UCEED Sample Paper

Duration: 180 Minutes **Maximum Marks: 300**

Instructions

- This is a full-length UCEED practice paper. **Part A** (Q1–Q57, 200 marks, computer-based) has three sections: **Section 1** NAT, Numerical Answer Type (Q1–Q14); **Section 2** MSQ, Multiple Select Questions (Q15–Q29); **Section 3** MCQ, Multiple Choice Questions (Q30–Q57). **Part B** (Q58–Q59, 100 marks, pen and paper) tests drawing and design aptitude.
- **Marking - Part A:** NAT: **+4**, no negative marking. MSQ: **+4** if all correct options and no wrong option are chosen; **+1** for each correct option chosen when no wrong option is chosen; **−1** if any wrong option is chosen. MCQ: **+3** for correct, **−0.71** for wrong.
- **Marking - Part B:** each of the two questions carries **50 marks**, evaluated on your drawing and design response. There is no negative marking in Part B.
- Tap **View Solution** (Part A) or **View Model Approach** (Part B) under any question to jump to its worked explanation. Calculators and electronic gadgets are not allowed.

Section 1: Numerical Answer Type (NAT)

Q1. There are apples and oranges in a basket that can carry a maximum of 50 fruits. Some fruits are rotten and some are good. The number of rotten apples is twice the number of good apples. The number of good oranges is twice the number of rotten oranges. The number of oranges is thrice the number of apples. If there are more than 40 fruits in the basket, what is the total number of apples and oranges?

(Numerical Answer Type - enter a numerical value; no options.)

View Solution

Q2. A wooden cube of side 5 cm is painted on all six faces and then cut into unit cubes of side 1 cm. How many of the small cubes have exactly two painted faces?

(Numerical Answer Type - enter a numerical value; no options.)

View Solution

Q3. A logo is 4 cm wide and 3 cm tall. It is enlarged proportionally so that its new width becomes 10 cm. What is the new height, in centimetres?

(Numerical Answer Type - enter a numerical value; no options.)

View Solution

Q4. In typography, 1 pica equals 12 points. How many points are there in 6 picas?

(Numerical Answer Type - enter a numerical value; no options.)

View Solution

Q5. A digital image is 800 pixels wide and is set to print at a resolution of 100 pixels per inch. What is the printed width of the image, in inches?

(Numerical Answer Type - enter a numerical value; no options.)

View Solution

Q6. Find the next number in the sequence: 2, 6, 12, 20, 30, ...

(Numerical Answer Type - enter a numerical value; no options.)

View Solution

Q7. A cylindrical tin can has a radius of 7 cm and a height of 10 cm. Taking $\pi = \frac{22}{7}$, what is its volume in cubic centimetres?

(Numerical Answer Type - enter a numerical value; no options.)

View Solution

Q8. A rectangular floor measures 6 m by 4 m. It is to be fully covered with square tiles of side 0.5 m. How many tiles are needed?

(Numerical Answer Type - enter a numerical value; no options.)

View Solution

Q9. A designer chair is marked at Rs 2000. A store offers two successive discounts of 10% and then 20% on the marked price. What is the final price in rupees?

(Numerical Answer Type - enter a numerical value; no options.)

View Solution

Q10. A wheel has a radius of 0.35 m. Taking $\pi = \frac{22}{7}$, what distance in metres does the wheel cover in exactly one full rotation?

(Numerical Answer Type - enter a numerical value; no options.)

View Solution

Q11. The sequence 1, 4, 9, 16, 25, ... lists the perfect squares. What is the 7th term of this sequence?

(Numerical Answer Type - enter a numerical value; no options.)

View Solution

Q12. A triangular pennant has a base of 10 cm and a height of 9 cm. What is its area in square centimetres?

(Numerical Answer Type - enter a numerical value; no options.)

View Solution

Q13. How many diagonals does a regular octagon (an eight-sided polygon) have?

(Numerical Answer Type - enter a numerical value; no options.)

View Solution

Q14. A designer builds a grey scale from black to white using tints spaced 12.5% apart, including both 0% (black) and 100% (white). How many distinct shades are in the scale?

(Numerical Answer Type - enter a numerical value; no options.)

View Solution

Section 2: Multiple Select Questions (MSQ)

Q15. Which of the following statements about the areas of Indian states is/are TRUE?

(One or more options may be correct.)

(A) Arunachal Pradesh is larger than Kerala

(B) Punjab is larger than Assam

(C) Chhattisgarh is larger than Jharkhand

(D) West Bengal is larger than Uttarakhand

View Solution

Q16. In the additive (RGB) colour model used by digital screens, which of the following listed colours is/are additive primary colours?

(One or more options may be correct.)

(A) Yellow

(B) Green

(C) Blue

(D) Cyan

View Solution

Q17. On the colour wheel, which of the following is generally classified as a WARM colour?

(One or more options may be correct.)

(A) Blue

(B) Green

(C) Orange

(D) Violet

View Solution

Q18. Which of the following are raster (pixel-based) image file formats?

(One or more options may be correct.)

(A) JPEG

(B) PNG

(C) GIF

(D) BMP

View Solution

Q19. Which of the following statements about designers and design schools is/are TRUE?

(One or more options may be correct.)

(A) Raymond Loewy is best known for reviving Indian handloom textiles

(B) Charles and Ray Eames designed the iconic moulded plywood and fibreglass chairs

(C) The Bauhaus school was founded in Paris

(D) Dieter Rams is known for his 'Ten Principles of Good Design'

View Solution

Q20. Which of the following statements about Indian crafts and their home regions is/are TRUE?

(One or more options may be correct.)

(A) Pochampally Ikat is a weaving tradition of Rajasthan

(B) Madhubani painting originates in Kerala

(C) Kanjeevaram silk sarees are woven in Tamil Nadu

(D) Blue Pottery is a traditional craft of Jaipur

View Solution

Q21. Which of the following statements about typography terms is/are TRUE?

(One or more options may be correct.)

(A) Kerning adjusts the space between two specific letters

(B) Leading refers to the width of a single character

(C) A serif is the horizontal baseline on which text sits

(D) Point size measures the width of the printed page

View Solution

Q22. Which of the following statements about world architecture and monuments is/are TRUE?

(One or more options may be correct.)

(A) The Sydney Opera House was designed by Le Corbusier

(B) The Eiffel Tower is built primarily of wrought iron

(C) Antoni Gaudi designed the Sagrada Familia basilica in Barcelona

(D) The Taj Mahal is built mainly of white marble

View Solution

Q23. Which of the following statements about colour models used in design is/are TRUE?

(One or more options may be correct.)

(A) CMYK is the standard colour model for glowing digital screens

(B) RGB is a subtractive colour model

(C) A standard hexadecimal colour code uses eight digits

(D) In CMYK, the letter K stands for the key (black) plate

View Solution

Q24. Which of the following statements about Indian monuments is/are TRUE?

(One or more options may be correct.)

(A) The Sun Temple at Konark is designed in the shape of a giant chariot

(B) The Charminar is located in Delhi

(C) Fatehpur Sikri was built by the Mughal emperor Akbar

(D) The Lotus Temple in Delhi is a Hindu temple

View Solution

Q25. Which of the following statements about materials and manufacturing processes is/are TRUE?

(One or more options may be correct.)

(A) Injection moulding is used mainly for hand-blowing glass

(B) Anodizing is a surface treatment commonly applied to aluminium

(C) Plywood is made by gluing together thin layers of wood veneer

(D) Ceramic articles are hardened by firing them in a kiln

View Solution

Q26. Which of the following statements about art and design movements is/are TRUE?

(One or more options may be correct.)

(A) Cubism was pioneered by Pablo Picasso and Georges Braque

(B) Art Nouveau is known for flowing, organic, plant-like lines

(C) The Bauhaus emphasised uniting art with industrial craft and function

(D) Surrealism deliberately avoided any dreamlike or subconscious imagery

View Solution

Q27. Which of the following statements about digital images and resolution is/are TRUE?

