are they arranged?

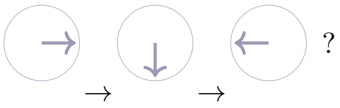
(A) One hole at the centre

(B) Four holes in a square pattern

(C) Two holes placed side by side horizontally

(D) Two holes placed symmetrically about the horizontal centre line, one above the other

Q17. In the series below, an arrow rotates by a fixed angle at each step. Through what angle does it turn from one figure to the next?



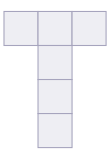
(A) 45° anticlockwise

(B) 180°

(C) 90° clockwise

(D) 90° anticlockwise

Q18. Which of the flat figures described below is a valid **net** that folds up into a closed cube? (A net of a cube has exactly six squares arranged so no two overlap when folded.) The "T" net is shown.



(A) The “T” arrangement of six squares shown above

(B) A row of six squares all in one straight line

(C) A single L-shape of three squares

(D) Five squares forming a plus with one arm missing

Q19. Find the next term in the letter series: $B,\ D,\ G,\ K,\ P,\ ?$

(A) U

(B) V

(C) T

(D) W

Q20. If in a certain code **BRICK** is written as **AQHBJ**, how is **STONE** written in the same code?

(A) RSNMD

(B) RSMND

(C) RTNMD

(D) TUPOF

Q21. Pointing to a man, Meena said, “He is the son of the only daughter of my mother.” How is the man related to Meena?

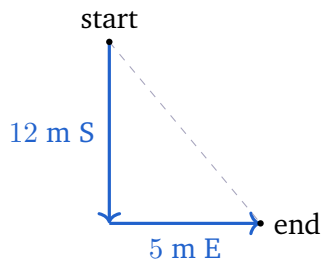
(A) Brother

(B) Father

(C) Son

(D) Cousin

Q22. An engineer walks 12 m South, then turns left and walks 5 m East, as traced below. How far is he from his starting point, and in which general direction?



(A) 17 m, South-East

(B) 13 m, South-East

(C) 7 m, South

(D) 13 m, North-East

Q23. Statements: (i) All bricks are solids. (ii) Some solids are heavy. Which conclusion definitely follows?

(A) All bricks are solids

(B) All solids are bricks

(C) All bricks are heavy

(D) No brick is a solid

Q24. Four engineers W, X, Y and Z sit around a circular table facing the centre. X is to the immediate right of W, and Y is directly opposite W. Who sits to the immediate left of W?

(A) X

(B) Y

(C) W

(D) Z

Q25. What is the angle between the hour hand and the minute hand of a clock at exactly 9:00?

(A) 45°

(B) 60°

(C) 90°

(D) 120°

Q26. Find the odd one out: $49,\ 81,\ 100,\ 120,\ 144$.

(A) 81

(B) 120

(C) 100

(D) 144

Q27. Choose the word that is closest in meaning (synonym) to **ROBUST**.

(A) Sturdy

(B) Fragile

(C) Hollow

(D) Narrow

Q28. Complete the analogy: **Mason** is to **Wall** as **Carpenter** is to _____.

(A) Saw

(B) Nail

(C) Wood

(D) Table

Q29. Choose the word that best completes the sentence: "The engineer ensured the bridge had a _____ foundation so that it could carry heavy traffic for decades."

(A) weak

(B) solid

(C) temporary

(D) cracked

Q30. On the artists' colour wheel, mixing the two primary colours **blue** and **yellow** produces which secondary colour?

(A) Orange

(B) Violet

(C) Green

(D) Brown

Q31. A composition in which different but visually equal elements are arranged on either side of a centre so that no half mirrors the other, yet the whole still feels balanced, is said to have which kind of balance?

(A) Asymmetrical balance

(B) Symmetrical (formal) balance

(C) Radial balance

(D) No balance

Q32. Three of the following are manufactured (man-made) building materials and one is a natural material. Pick the **odd one out**.

(A) Glass

(B) Steel

(C) Plastic

(D) Granite

Q33. Identify the white-marble Mughal mausoleum at Agra shown below.

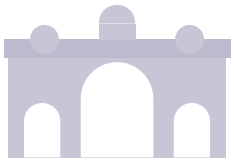
(A) Taj Mahal

(B) Gol Gumbaz

(C) Humayun's Tomb

(D) Charminar

Q34. The triple-arched ceremonial archway shown below faces the harbour at Apollo Bunder. In which city does it stand?



