

NATA Aptitude Test (Part B)

Sample Paper – 10

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: 4, 9, 7, 12, 10, ?

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

Q2. A paper mill employs 6000 workers; 40% work in pulping and 35% in printing, while the rest work in packing. How many workers are in packing?



- (A) 1200
- (B) 1500
- (C) 1600
- (D) 1800

Q3. Two stacks of paper sheets are in the ratio 4 : 5. If their total is 144 sheets, how many sheets are in the larger stack?

- (A) 64
- (B) 72
- (C) 80
- (D) 88

Q4. The average weight of six reams of paper is 25 kg. If one ream weighing 15 kg is set aside, what is the average weight of the remaining five reams?

- (A) 27 kg
- (B) 26 kg
- (C) 28 kg
- (D) 30 kg

Q5. A delivery van carrying stationery travels 160 km in 4 hours. At the same speed, how far will it travel in 7 hours?

- (A) 240 km
- (B) 260 km
- (C) 280 km
- (D) 300 km

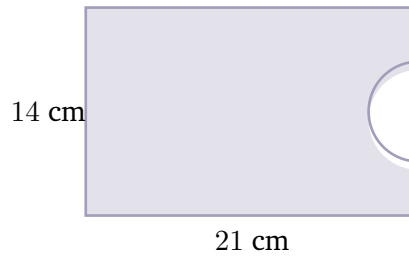
Q6. Find the compound interest on Rs. 20000 for 2 years at 10% per annum, compounded annually.

- (A) Rs. 4000
- (B) Rs. 4400



- (C) Rs. 2200
(D) Rs. 4200

Q7. In the figure below, a rectangular sheet of length 21 cm and breadth 14 cm has a semicircle cut from one short side (radius = 7 cm). Using $\pi = \frac{22}{7}$, find the area of the shaded region.



- (A) 217 cm^2
(B) 294 cm^2
(C) 245 cm^2
(D) 171 cm^2

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

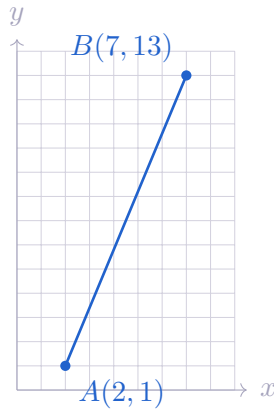
- (A) $\frac{5}{12}$
(B) $\frac{12}{5}$
(C) $\frac{13}{12}$
(D) $\frac{5}{13}$

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

- (A) -4 and -5
(B) 2 and 10
(C) 4 and 5
(D) 1 and 20

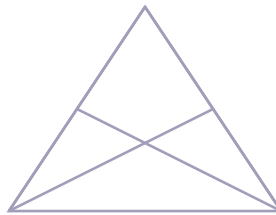
Q10. Find the distance between the points $A(2, 1)$ and $B(7, 13)$ shown on the grid below.





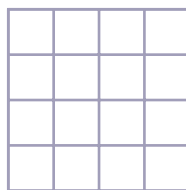
- (A) 17
- (B) 12
- (C) 13
- (D) 15

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



- (A) 5
- (B) 6
- (C) 7
- (D) 8

Q12. How many squares (of all sizes) are there in the 4×4 grid shown below?

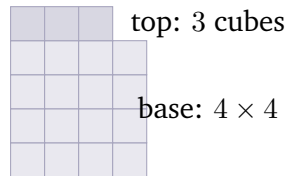


- (A) 16
- (B) 25



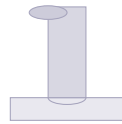
- (C) 30
- (D) 36

Q13. The solid below is built from identical unit cubes: a 4×4 base layer with a smaller block of 3 cubes stacked on top. How many unit cubes are used in all?



- (A) 16
- (B) 18
- (C) 19
- (D) 20

Q14. A solid is made of a cylinder standing upright on a square slab, as shown. What is its **top view** (the shape seen looking straight down)?