(One or more options may be correct.)

(A) A higher DPI setting always produces a smaller image file size

(B) Screen resolution is commonly measured in pixels per inch (PPI)

(C) Vector graphics lose quality and become blurry when scaled up

(D) The PNG format supports transparent backgrounds

View Solution

Q28. Which of the following statements about Indian folk arts and crafts is/are TRUE?

(One or more options may be correct.)

(A) Warli painting uses simple geometric shapes such as circles, triangles and lines

(B) Channapatna in Karnataka is famous for its lacquered wooden toys

(C) Phulkari is a traditional embroidery craft of Punjab

(D) Bidriware is a form of silk weaving

View Solution

Q29. Which of the following statements about the principles of visual design is/are TRUE?

(One or more options may be correct.)

(A) Symmetry and balance mean exactly the same thing in design

(B) Adding strong contrast always reduces the visual hierarchy of a layout

(C) The rule of thirds is a common compositional guideline in photography and layout

(D) Good design should always avoid leaving any white space

View Solution

Section 3: Multiple Choice Questions (MCQ)

Q30. Four students P, Q, R and S see a box containing some white and some red balls. Exactly one of them is a liar. Their statements are:

P: There are an equal number of red and white balls.

Q: P is a liar and there are 3 red balls and 2 white balls.

R: Q is not a liar and there are some red balls and some white balls in the box.

S: R is not a liar.

Who is the liar?

(A) P is the liar

(B) Q is the liar

(C) R is the liar

(D) S is the liar

View Solution

Q31. On a glass entrance door, an arrow is pasted on the outside pointing to a new office. The top tape peels off, so the paper hangs and flips downward. From inside the building, the arrow is now seen pointing Southwest. What was its original direction (as seen from outside)?

(A) Southeast

(B) Northeast

(C) Northwest

(D) North

View Solution

Q32. Find the next number in the series: 3, 6, 11, 18, 27, ...

(A) 38

(B) 36

(C) 40

(D) 37

View Solution

Q33. In a certain code, FACE is written as GBDF. Using the same rule, how is HEAD written?

(A) IFCE

(B) GDZC

(C) IFBE

(D) IEBE

View Solution

Q34. A person walks 5 km towards the North, then turns right and walks 3 km, then turns right again and walks 5 km. How far and in which direction is the person now from the starting point?

(A) 8 km to the North

(B) 5 km to the East

(C) 3 km to the West

(D) 3 km to the East

View Solution

Q35. Pointing to a photograph, a girl says, 'She is the daughter of my grandfather's only son.' How is the girl in the photograph related to the speaker?

(A) Mother

(B) Sister

(C) Aunt

(D) Daughter

View Solution

Q36. Which one of the following does NOT belong with the others?

(A) Square

(B) Rectangle

(C) Circle

(D) Rhombus

View Solution

Q37. A cube is painted on all its faces and then cut into 27 equal smaller cubes (a 3 by 3 by 3 arrangement). How many of the small cubes have NO face painted?

(A) 1

(B) 0

(C) 8

(D) 6

View Solution

Q38. On a standard die, the numbers on opposite faces always add up to 7. If a die shows 3 on its top face, what number is on the bottom face?

(A) 2

(B) 3

(C) 5

(D) 4

View Solution

Q39. On the traditional (RYB) artist's colour wheel, what is the complementary colour of blue?

(A) Green

(B) Orange

(C) Violet

(D) Red

View Solution

Q40. In typography, what is the term for the vertical space between successive lines of text?

(A) Kerning

(B) Tracking

(C) Leading

(D) Baseline

View Solution

Q41. In the ISO A-series of paper sizes, which of the following is the LARGEST sheet?

(A) A0

(B) A2

(C) A4

(D) A6

View Solution

Q42. Given that all designers are creative, and some creative people are engineers, which of the following MUST be true?

(A) All engineers are designers

(B) All creative people are designers

(C) Some designers are definitely engineers

(D) None of these conclusions must be true

View Solution

Q43. Which one of the following capital letters does NOT look the same as its own reflection in a vertical mirror (a left-right flip)?

(A) A

(B) B

(C) M

(D) T

View Solution

Q44. When seen in a plane mirror, a wall clock appears to show the time 3:00. What is the actual time?

(A) 3:00

(B) 6:00

(C) 9:00

(D) 12:00

View Solution

Q45. Find the next number in the series: 1, 1, 2, 3, 5, 8, ...

(A) 13

(B) 11

(C) 12

(D) 15

View Solution

Q46. Book is to Reading as Fork is to:

(A) Drawing

(B) Writing

(C) Stirring

(D) Eating

View Solution

Q47. Who is credited with designing the flag on which the present national flag of India is based?

(A) Nandalal Bose

(B) Pingali Venkayya

(C) Raja Ravi Varma

(D) M. F. Husain

View Solution

Q48. The design maxim 'Form follows function' is most closely associated with which movement or approach?

(A) Baroque

(B) Rococo

(C) Modernism

(D) Romanticism

View Solution

Q49. A photograph has an aspect ratio of 3:2 (width to height). If its width is 15 cm, what is its height?

(A) 10 cm

(B) 12 cm

(C) 9 cm

(D) 22.5 cm

View Solution

Q50. Which one of the following does NOT belong with the others?

(A) Oak

(B) Teak

(C) Pine

(D) Marble

View Solution

Q51. If each letter is given its position number in the English alphabet (A = 1, B = 2, and so on), what is the sum of the letters in the word CAB?

(A) 5

(B) 6

(C) 7

(D) 9

View Solution

Q52. At exactly 3 o'clock, what is the angle between the hour hand and the minute hand of a clock?

(A) 30 degrees

(B) 60 degrees

(C) 90 degrees

(D) 180 degrees

View Solution

Q53. A cube has how many faces, edges and vertices, in that order?

(A) 6 faces, 12 edges, 8 vertices

(B) 8 faces, 12 edges, 6 vertices

(C) 6 faces, 8 edges, 12 vertices

(D) 12 faces, 6 edges, 8 vertices

View Solution

Q54. When the three additive primary colours of light (red, green and blue) are mixed together at full intensity, what colour results?

(A) Black

(B) Grey

(C) Brown

(D) White

View Solution

Q55. The Gestalt principle by which we perceive a complete shape even when parts of its outline are missing is called:

(A) Similarity

(B) Closure

(C) Proximity

(D) Continuity

View Solution

Q56. On a map drawn to a scale of 1:50,000, a road measures 2 cm. What is its actual length on the ground?

(A) 500 m

(B) 5 km

(C) 1 km

(D) 2 km

View Solution

Q57. Which one of the following software applications is NOT primarily a graphic-design or image tool?

(A) Adobe Photoshop

(B) Adobe Illustrator

(C) Adobe InDesign

(D) Microsoft Excel

View Solution

Part B: Drawing and Design Aptitude (Pen and Paper)

Q58. [Drawing - 50 Marks]

Imagine a neighbourhood playground on a bright evening full of children at play. A slide and a see-saw stand to one side, a group plays cricket with a taped ball, others chase each other, parents chat on a bench, and trees frame the ground. Draw this lively playground scene, giving prominence to a child at the highest point of a swing, legs stretched forward and hair flying, with friends waiting their turn.

Note: Make pencil sketches only. Do not use colour.

Evaluation criteria: observation; composition; perspective and proportion; quality of lines; attention to detail.

View Model Approach

Q59. [Design Aptitude - 50 Marks]

In many parts of India people carry water home from a distant tap or handpump, and heavy round pots strain the back and spill on the way. Design a water-carrying container that is easier and safer to carry over a long walk and does not spill. Show your container in two states: empty and folded or stacked compact for storage, and full of water and being carried home.

Note: Make pencil sketches only. Do not use colour. Explain your design only through visuals and short labels; do not write separate explanations.

View Model Approach

Detailed Solutions

Q1.