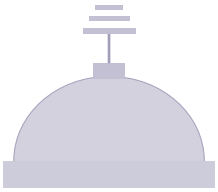
(A) Chennai

(B) Kolkata

(C) Mumbai

(D) Delhi

Q35. The hemispherical relic monument shown below, crowned by a railing and a tiered umbrella, is the Great Stupa at Sanchi. In which country does it stand?



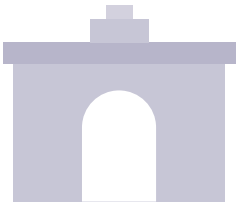
(A) Nepal

(B) India

(C) Sri Lanka

(D) Myanmar

Q36. The free-standing war-memorial archway shown below stands on a ceremonial avenue in New Delhi. Which architect designed it?



(A) Le Corbusier

(B) Charles Correa

(C) B. V. Doshi

(D) Edwin Lutyens

Q37. The tapering, setback skyscraper shown below is the tallest building in the world. It is best described as an example of which kind of architecture?

(A) Modern (contemporary high-rise)

(B) Gothic

(C) Ancient Roman

(D) Mughal

Q38. The famous flat-roofed white house on stilts (pilotis) near Paris, named Villa Savoye, was designed by which architect?

(A) Frank Lloyd Wright

(B) Le Corbusier

(C) Antoni Gaudí

(D) Zaha Hadid

Q39. A South Indian temple entered through a tall, ornate, pyramidal gateway tower called a *gopuram* belongs to which architectural style?

(A) Nagara

(B) Vesara

(C) Dravidian

(D) Gothic

Q40. A beam or slab that is supported at one end only and projects freely into space, like a balcony with no posts beneath its outer edge, is called a:

(A) Cantilever

(B) Lintel

(C) Truss

(D) Plinth

Q41. In construction, the abbreviation **PCC** most commonly stands for which of the following?

(A) Pre-Cast Column

(B) Polished Cement Coating

(C) Pressed Clay Course

(D) Plain Cement Concrete

Q42. The Aga Khan Award, given once every three years, recognises outstanding work in which field?

(A) Film direction

(B) Architecture

(C) Classical dance

(D) Journalism

Part B2: Numerical Answer Questions

Q43. What is 22% of 400? *(Numerical Answer Type: write your answer as a number.)*

Q44. A rectangular sheet measures 17 cm by 8 cm. Find its area (in square cm). *(Numerical Answer Type: write your answer as a number.)*

Q45. An amount of Rs. 120 is divided between two people in the ratio $3 : 5$. How much (in rupees) does the person with the larger share get? *(Numerical Answer Type: write your answer as a number.)*

Q46. Find the amount (in rupees) on Rs. 9000 for 2 years at 10% per annum, compounded annually. *(Numerical Answer Type: write your answer as a number.)*

Q47. A vehicle covers 240 km in 4 hours at a steady pace. Find its speed (in km/h). *(Numerical Answer Type: write your answer as a number.)*

Q48. Find the next term of the series: $5,\ 10,\ 15,\ 20,\ 25,\ ?$ *(Numerical Answer Type: write your answer as a number.)*

Q49. Find the average of the five numbers $56,\ 58,\ 60,\ 62,\ 64$. *(Numerical Answer Type: write your answer as a number.)*

Q50. Two angles of a triangle measure 60° and 55°. Find the third angle (in degrees). *(Numerical Answer Type: write your answer as a number.)*

Detailed Solutions

Q1.

Solution

Concept — Fibonacci-style series: In this kind of series each term is the sum of the two terms just before it.

Step 1 — Test the rule: $2 + 3 = 5$, $3 + 5 = 8$, $5 + 8 = 13$. The rule "add the previous two" holds throughout.

Step 2 — Next term:

$$8 + 13 = 21.$$

Why other options are wrong:

- (A) 18, (C) 20, (D) 24 do not equal $8 + 13$.

Final Answer: The next term is $21 \Rightarrow \boxed{\text{B}}$

Answer: (B) Go Back to Q1

Q2.

Solution

Concept — Percentages of a whole: The parts must add to 100%; the broken bricks are whatever remain.

Step 1 — Percentage broken: $100\% - 40\% - 35\% = 25\%$.

Step 2 — Compute the number:

$$25\% \text{ of } 9000 = \frac{25}{100} \times 9000 = 2250.$$

Why other options are wrong:

- (A) 1800 is 20%; (B) 2000 and (D) 2700 do not match 25% of 9000.

Final Answer: There are 2250 broken bricks $\Rightarrow \boxed{\text{C}}$

Answer: (C) Go Back to Q2

Q3.