- (A) Two squares side by side
- (B) A circle inside a square
- (C) A plain triangle
- (D) A single circle only

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



- (A) It becomes a left-right reversed (laterally flipped) shape of the digit
- (B) It looks exactly the same as the original
- (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?

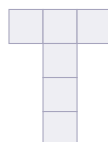
- (A) One hole at the centre
- (B) Four holes in a square pattern
- (C) Two holes placed symmetrically, one above the other about the horizontal centre line
- (D) Two holes side by side

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) 90° anticlockwise
- (B) 45° anticlockwise
- (C) 180°
- (D) 45° clockwise

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.) A standard “T” net is shown.



- (A) A line of eight squares
- (B) The T-shaped arrangement of six squares shown above
- (C) A single L-shape of three squares
- (D) A 2×3 block of six squares that overlaps when folded

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

- (A) *V*
- (B) *U*
- (C) *W*
- (D) *T*

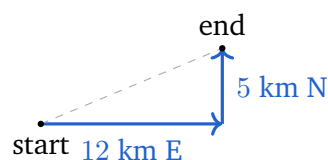
Q20. If in a certain code **PAPER** is written as **UFUJW**, how is **NOTES** written in the same code?

- (A) STYJX
- (B) SYTJX
- (C) STYIW
- (D) STZJW

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) Son
- (C) Nephew
- (D) Father

Q22. A person walks 12 km East, then turns left and walks 5 km North, as traced below. How far is she from her starting point, and in which general direction?



- (A) 17 km, North-East
- (B) 7 km, East
- (C) 13 km, North-East
- (D) 11 km, East

Q23. Statements: (i) All sketches are drawings. (ii) All drawings are artworks. Which conclusion definitely follows?

- (A) All sketches are artworks
- (B) All artworks are sketches
- (C) Some drawings are not artworks
- (D) No sketch is an artwork

Q24. Four students 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 X. Who sits to the immediate left of W?

- (A) X
- (B) Y
- (C) W
- (D) Z

Q25. What is the (smaller) angle between the hour hand and the minute hand of a clock at exactly 7:05?

- (A) 175°
- (B) 177.5°
- (C) 180°
- (D) 172.5°

Q26. Find the odd one out: 16, 81, 100, 625, 343.

- (A) 343
- (B) 625



(C) 100

(D) 81

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

(A) Fragile

(B) Tiny

(C) Sturdy

(D) Smooth

Q28. Complete the analogy: **Sculptor** is to **Statue** as **Composer** is to _____.

(A) Orchestra

(B) Stage

(C) Audience

(D) Symphony

Q29. Choose the word that best completes the sentence: “The library’s reading hall felt _____ and welcoming, thanks to its high windows and warm wooden floors.”

(A) gloomy

(B) spacious

(C) cramped

(D) noisy

Q30. In the standard artists’ colour wheel, which of the following is a set of three **secondary** colours?

(A) Orange, Green, Violet

(B) Red, Yellow, Blue

(C) Red, Green, Blue

(D) Black, White, Grey



- Q31.** A composition in which elements are arranged around a central point so they radiate outward, like the petals of a flower, is said to have which kind of balance?
- (A) Symmetrical (formal) balance
 - (B) Asymmetrical balance
 - (C) Radial balance
 - (D) No balance
- Q32.** Three of the following are manufactured (man-made) building materials and one is natural. Pick the **odd one out**.
- (A) Brick
 - (B) Glass
 - (C) Steel
 - (D) Granite
- Q33.** Identify the monument shown below. Its gleaming exterior is built chiefly of which material?

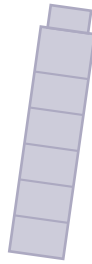


- (A) Red sandstone
 - (B) Granite
 - (C) White marble
 - (D) Black basalt
- Q34.** The ancient royal tombs shown below stand on a desert plateau. In which present-day country are they located?



- (A) Greece
- (B) Iraq
- (C) Egypt
- (D) Mexico

Q35. The famous tilted cylindrical tower shown below stands beside a cathedral in Italy. By what name is it best known?