Q. There are apples and oranges in a basket that can carry a maximum of 50 fruits. Some fruits are rotten and some are good. The number of rotten apples is twice the number of good apples. The number of good oranges is twice the number of rotten oranges. The number of oranges is thrice the number of apples. If there are more than 40 fruits in the basket, what is the total number of apples and oranges?

Solution

Concept - Divisibility from ratio conditions: Translate each spoken condition into a divisibility rule, then test the small range that the total allows.

Step 1 - Set up totals: Let apples $= a$. Oranges $= 3a$, so the total is $a + 3a = 4a$. Since $40 < 4a \leq 50$, we get $10 < a \leq 12.5$, so $a = 11$ or $a = 12$.

Step 2 - Apply the good/rotten rules: Rotten apples $=$ $2\times$good apples, so apples $=$ $3\times$good apples, meaning a is a multiple of 3. Only $a = 12$ qualifies. Oranges $= 3a = 36$; good oranges $= 2\times$rotten, so oranges is a multiple of 3, and 36 works.

Step 3 - Total: $12 + 36 = \boxed{48}$ fruits, which is more than 40 and under 50.

Tip: Turn every "twice/thrice" clue into a divisibility test first, then check only the few totals the limit allows.

Answer: 48 Go Back to Q1

Q2.

Q. A wooden cube of side 5 cm is painted on all six faces and then cut into unit cubes of side 1 cm. How many of the small cubes have exactly two painted faces?

Solution

Concept - Painted cube, edge rule: In an $n \times n \times n$ painted cube, cubes with exactly two painted faces sit along the edges (not corners). Their count is $12(n-2)$.

Step 1 - Identify n: Here $n = 5$.

Step 2 - Apply the formula: $12(n-2) = 12 \times 3 = \boxed{36}$.

Tip: Two-face cubes are the edge cubes; remember the three counts: corners give 3 faces, edges give 2, face-centres give 1.

Answer: 36 Go Back to Q2

Q3.

Q. A logo is 4 cm wide and 3 cm tall. It is enlarged proportionally so that its new width becomes 10 cm. What is the new height, in centimetres?

Solution

Concept - Proportional scaling: A proportional enlargement keeps the aspect ratio fixed, so height scales by the same factor as width.

Step 1 - Scale factor: New width over old width $= \frac{10}{4} = 2.5$.

Step 2 - New height: $3 \times 2.5 = \boxed{7.5}$ cm.

Tip: To avoid distortion, multiply both dimensions by the same factor; never scale width and height separately.

Answer: 7.5 Go Back to Q3

Q4.

Q. In typography, 1 pica equals 12 points.
How many points are there in 6 picas?

Solution

Concept - Typographic units: The pica and the point are print measurement units, linked by 1 pica $= 12$ points.

Step 1 - Multiply: $6 \times 12 = \boxed{72}$ points.

Tip: 72 points also equals 1 inch, which is why 6 picas make exactly one inch.

Answer: 72 Go Back to Q4

Q5.

Q. A digital image is 800 pixels wide and is set
to print at a resolution of 100 pixels per inch.
What is the printed width of the image, in inches?

Solution

Concept - Pixels, PPI and print size: Printed length equals pixel count divided by pixels-per-inch (PPI).

Step 1 - Divide: $\frac{800}{100} = \boxed{8}$ inches.

Tip: Fewer pixels per inch means a larger but coarser print; more PPI means a smaller, sharper print.

Answer: 8 Go Back to Q5

Q6.

Q. Find the next number in the sequence: 2, 6, 12, 20, 30, ...

Solution

Concept - Difference pattern: Look at the gaps between consecutive terms.

Step 1 - Differences: $4, 6, 8, 10$; each rises by 2, so the next gap is 12.

Step 2 - Next term: $30 + 12 = \boxed{42}$. (Also $n(n+1)$: $6 \times 7 = 42$.)

Tip: When first differences are not constant, check whether they form their own simple pattern.

Answer: 42 Go Back to Q6

Q7.

Q. A cylindrical tin can has a radius of 7 cm and a height of 10 cm. Taking $\pi = \frac{22}{7}$, what is its volume in cubic centimetres?

Solution

Concept - Volume of a cylinder: $V = \pi r^2 h$.

Step 1 - Substitute: $V = \frac{22}{7} \times 7^2 \times 10 = \frac{22}{7} \times 49 \times 10$.

Step 2 - Simplify: $\frac{22}{7} \times 49 = 22 \times 7 = 154$; then $154 \times 10 = \boxed{1540}$.

Tip: Cancel the 7 in the denominator against 49 early to keep the arithmetic clean.

Answer: 1540 Go Back to Q7

Q8.

Q. A rectangular floor measures 6 m by 4 m. It is to be fully covered with square tiles of side 0.5 m. How many tiles are needed?

Solution

Concept - Area tiling: Number of tiles $= \dfrac{\text{floor area}}{\text{tile area}}$.

Step 1 - Areas: Floor $= 6 \times 4 = 24$ m^2; each tile $= 0.5 \times 0.5 = 0.25$ m^2.

Step 2 - Divide: $\frac{24}{0.25} = \boxed{96}$ tiles.

Tip: Keep both areas in the same unit before dividing; here everything stays in square metres.

Answer: 96 Go Back to Q8

Q9.

Q. A designer chair is marked at Rs 2000. A store offers two successive discounts of 10% and then 20% on the marked price. What is the final price in rupees?

Solution

Concept - Successive discounts: Apply each discount one after the other by multiplying the remaining fractions.

Step 1 - After 10%: $2000 \times 0.90 = 1800$.

Step 2 - After 20%: $1800 \times 0.80 = \boxed{1440}$.

Tip: Successive 10% and 20% is not a flat 30% off; it equals $1 - 0.9 \times 0.8 = 28\%$ off.

Answer: 1440 Go Back to Q9

Q10.

Q. A wheel has a radius of 0.35 m. Taking $\pi = \frac{22}{7}$, what distance in metres does the wheel cover in exactly one full rotation?

Solution

Concept - Rolling distance: In one rotation a wheel covers a distance equal to its circumference $C = 2\pi r$.

Step 1 - Substitute: $C = 2 \times \frac{22}{7} \times 0.35$.

Step 2 - Simplify: $\frac{22}{7} \times 0.35 = 22 \times 0.05 = 1.1$; then $2 \times 1.1 = \boxed{2.2}$ m.

Tip: Distance for n rotations is just n times the circumference.

Answer: 2.2 Go Back to Q10

Q11.

Q. The sequence 1, 4, 9, 16, 25, ... lists the perfect squares. What is the 7th term of this sequence?

Solution

Concept - Perfect squares: The nth term is n^2.

Step 1 - Put n = 7: $7^2 = \boxed{49}$.

Tip: Recognising a squares sequence instantly saves you from extending it term by term.

Answer: 49 Go Back to Q11

Q12.

Q. A triangular pennant has a base of 10 cm and a height of 9 cm. What is its area in square centimetres?

Solution

Concept - Area of a triangle: $A = \frac{1}{2} \times \text{base} \times \text{height}$.

Step 1 - Substitute: $A = \frac{1}{2} \times 10 \times 9$.

Step 2 - Simplify: $\frac{1}{2} \times 90 = \boxed{45}$ cm^2.

Tip: The height must be perpendicular to the chosen base, not a slanted side.

Answer: 45 Go Back to Q12

Q13.

Q. How many diagonals does a regular octagon (an eight-sided polygon) have?

Solution

Concept - Diagonals of a polygon: A polygon with n sides has $\frac{n(n-3)}{2}$ diagonals.

Step 1 - Put n = 8: $\frac{8(8-3)}{2} = \frac{8\times5}{2}$.

Step 2 - Simplify: $\frac{40}{2} = \boxed{20}$.

Tip: We subtract 3 because a vertex cannot join to itself or its two neighbours.

Answer: 20 Go Back to Q13

Q14.