Solution

Concept — Dividing in a ratio: Split the total into parts equal to the sum of the ratio terms, then scale.

Step 1 — Value of one part: Total parts $= 4 + 9 = 13$, so one part $= \frac{130}{13} = 10$ kg.

Step 2 — Weight of sand: Sand has 9 parts:

$$9 \times 10 = 90 \text{ kg}.$$

Why other options are wrong:

- (A) 40 kg is the cement share; (B) 80 kg and (D) 100 kg do not fit the $4 : 9$ split of 130.

Final Answer: The sand weighs 90 kg $\Rightarrow$ C

Answer: (C) Go Back to Q3

Q4.

Solution

Concept — Average and total: The total of a set = average $\times$ count. Remove a value by subtracting it from the total.

Step 1 — Original total: $6 \times 520 = 3120$.

Step 2 — New average: Remove 420: new total $= 3120 - 420 = 2700$ over 5 workers, so

$$\text{average} = \frac{2700}{5} = 540.$$

Why other options are wrong:

- (A) Rs. 520 is the old average; (C) Rs. 560 and (D) Rs. 500 are not $2700 \div 5$.

Final Answer: The new average is Rs. 540 $\Rightarrow$ B

Answer: (B) Go Back to Q4

Q5.

Solution

Concept — Constant speed: Distance = speed × time; at fixed speed distance is proportional to time.

Step 1 — Find the speed: speed $= \frac{160}{4} = 40$ km/h.

Step 2 — Distance in 7 h:

$$40 \times 7 = 280 \text{ km}.$$

Why other options are wrong:

- (B) 260 km, (C) 300 km and (D) 320 km use the wrong speed or time.

Final Answer: The truck travels 280 km $\Rightarrow$ A

Answer: (A) Go Back to Q5

Q6.

Solution

Concept — Compound interest: Amount $A = P\left(1 + \frac{r}{100}\right)^n$, and CI $= A - P$.

Step 1 — Amount after 2 years:

$$A = 20000\left(1 + \frac{5}{100}\right)^2 = 20000 \times (1.05)^2 = 22050.$$

Step 2 — Interest: CI $= 22050 - 20000 = 2050$.

Why other options are wrong:

- (A) Rs. 2000 is simple interest; (B) Rs. 1000 is one year only; (D) Rs. 2100 over-counts.

Final Answer: The compound interest is Rs. 2050 $\Rightarrow$ C

Answer: (C) Go Back to Q6

Q7.

Solution

Concept — Composite area: Shaded area = rectangle area − semicircle area.

Step 1 — Rectangle: $20 \times 10 = 200$ cm^2.

Step 2 — Semicircle (radius 5):

$$\tfrac{1}{2}\pi r^2 = \tfrac{1}{2} \times 3.14 \times 5^2 = \tfrac{1}{2} \times 3.14 \times 25 = 39.25 \text{ cm}^2.$$

Step 3 — Subtract: $200 - 39.25 = 160.75$ cm^2.

Why other options are wrong:

- (B) 178.50 uses a wrong semicircle area; (C) 150.25 over-subtracts; (D) 200 ignores the cut entirely.

Final Answer: The shaded area is 160.75 cm^2 $\Rightarrow$ A

Answer: (A) Go Back to Q7

Q8.

Solution

Concept — Right-triangle trig: For $\cos\theta = \frac{\text{adj}}{\text{hyp}}$, find the opposite side by Pythagoras, then form $\tan\theta = \frac{\text{opp}}{\text{adj}}$.

Step 1 — Find the opposite side: With adj $= 12$, hyp $= 13$: opp $= \sqrt{13^2 - 12^2} = \sqrt{25} = 5$.

Step 2 — Form the tangent:

$$\tan\theta = \frac{5}{12}.$$

Why other options are wrong:

- (B) $\frac{12}{5}$ is $\cot\theta$; (C) $\frac{5}{13} = \sin\theta$; (D) $\frac{13}{12} = \sec\theta$.

Final Answer: $\tan\theta = \frac{5}{12} \Rightarrow$ A

Answer: (A) Go Back to Q8

Q9.

Solution

Concept — Factorising a quadratic: For $x^2 - (a+b)x + ab = 0$, the roots are a and b, where $a + b = 9$ and $ab = 20$.

Step 1 — Find the pair: Two numbers with sum 9 and product 20 are 4 and 5, since $4 + 5 = 9$ and $4 \times 5 = 20$.