- (A) The Leaning Tower of Pisa
- (B) Big Ben
- (C) The Qutub Minar
- (D) The Spire of Dublin

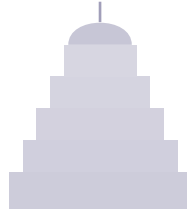
Q36. The tapering, setback skyscraper shown below is currently the tallest building in the world. In which city does it stand?



- (A) Shanghai
- (B) Kuala Lumpur
- (C) New York
- (D) Dubai



Q37. The stepped, pyramidal temple tower shown below rises over the sanctum of a South Indian temple. This form belongs to which architectural style?



- (A) Nagara
 - (B) Dravidian
 - (C) Indo-Saracenic
 - (D) Gothic
- Q38.** The Guggenheim Museum in Bilbao, famous for its sweeping titanium-clad curves, was designed by which architect?
- (A) Zaha Hadid
 - (B) Santiago Calatrava
 - (C) Daniel Libeskind
 - (D) Frank Gehry
- Q39.** A South Indian temple whose entrance is marked by a tall, ornate, pyramidal gateway tower called a *gopuram* belongs to which architectural style?
- (A) Nagara
 - (B) Dravidian
 - (C) Vesara
 - (D) Gothic
- Q40.** A structural member that projects horizontally and is supported at one end only, like a balcony slab, is called a:
- (A) Cantilever



- (B) Lintel
- (C) Plinth
- (D) Truss

- Q41.** In green-building practice, the abbreviation **LEED** refers to a rating system that mainly measures a building's:
- (A) Resale price
 - (B) Environmental and energy performance
 - (C) Floor area only
 - (D) Structural age
- Q42.** The glass-and-metal pyramid that forms the main entrance to the Louvre Museum in Paris was designed by which architect?
- (A) I. M. Pei
 - (B) Renzo Piano
 - (C) Jean Nouvel
 - (D) Norman Foster

Part B2: Numerical Answer Questions

- Q43.** What is 52% of 400? (*Numerical Answer Type: write your answer as a number.*)
- Q44.** A rectangular sheet measures 23 cm by 8 cm. Find its area (in square cm). (*Numerical Answer Type: write your answer as a number.*)
- Q45.** An amount of Rs. 168 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. 15000 for 2 years at 10% per annum, compounded annually. (*Numerical Answer Type: write your answer as a number.*)



- Q47.** A vehicle covers 360 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: 11, 22, 33, 44, 55, ? *(Numerical Answer Type: write your answer as a number.)*
- Q49.** Find the average of the five numbers 80, 82, 84, 86, 88. *(Numerical Answer Type: write your answer as a number.)*
- Q50.** Two angles of a triangle measure 60° and 40° . Find the third angle (in degrees). *(Numerical Answer Type: write your answer as a number.)*



Detailed Solutions

Q1.

Solution

Concept — Alternating-step series: When differences alternate, check the operation applied at each step separately.

Step 1 — Find the differences: $9 - 4 = +5$, $7 - 9 = -2$, $12 - 7 = +5$, $10 - 12 = -2$. The rule alternates $+5$, -2 , $+5$, -2 , ...

Step 2 — Apply the next step: After -2 comes $+5$:

$$10 + 5 = 15.$$

Why other options are wrong:

- (A) 13, (B) 14, (D) 16: none matches the required $+5$ step.

Final Answer: The next term is 15 \Rightarrow

Answer: (C) [Go Back to Q1](#)

Q2.

Solution

Concept — Percentages of a whole: The shares must add to 100%; packing takes whatever remains.

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

Step 2 — Compute the number:

$$25\% \text{ of } 6000 = \frac{25}{100} \times 6000 = 1500.$$

Why other options are wrong:

- (A) 1200 is 20%; (C) 1600 and (D) 1800 do not match 25% of 6000.

Final Answer: There are 1500 packing workers \Rightarrow

Answer: (B) [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 = $4 + 5 = 9$, so one part = $\frac{144}{9} = 16$.