Q. A designer builds a grey scale from black to white using tints spaced 12.5% apart, including both 0% (black) and 100% (white). How many distinct shades are in the scale?

Solution

Concept - Counting equally spaced steps: With a fixed step from a start to an end value, the count is $\frac{\text{range}}{\text{step}} + 1$ because both endpoints are included.

Step 1 - Steps across range: $\frac{100}{12.5} = 8$ intervals.

Step 2 - Add endpoints: $8 + 1 = \boxed{9}$ shades (0, 12.5, 25, 37.5, 50, 62.5, 75, 87.5, 100).

Tip: Always add 1 for fence-post counting: the number of posts is one more than the number of gaps.

Answer: 9 Go Back to Q14

Q15.

Q. Which of the following statements about the areas of Indian states is/are TRUE?

(A) Arunachal Pradesh is larger than Kerala

(B) Punjab is larger than Assam

(C) Chhattisgarh is larger than Jharkhand

(D) West Bengal is larger than Uttarakhand

Solution

Concept - Relative areas of Indian states: Compare approximate state areas in square kilometres.

Step 1 - Evaluate A: Arunachal Pradesh (about 83,700) is far larger than Kerala (about 38,900). TRUE.

Step 2 - Evaluate B: Punjab (about 50,400) is smaller than Assam (about 78,400). FALSE.

Step 3 - Evaluate C: Chhattisgarh (about 135,200) is larger than Jharkhand (about 79,700). TRUE.

Step 4 - Evaluate D: West Bengal (about 88,800) is larger than Uttarakhand (about 53,500). TRUE.

Correct options: A, C, D.

Tip: Fix a few anchor areas (a large state like Chhattisgarh, a small one like Kerala) and rank the rest against them.

Answer: A, C, D Go Back to Q15

Q16.

Q. In the additive (RGB) colour model used by digital screens, which of the following listed colours is/are additive primary colours?

(A) Yellow
(B) Green
(C) Blue
(D) Cyan

Solution

Concept - Additive RGB primaries: On screens, light is mixed from three primaries: Red, Green and Blue.

Step 1 - Evaluate A: Yellow is a secondary colour made from red + green light, not a primary. FALSE.

Step 2 - Evaluate B: Green is an additive primary. TRUE.

Step 3 - Evaluate C: Blue is an additive primary. TRUE.

Step 4 - Evaluate D: Cyan is a secondary (green + blue light) and a CMYK primary, not an additive primary. FALSE.

Correct options: B, C.

Tip: Additive primaries are R, G, B; their pairwise mixes give the CMY secondaries.

Answer: B, C Go Back to Q16

Q17.

Q. On the colour wheel, which of the following is generally classified as a WARM colour?

(A) Blue
(B) Green
(C) Orange
(D) Violet

Solution

Concept - Warm vs cool colours: Warm colours (reds, oranges, yellows) suggest heat; cool colours (blues, greens, violets) suggest calm.

Step 1 - Evaluate A: Blue is cool. FALSE.

Step 2 - Evaluate B: Green is cool. FALSE.

Step 3 - Evaluate C: Orange is warm. TRUE.

Step 4 - Evaluate D: Violet is cool. FALSE.

Correct option: C.

Tip: Split the wheel through the yellow-green and red-violet points: one half is warm, the other cool.

Answer: C Go Back to Q17

Q18.

Q. Which of the following are raster (pixel-based) image file formats?

(A) JPEG

(B) PNG

(C) GIF

(D) BMP

Solution

Concept - Raster vs vector: Raster formats store an image as a grid of pixels; vector formats store shapes as maths.

Step 1 - Evaluate A: JPEG is a lossy raster format. TRUE.

Step 2 - Evaluate B: PNG is a lossless raster format with transparency. TRUE.

Step 3 - Evaluate C: GIF is a raster format supporting animation. TRUE.

Step 4 - Evaluate D: BMP is an uncompressed raster bitmap. TRUE.

Correct options: A, B, C, D.

Tip: Vector formats to contrast are SVG, AI and EPS; these scale without pixelation.

Answer: A, B, C, D Go Back to Q18

Q19.

Q. Which of the following statements about designers and design schools is/are TRUE?

(A) Raymond Loewy is best known for reviving Indian handloom textiles

(B) Charles and Ray Eames designed the iconic moulded plywood and fibreglass chairs

(C) The Bauhaus school was founded in Paris

(D) Dieter Rams is known for his 'Ten Principles of Good Design'

Solution

Concept - Design history facts: Match each designer or school to its real contribution.

Step 1 - Evaluate A: Raymond Loewy was an American industrial designer (Coca-Cola, locomotives), not linked to Indian handloom. FALSE.

Step 2 - Evaluate B: Charles and Ray Eames created famous moulded plywood and fibreglass chairs. TRUE.

Step 3 - Evaluate C: The Bauhaus was founded in Weimar, Germany, in 1919, not Paris. FALSE.

Step 4 - Evaluate D: Dieter Rams framed the 'Ten Principles of Good Design'. TRUE.

Correct options: B, D.

Tip: Bauhaus moved Weimar to Dessau to Berlin, all within Germany; never Paris.

Answer: B, D Go Back to Q19

Q20.

Q. Which of the following statements about Indian crafts and their home regions is/are TRUE?

(A) Pochampally Ikat is a weaving tradition of Rajasthan

(B) Madhubani painting originates in Kerala

(C) Kanjeevaram silk sarees are woven in Tamil Nadu

(D) Blue Pottery is a traditional craft of Jaipur

Solution

Concept - Craft geography of India: Link each craft to its correct state.

Step 1 - Evaluate A: Pochampally Ikat is from Telangana, not Rajasthan. FALSE.

Step 2 - Evaluate B: Madhubani painting is from the Mithila region of Bihar, not Kerala. FALSE.

Step 3 - Evaluate C: Kanjeevaram (Kanchipuram) silk sarees are woven in Tamil Nadu. TRUE.

Step 4 - Evaluate D: Blue Pottery is a well-known craft of Jaipur, Rajasthan. TRUE.

Correct options: C, D.

Tip: Group crafts by state before the exam; the traps swap nearby or famous states.

Answer: C, D Go Back to Q20

Q21.

Q. Which of the following statements about typography terms is/are TRUE?

(A) Kerning adjusts the space between two specific letters

(B) Leading refers to the width of a single character

(C) A serif is the horizontal baseline on which text sits

(D) Point size measures the width of the printed page

Solution

Concept - Typography vocabulary: Each term names a precise measurement or feature of type.

Step 1 - Evaluate A: Kerning is the adjustment of space between a specific pair of letters. TRUE.

Step 2 - Evaluate B: Leading is the vertical space between lines of text, not a character width. FALSE.

Step 3 - Evaluate C: A serif is a small stroke at the end of a letter's stem, not the baseline. FALSE.

Step 4 - Evaluate D: Point size relates to the height of the type, not page width. FALSE.

Correct option: A.

Tip: Kerning is between a specific pair; tracking is uniform spacing across many letters.

Answer: A Go Back to Q21

Q22.

Q. Which of the following statements about world architecture and monuments is/are TRUE?

(A) The Sydney Opera House was designed by Le Corbusier
(B) The Eiffel Tower is built primarily of wrought iron
(C) Antoni Gaudi designed the Sagrada Familia basilica in Barcelona
(D) The Taj Mahal is built mainly of white marble

Solution

Concept - Landmark architects and materials: Match each monument to its architect or material.

Step 1 - Evaluate A: The Sydney Opera House was designed by Jorn Utzon, not Le Corbusier. FALSE.

Step 2 - Evaluate B: The Eiffel Tower is made mainly of puddled wrought iron. TRUE.

Step 3 - Evaluate C: Antoni Gaudi designed the Sagrada Familia in Barcelona. TRUE.

Step 4 - Evaluate D: The Taj Mahal is clad mainly in white marble. TRUE.