Step 2 — Write the roots:

$$x = 4 \quad \text{or} \quad x = 5.$$

Why other options are wrong:

- (A) $2, 10$ give product 20 but sum 12; (B) $-4, -5$ give $+9x$ wrong sign; (D) $1, 20$ give sum 21.

Final Answer: The roots are 4 and $5 \Rightarrow$ C

Answer: (C) Go Back to Q9

Q10.

Solution

Concept — Distance formula: For points (x_1, y_1) and (x_2, y_2), distance $= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$.

Step 1 — Differences: $\Delta x = 8 - 2 = 6$, $\Delta y = 9 - 1 = 8$.

Step 2 — Apply the formula:

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

Why other options are wrong:

- (A) $14 = 6 + 8$ adds the legs; (C) 12 and (D) 8 ignore the right-triangle relation.

Final Answer: The distance $AB = 10 \Rightarrow$ B

Answer: (B) Go Back to Q10

Q11.

Solution

Concept — Counting triangles: Count the small triangles first, then combine them into larger ones.

Step 1 — Identify the lines: The big triangle has both slanted medians drawn from the base corners to the apex region and a vertical line from the base midpoint to the apex, meeting at the centre.

Step 2 — Tally: The three internal lines cut the figure into small triangles. Counting the small pieces and the larger composites (including the whole big triangle) gives 6 in total.

Why other options are wrong:

- (A) 4 and (B) 5 miss some composite triangles; (D) 7 double-counts one region.

Final Answer: There are 6 triangles $\Rightarrow$ C

Answer: (C) Go Back to Q11

Q12.

Solution

Concept — Squares in an $n \times n$ grid: The number of squares of all sizes is $1^2 + 2^2 + \cdots + n^2$.

Step 1 — Apply for $n = 2$:

$$1^2 + 2^2 = 1 + 4 = 5.$$

Step 2 — Interpret: There are 4 unit squares and 1 of size 2×2, giving 5 in total.

Why other options are wrong:

- (A) 4 counts only the unit squares; (C) 6 and (D) 8 over-count.

Final Answer: There are 5 squares $\Rightarrow$ B

Answer: (B) Go Back to Q12

Q13.

Solution

Concept — Counting stacked cubes: Add the cubes layer by layer.

Step 1 — Base layer: A 4×4 arrangement uses $4 \times 4 = 16$ cubes.

Step 2 — Top block: A small block of 3 cubes sits on top.

Step 3 — Total:

$$16 + 3 = 19.$$

Why other options are wrong:

- (A) 16 forgets the top; (B) 18 undercounts; (C) 20 adds one too many.

Final Answer: 19 unit cubes are used $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q13

Q14.

Solution

Concept — Orthographic views: The top view shows the outline seen looking straight down, with hidden inner edges drawn as lines.

Step 1 — Look down on the solid: The big cube's top face is a large square; the small cube sitting on one corner appears as a small square tucked into that corner of the outline.

Step 2 — Result: The top view is a small square set into one corner of a larger square.

Why other options are wrong:

- (B) a circle is wrong (no curved parts); (C) a plain square ignores the small cube; (D) two side-by-side squares is a front-style view, not the top.

Final Answer: A small square in one corner of a larger square $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q14

Q15.

Solution

Concept — Mirror images: A vertical mirror swaps left and right (a lateral flip) while keeping up and down the same.

Step 1 — Flip the 2: The digit 2 opens to the left at the top; after a left-right flip its curve opens to the right, giving a back-to-front (laterally reversed) 2.

Step 2 — Confirm: Top and bottom stay the same, so the digit is not turned upside down and does not become a different number.

Why other options are wrong:

- (A) "exactly the same" is false (2 is not symmetric); (C) it does not become a 5 (that needs a 180° rotation); (D) upside-down needs a horizontal mirror.

Final Answer: The reflection is a back-to-front $2 \Rightarrow$ B

Answer: (B) Go Back to Q15

Q16.

Solution

Concept — Paper folding and punching: A single fold creates a line of symmetry; a punch through both layers makes a hole on each layer, mirrored about the fold line.

Step 1 — One horizontal fold: The fold line is the horizontal centre of the sheet. One punch goes through two layers.

Step 2 — Unfold: Two holes appear, one above the other, placed symmetrically about the horizontal centre line.

Why other options are wrong:

- (A) one hole ignores the second layer; (B) four holes needs two folds; (C) "side by side" needs a vertical fold.

Final Answer: Two holes symmetric about the horizontal centre line $\Rightarrow$ D

Answer: (D) Go Back to Q16

Q17.