Step 2 — Larger stack: The larger share has 5 parts:

$$5 \times 16 = 80.$$

Why other options are wrong:

- (A) 64 is the smaller stack (4×16); (B) 72 and (D) 88 do not fit the 4 : 5 split of 144.

Final Answer: The larger stack has 80 sheets \Rightarrow

Answer: (C) [Go Back to Q3](#)

Q4.

Solution

Concept — Average and total: Total = average \times count; remove a value by subtracting it from the total.

Step 1 — Original total: $6 \times 25 = 150$ kg.

Step 2 — New average: Remove 15: new total = $150 - 15 = 135$ over 5 reams, so

$$\text{average} = \frac{135}{5} = 27 \text{ kg.}$$

Why other options are wrong:

- (B) 26, (C) 28, (D) 30: none equals $135 \div 5$.

Final Answer: The new average is 27 kg \Rightarrow

Answer: (A) [Go Back to Q4](#)



Q5.

Solution

Concept — Constant speed: Distance = speed \times 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:

- (A) 240 km is 6 h; (B) 260 km and (D) 300 km use the wrong speed or time.

Final Answer: The van travels 280 km \Rightarrow

[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:

$$A = 20000 \left(1 + \frac{10}{100}\right)^2 = 20000 \times (1.1)^2 = 24200.$$

Step 2 — Interest: $CI = 24200 - 20000 = 4200$.

Why other options are wrong:

- (A) Rs. 4000 is simple interest; (B) Rs. 4400 over-counts; (C) Rs. 2200 is one year only.

Final Answer: The compound interest is Rs. 4200 \Rightarrow

[Go Back to Q6](#)



Q7.

Solution

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

Step 1 — Rectangle: $21 \times 14 = 294 \text{ cm}^2$.

Step 2 — Semicircle (radius 7):

$$\frac{1}{2}\pi r^2 = \frac{1}{2} \times \frac{22}{7} \times 7^2 = \frac{1}{2} \times \frac{22}{7} \times 49 = 77 \text{ cm}^2.$$

Step 3 — Subtract: $294 - 77 = 217 \text{ cm}^2$.

Why other options are wrong:

- (B) 294 ignores the cut; (C) 245 subtracts a full circle's quarter wrongly; (D) 171 uses a wrong semicircle area.

Final Answer: The shaded area is $217 \text{ cm}^2 \Rightarrow \boxed{\text{A}}$

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 $\text{adj} = 12$, $\text{hyp} = 13$: $\text{opp} = \sqrt{13^2 - 12^2} = \sqrt{25} = 5$.

Step 2 — Form the tangent:

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

Why other options are wrong:

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

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

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) $-4, -5$ give the wrong middle sign; (B) 2, 10 and (D) 1, 20 give product 20 but sum $\neq 9$.

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: $\Delta x = 7 - 2 = 5$, $\Delta y = 13 - 1 = 12$.

Step 2 — Apply the formula:

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

Why other options are wrong:

- (A) $17 = 5 + 12$ adds the legs; (B) 12 and (D) 15 ignore the right-triangle relation.

Final Answer: The distance $AB = 13 \Rightarrow$ C

Answer: (C) [Go Back to Q10](#)



Q11.

Solution

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

Step 1 — The two cevians: The big triangle has two lines drawn from the base vertices crossing inside, creating several small regions.

Step 2 — Tally: The crossing of the two cevians inside the outer triangle produces small triangles that combine with the outer triangle. Careful counting gives 8 triangles in all (small, medium and the whole figure).

Why other options are wrong:

- (A) 5 and (B) 6 miss composite triangles; (C) 7 misses one combination.

Final Answer: There are 8 triangles \Rightarrow

Answer: (D) [Go Back to Q11](#)

Q12.

Solution

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

Step 1 — Apply for $n = 4$:

$$1^2 + 2^2 + 3^2 + 4^2 = 1 + 4 + 9 + 16 = 30.$$

Step 2 — Interpret: 16 unit squares, 9 of size 2×2 , 4 of size 3×3 , and 1 of size 4×4 , giving 30 in total.