Correct options: B, C, D.

Tip: Le Corbusier's Indian link is Chandigarh's master plan, not Sydney.

Answer: B, C, D Go Back to Q22

Q23.

Q. Which of the following statements about colour models used in design is/are TRUE?

(A) CMYK is the standard colour model for glowing digital screens

(B) RGB is a subtractive colour model

(C) A standard hexadecimal colour code uses eight digits

(D) In CMYK, the letter K stands for the key (black) plate

Solution

Concept - RGB, CMYK and hex codes: Screens use additive RGB; print uses subtractive CMYK.

Step 1 - Evaluate A: CMYK is for print, not screens; screens use RGB. FALSE.

Step 2 - Evaluate B: RGB is additive (mixing light), not subtractive. FALSE.

Step 3 - Evaluate C: A standard hex colour code has six digits (two each for R, G, B). FALSE.

Step 4 - Evaluate D: In CMYK, K is the key plate, which is black. TRUE.

Correct option: D.

Tip: K is used instead of B to avoid confusion with Blue.

Answer: D Go Back to Q23

Q24.

Q. Which of the following statements about Indian monuments is/are TRUE?

(A) The Sun Temple at Konark is designed in the shape of a giant chariot

(B) The Charminar is located in Delhi

(C) Fatehpur Sikri was built by the Mughal emperor Akbar

(D) The Lotus Temple in Delhi is a Hindu temple

Solution

Concept - Indian monument facts: Recall the form, location and patron of each site.

Step 1 - Evaluate A: The Konark Sun Temple is shaped like the chariot of the Sun god. TRUE.

Step 2 - Evaluate B: The Charminar is in Hyderabad, not Delhi. FALSE.

Step 3 - Evaluate C: Fatehpur Sikri was built by Akbar. TRUE.

Step 4 - Evaluate D: The Lotus Temple is a Bahai House of Worship, open to all faiths, not a Hindu temple. FALSE.

Correct options: A, C.

Tip: Konark's stone wheels double as sundials, reinforcing the chariot idea.

Answer: A, C Go Back to Q24

Q25.

Q. Which of the following statements about materials and manufacturing processes is/are TRUE?

(A) Injection moulding is used mainly for hand-blowing glass

(B) Anodizing is a surface treatment commonly applied to

aluminium

(C) Plywood is made by gluing together thin layers of wood veneer

(D) Ceramic articles are hardened by firing them in a kiln

Solution

Concept - Materials and processes: Match each process to the correct material and use.

Step 1 - Evaluate A: Injection moulding forms plastics, not blown glass. FALSE.

Step 2 - Evaluate B: Anodizing thickens the oxide layer on aluminium for protection and colour. TRUE.

Step 3 - Evaluate C: Plywood is built from cross-glued veneer layers. TRUE.

Step 4 - Evaluate D: Ceramics are hardened by firing in a kiln. TRUE.

Correct options: B, C, D.

Tip: Cross-grain gluing of veneers is what makes plywood strong and warp-resistant.

Answer: B, C, D Go Back to Q25

Q26.

Q. Which of the following statements about art and design movements is/are TRUE?

(A) Cubism was pioneered by Pablo Picasso and Georges Braque
(B) Art Nouveau is known for flowing, organic, plant-like lines
(C) The Bauhaus emphasised uniting art with industrial craft and function
(D) Surrealism deliberately avoided any dreamlike or subconscious imagery

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Solution

Concept - Movement characteristics: Identify the defining trait of each movement.

Step 1 - Evaluate A: Cubism was led by Picasso and Braque. TRUE.

Step 2 - Evaluate B: Art Nouveau is defined by flowing, organic lines. TRUE.

Step 3 - Evaluate C: The Bauhaus united art, craft and industry. TRUE.

Step 4 - Evaluate D: Surrealism embraced dreamlike, subconscious imagery; it did not avoid it. FALSE.

Correct options: A, B, C.

Tip: Surrealism grew from dreams and the unconscious; think of Dali's melting clocks.

Answer: A, B, C Go Back to Q26

Q27.

Q. Which of the following statements about digital images and resolution is/are TRUE?

(A) A higher DPI setting always produces a smaller image file size

(B) Screen resolution is commonly measured in pixels per inch (PPI)

(C) Vector graphics lose quality and become blurry when scaled up

(D) The PNG format supports transparent backgrounds

Solution

Concept - Resolution and formats: Understand DPI/PPI, vectors and file features.

Step 1 - Evaluate A: Higher DPI usually means more data and a larger file, not smaller. FALSE.

Step 2 - Evaluate B: Screen resolution is measured in pixels per inch (PPI). TRUE.

Step 3 - Evaluate C: Vectors stay sharp at any size; they do not blur when enlarged. FALSE.

Step 4 - Evaluate D: PNG supports transparency (an alpha channel). TRUE.

Correct options: B, D.

Tip: If an image must scale to any size and stay crisp, choose a vector format.

Answer: B, D Go Back to Q27

Q28.

Q. Which of the following statements about Indian folk arts and crafts is/are TRUE?

(A) Warli painting uses simple geometric shapes such as circles, triangles and lines

(B) Channapatna in Karnataka is famous for its lacquered wooden toys

(C) Phulkari is a traditional embroidery craft of Punjab

(D) Bidriware is a form of silk weaving

Solution

Concept - Folk art techniques: Identify the medium and origin of each craft.

Step 1 - Evaluate A: Warli art builds scenes from circles, triangles and lines. TRUE.

Step 2 - Evaluate B: Channapatna is known for lacquered wooden toys. TRUE.

Step 3 - Evaluate C: Phulkari is a Punjabi embroidery tradition. TRUE.

Step 4 - Evaluate D: Bidriware is metal inlay work (silver on blackened alloy), not silk weaving. FALSE.

Correct options: A, B, C.

Tip: Bidriware is named after Bidar; remember it as metalcraft, not textile.

Answer: A, B, C Go Back to Q28

Q29.

Q. Which of the following statements about the principles of visual design is/are TRUE?

(A) Symmetry and balance mean exactly the same thing in design

(B) Adding strong contrast always reduces the visual hierarchy of a layout

(C) The rule of thirds is a common compositional guideline in photography and layout

(D) Good design should always avoid leaving any white space

Solution

Concept - Design principles: Recall balance, contrast, composition and white space.

Step 1 - Evaluate A: Symmetry is one way to achieve balance; balance can also be asymmetric, so they are not identical. FALSE.

Step 2 - Evaluate B: Contrast usually strengthens hierarchy by making key elements stand out. FALSE.

Step 3 - Evaluate C: The rule of thirds guides placement along an imaginary 3 by 3 grid. TRUE.

Step 4 - Evaluate D: White (negative) space is valuable for clarity and focus, not something to avoid. FALSE.

Correct option: C.

Tip: Negative space is an active design tool; used well, it guides the eye.

Answer: C Go Back to Q29

Q30.

Q. Four students P, Q, R and S see a box containing some white and some red balls. Exactly one of them is a liar. Their statements are:

P: There are an equal number of red and white balls.

Q: P is a liar and there are 3 red balls and 2 white balls.

R: Q is not a liar and there are some red balls and some white balls in the box.

S: R is not a liar.

Who is the liar?

(A) P is the liar

(B) Q is the liar

(C) R is the liar

(D) S is the liar

Solution

Concept - Truth-teller/liar consistency: Assume exactly one liar and test which choice keeps every other statement consistent.

Step 1 - Test P as the liar: Then P's claim of equal balls is false. Q says 'P is a liar and there are 3 red, 2 white'; both parts can hold. R says 'Q is not a liar and there are some red and some white'; true. S says 'R is not a liar'; true.

Step 2 - Check the count: With 3 red and 2 white, they are unequal (P wrong) and both colours are present (R right). Everything except P is consistent.

Step 3 - Confirm uniqueness: Only P's statement fails, matching 'exactly one liar'.