Solution

Concept — Rotation in a figure series: Measure the turn of the arrow from one frame to the next.

Step 1 — Track the arrow: It points right ($0°$), then down ($-90°$), then left ($-180°$). Each step is a turn of $90°$ in the clockwise sense.

Step 2 — Next term: Continuing $90°$ clockwise, the arrow would point up.

Why other options are wrong:

- (A) $45°$ is too small; (B) $180°$ skips a step; (D) $90°$ anticlockwise turns the wrong way.

Final Answer: The arrow turns $90°$ clockwise each step $\Rightarrow$ C

Answer: (C) Go Back to Q17

Q18.

Solution

Concept — Nets of a cube: A cube net has exactly six squares that fold without overlap into the six faces. The "T" shape is a valid net.

Step 1 — Test the T: The vertical column of four squares wraps round as four faces; the two squares of the top bar fold over as the remaining two faces. No overlap occurs, so it folds into a cube.

Step 2 — Reject the others: A net must have exactly six squares arranged so folding closes the box.

Why other options are wrong:

- (B) a straight row of six squares overlaps when folded; (C) three squares are too few; (D) five squares cannot close all six faces.

Final Answer: The "T" net of six squares folds into a cube $\Rightarrow$ A

Answer: (A) Go Back to Q18

Q19.

Solution

Concept — Letter series by position: Convert letters to their alphabet positions and study the gaps.

Step 1 — Positions: $B = 2, D = 4, G = 7, K = 11, P = 16$. Differences are $2, 3, 4, 5$, so the next gap is 6.

Step 2 — Next letter: $16 + 6 = 22$, and the 22nd letter is V.

Why other options are wrong:

- (A) $U = 21$ uses gap 5; (C) $T = 20$ and (D) $W = 23$ miss the gap of 6.

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

Answer: (B) Go Back to Q19

Q20.

Solution

Concept — Coding by shifting letters: Compare each coded letter with the original to find the rule.

Step 1 — Find the shift: $B \to A, R \to Q, I \to H, C \to B, K \to J$: every letter moves *backward* by 1.

Step 2 — Apply to STONE: $S \to R, T \to S, O \to N, N \to M, E \to D$, giving

RSNMD.

Why other options are wrong:

- (B) RSMND swaps two letters; (C) RTNMD mis-shifts T; (D) TUPOF shifts forward instead of backward.

Final Answer: STONE is coded as RSNMD $\Rightarrow$ A

Answer: (A) Go Back to Q20

Q21.

Solution

Concept — Blood relations: Decode the phrase step by step, starting from the innermost relation.

Step 1 — "The only daughter of my mother": The only daughter of Meena's mother is Meena herself.

Step 2 — "The son of that daughter": The son of Meena is Meena's son.

Why other options are wrong:

- (A) Brother and (D) Cousin are the wrong generation; (B) Father reverses the relation.

Final Answer: The man is Meena's son $\Rightarrow$ C

Answer: (C) Go Back to Q21

Q22.

Solution

Concept — Direction sense as a right triangle: The South leg and the East leg meet at a right angle; the straight-line distance is the hypotenuse.

Step 1 — Apply Pythagoras:

$$\sqrt{12^2 + 5^2} = \sqrt{144 + 25} = \sqrt{169} = 13 \text{ m}.$$

Step 2 — Direction: Moving South then East lands him to the South-East of the start.

Why other options are wrong:

- (A) 17 m adds the legs; (C) 7 m subtracts them; (D) the direction North-East is wrong.

Final Answer: He is 13 m away, to the South-East $\Rightarrow$ B

Answer: (B) Go Back to Q22

Q23.

Solution

Concept — Syllogism (what must follow): A conclusion is valid only if it is forced by the statements.

Step 1 — Restate the given: Statement (i) already says "all bricks are solids," so this is directly true.

Step 2 — Test the others: "Some solids are heavy" does not tell us whether bricks are among the heavy ones, so we cannot conclude all bricks are heavy.

Why other options are wrong:

- (B) reverses the inclusion; (C) is not forced by "some"; (D) contradicts statement (i).

Final Answer: "All bricks are solids" definitely follows $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q23

Q24.

Solution

Concept — Circular seating: For people facing the centre, "left" and "right" are from the seated person's own viewpoint.

Step 1 — Place W and X: X is immediately right of W. Facing the centre, the seat on W's right is taken by X.

Step 2 — Use Y opposite W: With four seats, Y sits opposite W; the only remaining seat, to W's immediate left, is taken by Z.