Why other options are wrong:

- (A) 16 counts only unit squares; (B) 25 and (D) 36 miss or over-count a size.

Final Answer: There are 30 squares \Rightarrow

Answer: (C) [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 under-counts; (D) 20 adds one too many.

Final Answer: 19 unit cubes are used \Rightarrow

[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 square slab's top face is a square; the cylinder centred on it appears as a circle inside that square outline.

Step 2 — Result: The top view is a circle nested inside a square.

Why other options are wrong:

- (A) two squares ignore the round cylinder; (C) a triangle has no place here; (D) a circle alone drops the square slab.

Final Answer: A circle inside a square \Rightarrow

[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 is not symmetrical left-to-right, so a vertical mirror produces a left-right reversed version of its shape (its curves now open the other way).

Step 2 — Confirm: It does not become a 5 (that would need a 180° rotation), is not unchanged, and is not flipped top-to-bottom.

Why other options are wrong:

- (B) “same” is false for an asymmetric digit; (C) the digit 5 comes from rotation, not reflection; (D) upside-down needs a horizontal mirror.

Final Answer: A left-right reversed shape of the digit \Rightarrow

Answer: (A) [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; (D) “side by side” needs a vertical fold.

Final Answer: Two holes, one above the other, symmetric about the centre line \Rightarrow

Answer: (C) [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-right (-45°), then down (-90°). Each step is a turn of 45° in the clockwise sense.

Step 2 — Next term: Continuing 45° clockwise, the arrow would point down-left (-135°).

Why other options are wrong:

- (A) 90° anticlockwise is the wrong size and direction; (B) 45° anticlockwise turns the wrong way; (C) 180° skips steps.

Final Answer: The arrow turns 45° clockwise each step \Rightarrow **D**

Answer: (D) [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 side faces; the two squares of the top row become the top and one side. No overlap occurs, so it folds into a cube.

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

Why other options are wrong:

- (A) eight squares are too many; (C) three squares are too few; (D) a 2×3 block overlaps when folded.

Final Answer: The T of six squares folds into a cube \Rightarrow **B**

Answer: (B) [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:

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

Final Answer: The next letter is $V \Rightarrow \boxed{A}$

Answer: (A) [Go Back to Q19](#)

Q20.

Solution

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

Step 1 — Find the shift: $P \rightarrow U, A \rightarrow F, P \rightarrow U, E \rightarrow J, R \rightarrow W$: every letter moves forward by 5.

Step 2 — Apply to NOTES: $N(14) \rightarrow S(19), O(15) \rightarrow T(20), T(20) \rightarrow Y(25), E(5) \rightarrow J(10), S(19) \rightarrow X(24)$, giving

STYJX.

Why other options are wrong:

- (B) SYTJX swaps the 2nd and 3rd letters; (C) STYIW mis-shifts E and S ; (D) STZJW mis-shifts T and S .

Final Answer: NOTES is coded as STYJX $\Rightarrow \boxed{A}$

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 (Meena)”: The son of Meena is Meena’s son.

Why other options are wrong:

- (A) Brother would need a sibling, but Meena is the only daughter; (C) Nephew and (D) Father are the wrong generation.

Final Answer: The man is Meena’s son \Rightarrow **B**

Answer: (B) [Go Back to Q21](#)

Q22.

Solution

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

Step 1 — Apply Pythagoras:

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

Step 2 — Direction: Moving East then North lands her to the North-East of the start.

Why other options are wrong:

- (A) 17 km adds the legs; (B) 7 km subtracts them; (D) 11 km is unrelated.

Final Answer: She is 13 km away, to the North-East \Rightarrow **C**

Answer: (C) [Go Back to Q22](#)



Q23.

Solution

Concept — Syllogism (chaining sets): If all A are B and all B are C, then all A are C.