Tip: In liar puzzles, test the person whose statement, if false, still lets all others agree.

Answer: A Go Back to Q30

Q31.

Q. On a glass entrance door, an arrow is pasted on the outside pointing to a new office. The top tape peels off, so the paper hangs and flips downward. From inside the building, the arrow is now seen pointing Southwest. What was its original direction (as seen from outside)?

(A) Southeast
(B) Northeast
(C) Northwest
(D) North

Solution

Concept - Two flips: a fold and a see-through: The paper flips downward (a vertical flip) and is then viewed from the other side of the glass (a horizontal flip). Together these reverse both the up-down and the left-right sense of the arrow.

Step 1 - Reverse the inside view: The arrow is seen from inside as Southwest. Undo the see-through left-right flip: it becomes Southeast as it actually hangs.

Step 2 - Undo the downward fold: The downward fold reversed the vertical sense, so undo it: Southeast becomes Northeast.

Step 3 - Original direction: The arrow originally pointed

Northeast as seen from outside.

Tip: A fold reverses one axis and viewing from the far side reverses the other; apply them one at a time.

Answer: B Go Back to Q31

Q32.

Q. Find the next number in the series: 3, 6, 11, 18, 27, ...

(A) 38
(B) 36
(C) 40
(D) 37

Solution

Concept - Growing difference pattern: Check the gaps between terms.

Step 1 - Differences: $3, 5, 7, 9$; these rise by 2, so the next gap is 11.

Step 2 - Next term: $27 + 11 = 38$.

Tip: The terms also equal $n^2 + 2$; recognising a squares link is a fast check.

Answer: A Go Back to Q32

Q33.

Q. In a certain code, FACE is written as GBDF. Using the same rule, how is HEAD written?

(A) IFCE

(B) GDZC

(C) IFBE

(D) IEBE

Solution

Concept - Letter-shift coding: Find the constant shift from the sample, then apply it.

Step 1 - Find the rule: F to G, A to B, C to D, E to F: each letter moves forward by one.

Step 2 - Apply to HEAD: H to I, E to F, A to B, D to E, giving IFBE.

Tip: Always confirm the shift on every letter of the sample before coding the target word.

Answer: C Go Back to Q33

Q34.

Q. A person walks 5 km towards the North, then turns right and walks 3 km, then turns right again and walks 5 km. How far and in which direction is the person now from the starting point?

(A) 8 km to the North

(B) 5 km to the East

(C) 3 km to the West

(D) 3 km to the East

Solution

Concept - Direction tracking with coordinates: Track net

movement along the North-South and East-West axes.

Step 1 - First leg: 5 km North.

Step 2 - Turn right (now facing East): 3 km East.

Step 3 - Turn right (now facing South): 5 km South, cancelling the 5 km North.

Step 4 - Net position: Only 3 km East remains, so the person is 3 km to the East of the start.

Tip: Right turns cycle North to East to South to West; sum each axis separately.

Answer: D Go Back to Q34

Q35.

Q. Pointing to a photograph, a girl says, 'She is the daughter of my grandfather's only son.' How is the girl in the photograph related to the speaker?

(A) Mother
(B) Sister
(C) Aunt
(D) Daughter

Solution

Concept - Blood relations, step by step: Resolve the phrase from the innermost relation outward.

Step 1 - Grandfather's only son: The speaker's grandfather's only son is the speaker's father.

Step 2 - Daughter of the father: A daughter of the speaker's father is the speaker's sister.

Step 3 - Conclusion: The girl in the photo is the speaker's sister.

Tip: Replace each clause with a single relation before moving to the next clause.

Answer: B Go Back to Q35

Q36.

Q. Which one of the following does NOT belong with the others?

(A) Square
(B) Rectangle
(C) Circle
(D) Rhombus

Solution

Concept - Odd one out by property: Find the shared property that one item lacks.

Step 1 - Common trait: Square, rectangle and rhombus are quadrilaterals with straight sides and vertices.

Step 2 - The exception: A circle has no straight sides and no vertices.

Tip: List the defining feature of the majority first, then spot who breaks it.

Answer: C Go Back to Q36

Q37.

Q. A cube is painted on all its faces and then cut into 27 equal smaller cubes (a 3 by 3 by 3 arrangement). How many of the small cubes have NO face painted?

(A) 1
(B) 0
(C) 8
(D) 6

Solution

Concept - Hidden inner cube: Unpainted small cubes come only from the inner block, of size $(n-2)^3$.

Step 1 - Put n = 3: $(3-2)^3 = 1^3 = 1$.

Step 2 - Interpretation: Only the single central cube is fully hidden and unpainted.

Tip: A 3 by 3 by 3 cube has exactly one internal cube; larger cubes have many more.

Answer: A Go Back to Q37

Q38.

Q. On a standard die, the numbers on opposite faces always add up to 7. If a die shows 3 on its top face, what number is on the bottom face?

(A) 2
(B) 3

(C) 5

(D) 4

Solution

Concept - Opposite faces of a die: Opposite faces sum to 7.

Step 1 - Subtract: Bottom $= 7 - 3 = 4$.

Tip: The three standard pairs are 1-6, 2-5 and 3-4.

Answer: D Go Back to Q38

Q39.

Q. On the traditional (RYB) artist's colour wheel, what is the complementary colour of blue?

(A) Green

(B) Orange

(C) Violet

(D) Red

Solution

Concept - Complementary colours: Complementary colours sit directly opposite on the colour wheel.

Step 1 - Locate blue's opposite: Opposite blue on the RYB wheel is orange.

Step 2 - Confirm the pairs: The classic pairs are red-green, blue-orange and yellow-violet.

Tip: Complementary pairs placed side by side create the strongest visual contrast.

Answer: B Go Back to Q39

Q40.

Q. In typography, what is the term for the vertical space between successive lines of text?

(A) Kerning
(B) Tracking
(C) Leading
(D) Baseline

Solution

Concept - Type spacing terms: Different terms describe horizontal versus vertical spacing.

Step 1 - Rule out horizontal ones: Kerning is space between a specific letter pair; tracking is uniform letter spacing.

Step 2 - Identify the vertical one: Leading is the vertical space between lines. Baseline is only the line letters rest on.

Tip: 'Leading' comes from the strips of lead once placed between lines of metal type.

Answer: C Go Back to Q40

Q41.

Q. In the ISO A-series of paper sizes, which of the following is the LARGEST sheet?

(A) A0
(B) A2
(C) A4
(D) A6

Solution

Concept - A-series paper sizes: A lower number means a larger sheet; each step halves the area.

Step 1 - Compare: A0 is the base sheet (about one square metre); A2, A4 and A6 are progressively smaller.

Step 2 - Choose: A0 is the largest.

Tip: Folding an A0 in half gives A1, then A2, and so on; the number counts the halvings.

Answer: A Go Back to Q41

Q42.

Q. Given that all designers are creative, and some creative people are engineers, which of the following MUST be true?

(A) All engineers are designers
(B) All creative people are designers
(C) Some designers are definitely engineers
(D) None of these conclusions must be true

Solution

Concept - Syllogism, only forced conclusions: A conclusion holds only if it is true in every arrangement allowed by the premises.

Step 1 - Test A and B: Designers being creative does not make engineers or all creatives into designers. Not forced.

Step 2 - Test C: The creative people who are engineers need not be designers, so 'some designers are engineers' is not guaranteed.

Step 3 - Conclusion: None of the three must be true.

Tip: 'Some A are B' never forces an overlap with a third group C unless the premises link them directly.

Answer: D Go Back to Q42

Q43.

Q. Which one of the following capital letters does NOT look the same as its own reflection in a vertical mirror (a left-right flip)?

(A) A
(B) B
(C) M
(D) T

Solution

Concept - Vertical (left-right) symmetry: A letter looks unchanged in a vertical mirror only if its left and right halves match.

Step 1 - Check A, M, T: Each is symmetric about a vertical centre

line, so each looks the same when flipped left-right.