Why other options are wrong:

- (A) X is on W's right, not left; (B) Y is opposite W; (C) W cannot sit beside itself.

Final Answer: Z sits to W's immediate left $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q24

Q25.

Solution

Concept — Clock angles: The 12 hour marks split the dial into 12 equal gaps of 30° each.

Step 1 — Hand positions at 9:00: The minute hand points to 12, the hour hand to 9. They are 3 hour-gaps apart (from 12 to 9 the short way).

Step 2 — Compute the angle:

$$3 \times 30^\circ = 90^\circ.$$

Why other options are wrong:

- (A) 45° halves it; (B) 60° is two gaps; (D) 120° is four gaps.

Final Answer: The angle is $90^\circ \Rightarrow \boxed{\text{C}}$

Answer: (C) Go Back to Q25

Q26.

Solution

Concept — Odd one out by pattern: Test the numbers against a common rule such as "perfect square."

Step 1 — Check for squares: $49 = 7^2$, $81 = 9^2$, $100 = 10^2$, $144 = 12^2$ are all perfect squares. But 120 is *not* a perfect square (it lies between $10^2 = 100$ and $11^2 = 121$).

Step 2 — Identify the misfit: 120 breaks the "perfect square" pattern.

Why other options are wrong:

- (A) $81 = 9^2$, (C) $100 = 10^2$, (D) $144 = 12^2$ are all genuine squares.

Final Answer: The odd one out is $120 \Rightarrow \boxed{\text{B}}$

Answer: (B) Go Back to Q26

Q27.

Solution

Concept — Synonyms: A synonym has the same meaning. "Robust" means strong and sturdy.

Step 1 — Match the meaning: "Robust" (as in a robust structure) means strong and tough, so its synonym is **Sturdy**.

Why other options are wrong:

- (B) Fragile is the opposite (an antonym); (C) Hollow and (D) Narrow are unrelated to strength.

Final Answer: ROBUST means Sturdy $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q27

Q28.

Solution

Concept — Verbal analogy: Find the relationship in the first pair, then apply the same relation.

Step 1 — First pair: A mason builds a wall; "worker $\rightarrow$ thing made."

Step 2 — Apply it: A carpenter builds a **table** (a wooden article), matching "worker $\rightarrow$ thing made."

Why other options are wrong:

- (A) Saw is a tool, not the product; (B) Nail is a fastener, not the product; (C) Wood is the raw material, not the made thing.

Final Answer: Carpenter is to Table $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q28

Q29.

Solution

Concept — Sentence completion: Pick the word that fits the positive engineering sense of carrying heavy traffic for decades.

Step 1 — Read the meaning: A foundation that supports heavy traffic for decades must be strong and reliable.

Step 2 — Best fit: "Solid" (firm and strong) fits a durable foundation.

Why other options are wrong:

- (A) weak, (C) temporary and (D) cracked all describe a poor foundation and clash with the sentence.

Final Answer: The foundation was "solid" $\Rightarrow$ B

Answer: (B) Go Back to Q29

Q30.

Solution

Concept — Colour theory: Mixing two primaries on the artists' wheel produces a secondary colour.

Step 1 — Mix the primaries: Blue mixed with yellow gives **green**.

Step 2 — Confirm: The other secondaries are orange (red + yellow) and violet (red + blue).

Why other options are wrong:

- (A) Orange is red + yellow; (B) Violet is red + blue; (D) Brown is a muddy mix of many colours, not a clean secondary.

Final Answer: Blue + yellow gives green $\Rightarrow$ C

Answer: (C) Go Back to Q30

Q31.

Solution

Concept — Balance in composition: Balance is how visual weight is distributed. When unlike elements are arranged to feel equal without mirroring, the balance is informal.

Step 1 — Match the description: Different but visually equal elements with no mirror image describe **asymmetrical balance**, common in modern facades.

Why other options are wrong:

- (B) symmetrical needs mirror-image halves; (C) radial radiates from a centre; (D) "no balance" contradicts the statement that it still feels balanced.

Final Answer: Unlike but equal elements give asymmetrical balance $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q31

Q32.

Solution

Concept — Natural vs man-made materials: Manufactured materials are produced by processing; natural materials are used roughly as found.

Step 1 — Classify: Glass, steel and plastic are all manufactured. Granite is a natural rock quarried from the earth.

Step 2 — Odd one out: Granite is the natural material.

Why other options are wrong:

- (A) Glass is made by melting sand; (B) Steel is made from iron ore; (C) Plastic is made from petrochemicals.