Step 1 — Chain the statements: All sketches \subseteq drawings \subseteq artworks, so every sketch is an artwork.

Step 2 — Check direction: The reverse (all artworks are sketches) does not follow.

Why other options are wrong:

- (B) reverses the inclusion; (C) and (D) contradict the given “all” statements.

Final Answer: All sketches are artworks \Rightarrow

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. With four seats round the table, the remaining two seats are for Y and Z.

Step 2 — Use Y opposite X: Y sits opposite X. The only seat left, 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 X; (C) W cannot sit beside itself.

Final Answer: Z sits to W’s immediate left \Rightarrow

Answer: (D) [Go Back to Q24](#)



Q25.

Solution

Concept — Clock angles: Use $\theta = |30H - 5.5M|$, where H is the hour and M the minutes; if this exceeds 180° , take $360^\circ - \theta$.

Step 1 — Substitute $H = 7, M = 5$:

$$\theta = |30 \times 7 - 5.5 \times 5| = |210 - 27.5| = 182.5^\circ.$$

Step 2 — Take the smaller angle: Since $182.5^\circ > 180^\circ$, the angle between the hands is

$$360^\circ - 182.5^\circ = 177.5^\circ.$$

Why other options are wrong:

- (A) 175° ignores the hour-hand drift; (C) 180° assumes the hands are exactly opposite; (D) 172.5° mis-applies the $5.5M$ term.

Final Answer: The angle at 7:05 is $177.5^\circ \Rightarrow$ **B**

Answer: (B) [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: $16 = 4^2$, $81 = 9^2$, $100 = 10^2$, $625 = 25^2$ are all perfect squares. But $343 = 7^3$ is a perfect *cube*, not a square.

Step 2 — Identify the misfit: 343 breaks the “square” pattern.

Why other options are wrong:

- (B) 625, (C) 100, (D) 81 are all genuine perfect squares.

Final Answer: The odd one out is 343 \Rightarrow **A**

Answer: (A) [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, healthy and well-built, so its synonym is **Sturdy**.

Why other options are wrong:

- (A) Fragile is the opposite (an antonym); (B) Tiny and (D) Smooth are unrelated to strength.

Final Answer: ROBUST means Sturdy ⇒

[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 sculptor creates a statue; “maker → thing made.”

Step 2 — Apply it: A composer creates a **Symphony**, matching “maker → thing made.”

Why other options are wrong:

- (A) Orchestra performs the work but is not made by the composer; (B) Stage is only a place; (C) Audience merely listens.

Final Answer: Composer is to Symphony ⇒

[Go Back to Q28](#)



Q29.

Solution

Concept — Sentence completion: Pick the word that fits the warm, positive tone of the sentence.

Step 1 — Read the tone: High windows and warm wooden floors describe an open, pleasant hall, so a positive spatial word is needed.

Step 2 — Best fit: “Spacious” (roomy and open) fits a welcoming reading hall.

Why other options are wrong:

- (A) gloomy, (C) cramped and (D) noisy are all negative and clash with “welcoming.”

Final Answer: The hall felt “spacious” ⇒

[Go Back to Q29](#)

Q30.

Solution

Concept — Colour theory: On the artists’ wheel, secondary colours are made by mixing two primaries.

Step 1 — Recall the secondaries: Mixing the primaries in pairs gives **Orange** (red+yellow), **Green** (yellow+blue) and **Violet** (blue+red).

Step 2 — Confirm: These three are the secondary colours.

Why other options are wrong:

- (B) red/yellow/blue are the artists’ primaries; (C) red/green/blue are the light (additive) primaries; (D) black/white/grey are neutrals.

Final Answer: The secondaries are Orange, Green, Violet ⇒

[Go Back to Q30](#)



Q31.

Solution

Concept — Balance in composition: Balance is how visual weight is distributed. When elements radiate from a centre, the balance is radial.

Step 1 — Match the description: Elements arranged around a central point and radiating outward, like flower petals or a rose window, show **radial balance**.