Step 2 - Check B: B is symmetric top-to-bottom, not left-to-right, so its mirror image is reversed.

Tip: Fold the letter along a vertical line in your mind; if the halves overlap, it is vertically symmetric.

Answer: B Go Back to Q43

Q44.

Q. When seen in a plane mirror, a wall clock appears to show the time 3:00. What is the actual time?

(A) 3:00
(B) 6:00
(C) 9:00
(D) 12:00

Solution

Concept - Mirror-image clock rule: The actual time equals 12:00 minus the time shown in the mirror (for a full-hour reading).

Step 1 - Apply the rule: $12{:}00 - 3{:}00 = 9{:}00$.

Step 2 - Sense check: A hand at the 3 position reflects to the 9 position.

Tip: For times with minutes, use 11:60 minus the shown time instead of 12:00.

Answer: C Go Back to Q44

Q45.

Q. Find the next number in the series: 1, 1, 2, 3, 5, 8, ...

(A) 13

(B) 11

(C) 12

(D) 15

Solution

Concept - Fibonacci sequence: Each term is the sum of the two before it.

Step 1 - Add the last two: $5 + 8 = 13$.

Tip: Confirm the rule on earlier terms: $2 + 3 = 5$ and $3 + 5 = 8$.

Answer: A Go Back to Q45

Q46.

Q. Book is to Reading as Fork is to:

(A) Drawing

(B) Writing

(C) Stirring

(D) Eating

Solution

Concept - Object-to-use analogy: Match the relationship 'object is used for action'.

Step 1 - Identify the link: A book is used for reading.

Step 2 - Apply to fork: A fork is used for eating.

Tip: Name the exact relationship in words first, then test each option against it.

Answer: D Go Back to Q46

Q47.

Q. Who is credited with designing the flag on which the present national flag of India is based?

(A) Nandalal Bose
(B) Pingali Venkayya
(C) Raja Ravi Varma
(D) M. F. Husain

Solution

Concept - Indian design history: Recall the designer of the Indian national flag.

Step 1 - Identify: Pingali Venkayya designed the flag that the tricolour is based on.

Step 2 - Rule out others: Nandalal Bose illustrated the Constitution; Raja Ravi Varma was a painter; M. F. Husain was a modern artist.

Tip: Nandalal Bose is linked to the Constitution's artwork, a common distractor here.

Answer: B Go Back to Q47

Q48.

Q. The design maxim 'Form follows function' is most closely associated with which movement or approach?

(A) Baroque
(B) Rococo
(C) Modernism
(D) Romanticism

Solution

Concept - Design philosophies: Link the slogan to its movement.

Step 1 - Origin: 'Form follows function' comes from architect Louis Sullivan and became a core idea of Modernism.

Step 2 - Rule out others: Baroque and Rococo prize ornament; Romanticism prizes emotion, all opposite to function-first design.

Tip: Modernism favours clean, functional forms with minimal ornament.

Answer: C Go Back to Q48

Q49.

Q. A photograph has an aspect ratio of 3:2 (width to height). If its width is 15 cm, what is its height?

(A) 10 cm
(B) 12 cm
(C) 9 cm
(D) 22.5 cm

Solution

Concept - Aspect ratio proportion: Width and height keep the ratio $3 : 2$.

Step 1 - Set up: $\frac{3}{2} = \frac{15}{h}$.

Step 2 - Solve: $h = \frac{15 \times 2}{3} = 10$ cm.

Tip: Keep width over height on both sides so the units line up before cross-multiplying.

Answer: A Go Back to Q49

Q50.

Q. Which one of the following does NOT belong with the others?

(A) Oak
(B) Teak
(C) Pine
(D) Marble

Solution

Concept - Odd one out by material class: Group by material type.

Step 1 - Common trait: Oak, teak and pine are types of wood.

Step 2 - The exception: Marble is a stone, not a wood.

Tip: Sort options into categories; the lone member of a different category is the answer.

Answer: D Go Back to Q50

Q51.

Q. If each letter is given its position number in the English alphabet (A = 1, B = 2, and so on), what is the sum of the letters in the word CAB?

(A) 5
(B) 6
(C) 7
(D) 9

Solution

Concept - Letter-to-number values: Replace each letter with its alphabet position and add.

Step 1 - Values: C $= 3$, A $= 1$, B $= 2$.

Step 2 - Add: $3 + 1 + 2 = 6$.

Tip: Memorise a few anchors (E=5, J=10, O=15, T=20, Z=26) to place letters quickly.

Answer: B Go Back to Q51

Q52.

Q. At exactly 3 o'clock, what is the angle between the hour hand and the minute hand of a clock?

(A) 30 degrees
(B) 60 degrees
(C) 90 degrees
(D) 180 degrees

Solution

Concept - Clock angles: Each hour mark is $360 \div 12 = 30$ degrees apart.

Step 1 - Positions at 3:00: The minute hand is at 12, the hour hand is at 3, so they are 3 hour marks apart.

Step 2 - Compute: $3 \times 30 = 90$ degrees.

Tip: The full angle formula is $|30H - 5.5M|$ degrees; at 3:00 it gives 90.

Answer: C Go Back to Q52

Q53.

Q. A cube has how many faces, edges and vertices, in that order?

(A) 6 faces, 12 edges, 8 vertices
(B) 8 faces, 12 edges, 6 vertices
(C) 6 faces, 8 edges, 12 vertices
(D) 12 faces, 6 edges, 8 vertices

Solution

Concept - Cube counts and Euler's formula: A cube has 6 faces, 12 edges and 8 vertices.

Step 1 - Verify with Euler: $V - E + F = 8 - 12 + 6 = 2$, which holds for any simple solid.

Tip: Remember the order faces-edges-vertices as 6-12-8 for a cube.

Answer: A Go Back to Q53

Q54.

Q. When the three additive primary colours of light (red, green and blue) are mixed together at full intensity, what colour results?

(A) Black
(B) Grey
(C) Brown
(D) White

Solution

Concept - Additive colour mixing: Adding coloured light increases brightness toward white.

Step 1 - Combine: Full red plus full green plus full blue light produces white.

Step 2 - Contrast with pigment: Mixing pigments (subtractive) instead moves toward black.

Tip: With light, all colours on gives white; all colours off gives black.

Answer: D Go Back to Q54

Q55.

Q. The Gestalt principle by which we perceive a complete shape even when parts of its outline are missing is called:

(A) Similarity

(B) Closure
(C) Proximity
(D) Continuity

Solution

Concept - Gestalt principles of perception: Each principle describes how we group visual elements.

Step 1 - Match the description: Filling in a gapped outline to see a whole shape is Closure.

Step 2 - Rule out others: Similarity groups by likeness, proximity by nearness, continuity by smooth flow.

Tip: Logos with implied edges (like a partly drawn circle) rely on closure.

Answer: B Go Back to Q55

Q56.

Q. On a map drawn to a scale of 1:50,000, a road measures 2 cm. What is its actual length on the ground?

(A) 500 m
(B) 5 km
(C) 1 km
(D) 2 km

Solution

Concept - Map scale conversion: 1 unit on the map equals 50,000

of the same units on the ground.

Step 1 - Ground distance in cm: $2 \times 50000 = 100000$ cm.

Step 2 - Convert: 100000 cm $= 1000$ m $= 1$ km.

Tip: Do the multiply in the map's unit (cm) first, then convert once at the end.

Answer: C Go Back to Q56

Q57.

Q. Which one of the following software applications is NOT primarily a graphic-design or image tool?

(A) Adobe Photoshop
(B) Adobe Illustrator
(C) Adobe InDesign
(D) Microsoft Excel

Solution

Concept - Design software vs office software: Group tools by their main purpose.

Step 1 - The design tools: Photoshop (raster editing), Illustrator (vector art) and InDesign (page layout) are all graphic-design tools.

Step 2 - The exception: Microsoft Excel is a spreadsheet application, not a design tool.