Final Answer: The natural material is Granite $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q32

Q33.

Solution

Concept — Reading a monument's silhouette: A central onion dome with a finial, four detached corner minarets and a tall arched entrance on a raised platform is a unique signature.

Step 1 — Match the features: This symmetrical garden-tomb form is the **Taj Mahal**, the white-marble Mughal mausoleum at Agra.

Why other options are wrong:

- (B) Gol Gumbaz is a single huge dome with corner towers, not four slender minarets; (C) Humayun's Tomb has a different dome and no four corner minarets like these; (D) Charminar is a four-minaret gateway, not a domed tomb.

Final Answer: The monument is the Taj Mahal $\Rightarrow$ $\boxed{A}$

Answer: (A) Go Back to Q33

Q34.

Solution

Concept — Identifying a harbour archway: The silhouette shows a large central arch flanked by two smaller arches, topped by a heavy band, small domes and a central dome. This is the **Gateway of India**.

Step 1 — Recall the building: It was built in the Indo-Saracenic style to mark the 1911 visit of King George V, completed in 1924.

Step 2 — Its city: The Gateway of India stands on the waterfront at Apollo Bunder in **Mumbai**.

Why other options are wrong:

- (A) Chennai is known for Fort St. George; (B) Kolkata for the Victoria Memorial; (D) Delhi for India Gate, not this harbour archway.

Final Answer: The Gateway of India is in Mumbai $\Rightarrow$ $\boxed{C}$

Answer: (C) Go Back to Q34

Q35.

Solution

Concept — A hemispherical mound with an umbrella: The silhouette shows a solid dome (anda) on a drum, crowned by a square railing (harmika) and a tiered umbrella (chhatra). This is the Great Stupa at Sanchi.

Step 1 — Recall the site: The Sanchi Stupa was begun under Emperor Ashoka in the 3rd century BCE and is one of the oldest stone structures of its kind.

Step 2 — Its country: Sanchi lies in Madhya Pradesh, so the stupa stands in **India**.

Why other options are wrong:

- (A) Nepal has Boudhanath; (C) Sri Lanka has its own dagobas; (D) Myanmar has Shwedagon, but the Sanchi Stupa is Indian.

Final Answer: The Sanchi Stupa is in India $\Rightarrow \boxed{\text{B}}$

Answer: (B) Go Back to Q35

Q36.

Solution

Concept — A triumphal war memorial: A single large free-standing archway with a heavy cornice in New Delhi is the **India Gate**, a memorial to the First World War dead.

Step 1 — Recall the designer: It was designed by **Edwin Lutyens**, the British architect who planned much of New Delhi, and completed in 1931.

Why other options are wrong:

- (A) Le Corbusier planned Chandigarh; (B) Charles Correa and (C) B. V. Doshi are later Indian architects.

Final Answer: India Gate was designed by Edwin Lutyens $\Rightarrow \boxed{\text{D}}$

Answer: (D) Go Back to Q36

Q37.

Solution

Concept — The world's tallest building: A slender tower that steps inward (setbacks) as it rises and tapers to a thin spire is the **Burj Khalifa** in Dubai, completed in 2010.

Step 1 — Place its style: As a steel-and-glass tower of the 21st century, it is a work of **modern (contemporary high-rise)** architecture, not any historical style.

Why other options are wrong:

- (B) Gothic, (C) Ancient Roman and (D) Mughal are all historical styles unrelated to this modern skyscraper.

Final Answer: The Burj Khalifa is modern architecture $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q37

Q38.

Solution

Concept — Architects and their works: A few houses are landmarks of modern design tied to one architect.

Step 1 — Recall the house: Villa Savoye (1931, Poissy near Paris) was designed by **Le Corbusier**, raised on slender pilotis with a flat roof garden and ribbon windows. It embodies his "Five Points of Architecture."

Why other options are wrong:

- (A) Frank Lloyd Wright designed Fallingwater; (C) Antoni Gaudí designed the Sagrada Família; (D) Zaha Hadid is a later architect of flowing forms.

Final Answer: Villa Savoye is by Le Corbusier $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q38

Q39.

Solution

Concept — Indian temple styles: North and South Indian temples are grouped into named regional styles.

Step 1 — Match the feature: A temple entered through a tall pyramidal gateway tower called a *gopuram*, common in Tamil Nadu (Madurai, Thanjavur), belongs to the **Dravidian** style.

Why other options are wrong:

- (A) Nagara is the North Indian style with a curving shikhara; (B) Vesara is a Deccan hybrid; (D) Gothic is European.