Why other options are wrong:

- (A) symmetrical mirrors left and right about an axis; (B) asymmetrical uses unlike but balanced parts; (D) “no balance” contradicts the ordered radiation.

Final Answer: Elements radiating from a centre give radial balance ⇒

[Go Back to Q31](#)

Q32.

Solution

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

Step 1 — Classify: Brick (moulded and fired clay), Glass (melted sand) and Steel (smelted iron) are manufactured. Granite is a natural rock, quarried as found.

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

Why other options are wrong:

- (A) Brick, (B) Glass and (C) Steel are all manufactured by processing raw materials.

Final Answer: The natural material is Granite ⇒

[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 Mughal mausoleum at Agra, clad in gleaming **white marble**.

Why other options are wrong:

- (A) red sandstone is used in many Mughal forts and gates, not the Taj's shell;
- (B) Granite and (D) black basalt are not the Taj's main facing.

Final Answer: The Taj Mahal is built chiefly of white marble ⇒

[Go Back to Q33](#)

Q34.

Solution

Concept — Identifying ancient tombs: A group of large smooth-sided triangular tombs on a desert plateau is unmistakable.

Step 1 — Recall the location: These are the **Pyramids of Giza**, the royal tombs of ancient pharaohs, which stand in **Egypt**.

Why other options are wrong:

- (A) Greece has classical temples; (B) Iraq has ziggurats; (D) Mexico's pyramids are stepped, not smooth-sided like these.

Final Answer: The pyramids stand in Egypt ⇒

[Go Back to Q34](#)



Q35.

Solution

Concept — A tower known by its tilt: A cylindrical, multi-storey bell tower leaning visibly to one side, beside a cathedral in Italy, is famous worldwide.

Step 1 — Name it: This is the **Leaning Tower of Pisa**, the free-standing campanile (bell tower) of Pisa Cathedral, which began to tilt during construction because of soft ground.

Why other options are wrong:

- (B) Big Ben is a clock tower in London; (C) the Qutub Minar is a tapering Indian minaret; (D) the Spire of Dublin is a thin modern needle.

Final Answer: It is the Leaning Tower of Pisa ⇒

[Go Back to Q35](#)

Q36.

Solution

Concept — A record-breaking skyscraper: A very tall, tapering tower with stepped setbacks and a thin spire is a landmark super-tall building.

Step 1 — Recall the city: The world's tallest building, the **Burj Khalifa**, stands in **Dubai**, United Arab Emirates.

Why other options are wrong:

- (A) Shanghai's tall tower (Shanghai Tower) is shorter; (B) Kuala Lumpur has the Petronas Towers; (C) New York's tallest is shorter than the Burj Khalifa.

Final Answer: The tallest building stands in Dubai ⇒

[Go Back to Q36](#)



Q37.

Solution

Concept — Indian temple styles: A tall, stepped, pyramidal tower over a South Indian sanctum (the vimana) marks one regional style.

Step 1 — Match the feature: A pyramidal, tiered temple tower of South India (as at Thanjavur or Madurai) belongs to the **Dravidian** style.

Why other options are wrong:

- (A) Nagara is the North Indian curving-shikhara style; (C) Indo-Saracenic is a colonial-era hybrid; (D) Gothic is European.

Final Answer: The pyramidal South Indian tower is Dravidian ⇒ **B**

Answer: (B) [Go Back to Q37](#)

Q38.

Solution

Concept — Architects and their works: A few landmark buildings are tied closely to one architect's name.

Step 1 — Recall the architect: The **Guggenheim Museum Bilbao** (1997), wrapped in flowing titanium curves, was designed by **Frank Gehry**, a leading figure of deconstructivist architecture.

Why other options are wrong:

- (A) Zaha Hadid designed the Heydar Aliyev Center; (B) Calatrava is known for bridges and stations; (C) Libeskind designed the Jewish Museum Berlin.

Final Answer: The Bilbao Guggenheim is by Frank Gehry ⇒ **D**

Answer: (D) [Go Back to Q38](#)



Q39.