Tip: The three Adobe apps here each target a different design task; the odd one out is from a different suite entirely.

Answer: D Go Back to Q57

Q58.

Q (Drawing). Imagine a neighbourhood playground on a bright evening full of children at play. A slide and a see-saw stand to one side, a group plays cricket with a taped ball, others chase each other, parents chat on a bench, and trees frame the ground. Draw this lively playground scene, giving prominence to a child at the highest point of a swing, legs stretched forward and hair flying, with friends waiting their turn.

Note: Make pencil sketches only. Do not use colour.

Evaluation criteria: observation; composition; perspective and proportion; quality of lines; attention to detail.

Model Approach and Evaluation

Lay out the open ground and the play equipment first, then make the swinging child the clear focus.

Step 1 - Block the layout: Mark a horizon line and let the ground recede so the far trees and fence sit small at the back. Place the swing and the child in the near-middle of the sheet, off-centre, as your focal point.

Step 2 - Build the depth: Foreground - the swing, the waiting friends and a patch of ground; middle ground - the slide, see-saw and cricket group; background - trees, benches and fence. Overlap children to show a busy ground.

Step 3 - Give the swinging child prominence: Draw the action

pose - stretched legs, leaning body, flying hair and taut swing ropes - with the sharpest, darkest lines. Keep the near friends crisp and let distant players fade to lighter strokes.

Step 4 - Add life and finish: Suggest motion with light arc lines behind the swing, texture in the tree foliage, folds in clothes and shadows on the ground. Keep children's heights in believable proportion front to back.

Tip: A steady horizon plus foreground-midground-background layering gives depth, and reserving your boldest lines and the action pose for the swing makes the child the unmistakable subject.

Go Back to Q58

Q59.

Q (Design Aptitude). In many parts of India people carry water home from a distant tap or handpump, and heavy round pots strain the back and spill on the way. Design a water-carrying container that is easier and safer to carry over a long walk and does not spill. Show your container in two states: empty and folded or stacked compact for storage, and full of water and being carried home.

Note: Make pencil sketches only. Do not use colour.
Explain your design only through visuals and
short labels; do not write separate explanations.

Model Approach and Evaluation

Give a two-part visual reply: the container as an object, then proof it stores small and carries safely.

Step 1 - Nail the requirements: Hold the goals in mind - carry a

useful amount of water comfortably over a long walk, spread the load off the back or hands, and stop spilling. Draw only features that serve these.

Step 2 - Show the two required states: On one side draw it empty and folded flat or stacked compact; on the other draw it full and being carried, on the back or rolled along. Match the scale in both views.

Step 3 - Label features, do not write essays: Short call-outs with leader lines - padded straps, a sealed no-spill cap, a low centre of gravity, a shape that rests against the back. One or two words each.

Step 4 - Prove it works: Add a small sketch of a person carrying it to show comfort and balance, and an inset of how it folds or stacks when empty in two or three steps.

Tip: Suitability, ease of use, a fresh idea and clean detailing win marks, so let the empty and in-use views plus tight labels explain everything without any paragraphs. **Go Back to Q59**

Answer Key (Part A)

Section 1 - NAT (Numerical Answer Type)

Q1	Q2	Q3	Q4	Q5	Q6	Q7
48	36	7.5	72	8	42	1540

Q8	Q9	Q10	Q11	Q12	Q13	Q14
96	1440	2.2	49	45	20	9

Section 2 - MSQ (Multiple Select - one or more correct)

Q15	Q16	Q17	Q18	Q19
A, C, D	B, C	C	A, B, C, D	B, D

Q20	Q21	Q22	Q23	Q24
C, D	A	B, C, D	D	A, C

Q25	Q26	Q27	Q28	Q29
B, C, D	A, B, C	B, D	A, B, C	C

Section 3 - MCQ (single correct)

Q30	Q31	Q32	Q33	Q34	Q35	Q36
A	B	A	C	D	B	C

Q37	Q38	Q39	Q40	Q41	Q42	Q43
A	D	B	C	A	D	B

Q44	Q45	Q46	Q47	Q48	Q49	Q50
C	A	D	B	C	A	D

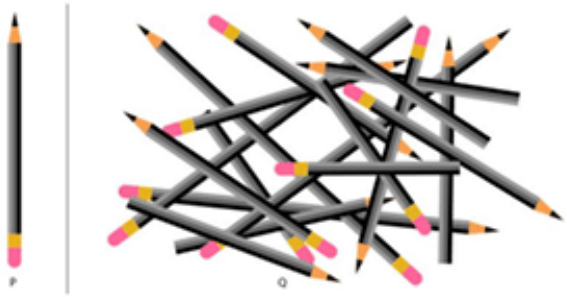
Q51	Q52	Q53	Q54	Q55	Q56	Q57
B	C	A	D	B	C	D

Part B (Q58-Q59) is subjective; see the Model Approach for each under Detailed Solutions.

Appendix: Visual Reasoning
Practice from Past UCEED Papers

These are **real questions from past UCEED papers**, included so you can practise on the actual figure style the exam uses. They are visual-reasoning questions, so work each one out yourself - no answer key is given here (this mirrors how such questions feel in the real test). A short **How to approach** note follows each figure.

P1. **(Past UCEED)** A sharpened pencil with eraser is shown in image P. How many sharpened pencils with erasers are in image Q?



How to approach

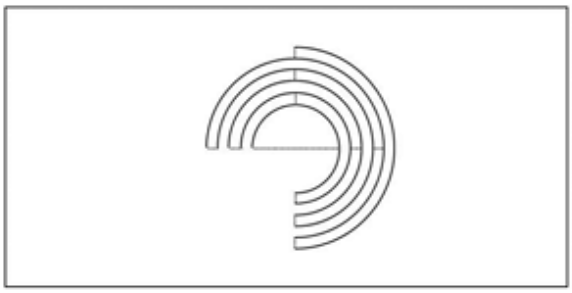
Study the figure carefully and note what is fixed and what changes. Break the problem into smaller parts, use any symmetry in the figure, and count or compute each part systematically before combining. A quick rough redraw usually makes the answer clear.

P2. **(Past UCEED)** Several kettles are shown below. What is the total number of usable kettles that are designed to store and pour hot water?

How to approach

Study the figure carefully and note what is fixed and what changes. Break the problem into smaller parts, use any symmetry in the figure, and count or compute each part systematically before combining. A quick rough redraw usually makes the answer clear.

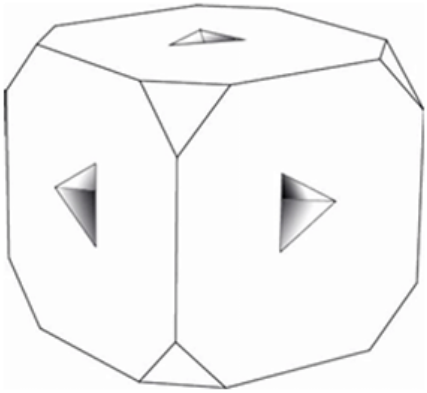
P3. **(Past UCEED)** Given below is a drawing on a sheet of paper. Make a cut along the solid arcs and fold the resulting semicircular rings at 90 degrees along the dotted lines. What is the number of raised semicircular rings after following these steps?



How to approach

Study the figure carefully and note what is fixed and what changes. Break the problem into smaller parts, use any symmetry in the figure, and count or compute each part systematically before combining. A quick rough redraw usually makes the answer clear.

P4. **(Past UCEED)** A cube 4 cm x 4 cm x 4 cm has all its corners chamfered as shown in the figure below. On each of its faces it has got a small tetrahedral notch having edges of 1 cm each. What is the sum of the number of vertices and the number of edges in this solid?



How to approach

Study the figure carefully and note what is fixed and what changes. Break the problem into smaller parts, use any symmetry in the figure, and count or compute each part systematically before combining. A quick rough redraw usually makes the answer clear.