Final Answer: A gopuram-fronted South Indian temple is Dravidian $\Rightarrow$ $\boxed{\text{C}}$

Answer: (C) Go Back to Q39

Q40.

Solution

Concept — Structural terms: Members are named by how they are supported and how they carry load.

Step 1 — Define the term: A **cantilever** is a beam or slab fixed at one end only, projecting freely so its far end has no support beneath it, like an overhanging balcony.

Why other options are wrong:

- (B) Lintel rests on supports at both ends over an opening; (C) Truss is a triangulated frame; (D) Plinth is the base of a wall above ground.

Final Answer: A one-end-supported projecting beam is a cantilever $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q40

Q41.

Solution

Concept — Construction abbreviations: Common site abbreviations stand for materials and layers.

Step 1 — Expand PCC: PCC stands for **Plain Cement Concrete** – a concrete of cement, sand and aggregate *without* steel reinforcement, used as a levelling and base course beneath footings and floors.

Why other options are wrong:

- (A), (B) and (C) are invented expansions; only "Plain Cement Concrete" is the standard meaning.

Final Answer: PCC = Plain Cement Concrete $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q41

Q42.

Solution

Concept — Major prizes by field: Certain prizes are the top honour in a single discipline.

Step 1 — Identify the field: The **Aga Khan Award for Architecture**, given once every three years, recognises building projects that improve the quality of life, especially in communities with a significant Muslim presence.

Why other options are wrong:

- (A) Film, (C) Classical dance and (D) Journalism have their own honours, not the Aga Khan Award.

Final Answer: The Aga Khan Award is for architecture $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q42

Q43.

Solution

Concept — Percentage: $x\%$ of a number N is $\frac{x}{100} \times N$. **Step 1 — Compute:**

$$\frac{22}{100} \times 400 = 88.$$

Final Answer: $\Rightarrow \boxed{88}$

Answer: (88) Go Back to Q43

Q44.

Solution

Concept — Area of a rectangle: area $=$ length $\times$ breadth. **Step 1 — Compute:**

$$17 \times 8 = 136 \text{ cm}^2.$$

Final Answer: $\Rightarrow \boxed{136}$

Answer: (136) Go Back to Q44

Q45.

Solution

Concept — Ratio split: the shares are $\frac{3}{8}$ and $\frac{5}{8}$ of the total. **Step 1 — Larger share:**

$$\frac{5}{8} \times 120 = 75.$$

Final Answer: $\Rightarrow \boxed{75}$

Answer: (75) Go Back to Q45

Q46.

Solution

Concept — Compound interest: amount $= P\left(1+\frac{R}{100}\right)^T$. **Step 1 — Compute:**

$$9000 \times (1.1)^2 = 9000 \times 1.21 = 10890.$$

Final Answer: $\Rightarrow \boxed{10890}$

Answer: (10890) Go Back to Q46

Q47.

Solution

Concept — Speed: speed $= \dfrac{\text{distance}}{\text{time}}$. **Step 1 — Compute:**

$$\frac{240}{4} = 60 \text{ km/h}.$$

Final Answer: $\Rightarrow \boxed{60}$

Answer: (60) Go Back to Q47

Q48.

Solution

Concept — Number series: each term is a multiple of 5 $(5 \times 1,\ 5 \times 2, \ldots)$. **Step 1 — Next term:**

$$5 \times 6 = 30.$$

Final Answer: $\Rightarrow \boxed{30}$

Answer: (30) Go Back to Q48

Q49.

Solution

Concept — Average: average $= \dfrac{\text{sum}}{\text{count}}$. **Step 1 — Compute:**

$$\frac{300}{5} = 60.$$

Final Answer: $\Rightarrow \boxed{60}$

Answer: (60) Go Back to Q49

Q50.

Solution

Concept — Angle sum of a triangle: the three angles add to 180°. **Step 1 — Compute:**

$$180 - 60 - 55 = 65.$$

Final Answer: $\Rightarrow \boxed{65}$

Answer: (65) Go Back to Q50

Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	B	2	C	3	C	4	B	5	A
6	C	7	A	8	A	9	C	10	B
11	C	12	B	13	D	14	A	15	B
16	D	17	C	18	A	19	B	20	A
21	C	22	B	23	A	24	D	25	C
26	B	27	A	28	D	29	B	30	C
31	A	32	D	33	A	34	C	35	B
36	D	37	A	38	B	39	C	40	A
41	D	42	B	43	88	44	136	45	75
46	10890	47	60	48	30	49	60	50	65