Solution

Concept — Indian temple styles: South Indian temples are often marked by towering entrance gateways.

Step 1 — Match the feature: A tall, ornate, pyramidal gateway tower called a *gopuram* is characteristic of the **Dravidian** (South Indian) style.

Why other options are wrong:

- (A) Nagara temples have a curving shikhara, not a gopuram; (C) Vesara is a Deccan hybrid; (D) Gothic is European.

Final Answer: A gopuram-gated temple is Dravidian ⇒ **B**

Answer: (B) [Go Back to Q39](#)

Q40.

Solution

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

Step 1 — Define the term: A **cantilever** is a beam or slab fixed (supported) at one end only, projecting freely at the other, as in a balcony or a diving board.

Why other options are wrong:

- (B) Lintel spans an opening and is supported at both ends; (C) Plinth is the base of a wall above ground; (D) Truss is a triangulated frame.

Final Answer: A member fixed at one end is a cantilever ⇒ **A**

Answer: (A) [Go Back to Q40](#)

Q41.

Solution

Concept — Green-building rating systems: Some abbreviations name systems that score how sustainable a building is.

Step 1 — Expand LEED: LEED (Leadership in Energy and Environmental Design) rates a building mainly on its **environmental and energy performance** – energy use, water, materials, indoor quality and site.



Why other options are wrong:

- (A) resale price, (C) floor area and (D) structural age are not what LEED measures.

Final Answer: LEED measures environmental and energy performance \Rightarrow

Answer: (B) [Go Back to Q41](#)

Q42.

Solution

Concept — Architects and their works: Some famous additions to historic buildings are tied to one designer.

Step 1 — Recall the architect: The glass-and-metal **Louvre Pyramid** (1989) in Paris was designed by **I. M. Pei**, the Chinese-American architect.

Why other options are wrong:

- (B) Renzo Piano co-designed the Pompidou Centre; (C) Jean Nouvel designed the Arab World Institute; (D) Norman Foster designed the Gherkin.

Final Answer: The Louvre Pyramid is by I. M. Pei \Rightarrow

Answer: (A) [Go Back to Q42](#)

Q43.

Solution

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

$$\frac{52}{100} \times 400 = 208.$$

Final Answer: \Rightarrow

Answer: (208) [Go Back to Q43](#)



Q44.

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

$$23 \times 8 = 184 \text{ cm}^2.$$

Final Answer: \Rightarrow [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:**

$$\frac{5}{8} \times 168 = 105.$$

Final Answer: \Rightarrow [Go Back to Q45](#)

Q46.

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

$$15000 \times (1.1)^2 = 15000 \times 1.21 = 18150.$$

Final Answer: \Rightarrow [Go Back to Q46](#)

Q47.

Solution

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

$$\frac{360}{4} = 90 \text{ km/h.}$$

Final Answer: \Rightarrow

Answer: (90) [Go Back to Q47](#)

Q48.

Solution

Concept — Number series: each term is a multiple of 11 ($11 \times 1, 11 \times 2, \dots$).

Step 1 — Next term:

$$11 \times 6 = 66.$$

Final Answer: \Rightarrow

Answer: (66) [Go Back to Q48](#)

Q49.

Solution

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

$$\frac{420}{5} = 84.$$

Final Answer: \Rightarrow

Answer: (84) [Go Back to Q49](#)



Q50.

Solution

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

Compute:

$$180 - 60 - 40 = 80.$$

Final Answer: \Rightarrow

[Go Back to Q50](#)



Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	C	2	B	3	C	4	A	5	C
6	D	7	A	8	A	9	C	10	C
11	D	12	C	13	C	14	B	15	A
16	C	17	D	18	B	19	A	20	A
21	B	22	C	23	A	24	D	25	B
26	A	27	C	28	D	29	B	30	A
31	C	32	D	33	C	34	C	35	A
36	D	37	B	38	D	39	B	40	A
41	B	42	A	43	208	44	184	45	105
46	18150	47	90	48	66	49	84	50	80

