

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. A wooden cube of side 6 cm is painted on all six faces and then cut into small 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](#)



Q2. A designer enlarges a logo that is 8 cm wide and 5 cm tall so that its new width becomes 20 cm. Keeping the same aspect ratio, what is the new height in cm?

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

[View Solution](#)

Q3. In typography, 1 pica equals 12 points. How many points are there in 7 picas?

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

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Q4. In print measurement, 1 inch equals 72 points. A rule line is 3.5 inches long. What is its length in points?

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

[View Solution](#)

Q5. A rectangular name-card has its sides in the ratio 3 : 4 and a perimeter of 56 cm. What is the length of its longer side in cm?

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

[View Solution](#)

Q6. A cube of side 5 cm is painted on all faces and cut into 1 cm cubes. How many of the small cubes have no painted face at all?

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

[View Solution](#)

Q7. Study the number series 2, 6, 12, 20, 30, ... What is the 8th term of this series?



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

[View Solution](#)

Q8. A photograph is 1200 pixels wide and is printed at 300 pixels per inch. What is the printed width in inches?

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

[View Solution](#)

Q9. A digital image uses 8 bits per channel for its red, green and blue channels. How many distinct intensity values can a single channel take?

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

[View Solution](#)

Q10. A layout grid is made of 4 equally spaced vertical lines crossing 3 equally spaced horizontal lines. How many rectangles in total can be formed using these lines?

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

[View Solution](#)

Q11. A design wheel of diameter 70 cm rolls along the floor. Taking $\pi = \frac{22}{7}$, how many complete rotations does it make to cover a distance of 22 metres?

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

[View Solution](#)

Q12. A father is three times as old as his son today. In 12 years the father will be twice as old as his son. What is the son's present age in years?



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

[View Solution](#)

Q13. A cylindrical tin can has radius 7 cm and height 10 cm. Taking $\pi = \frac{22}{7}$, what is its curved (lateral) surface area in square cm?

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

[View Solution](#)

Q14. At exactly 3:30 on an analogue clock, what is the measure of the smaller angle between the hour hand and the minute hand, in degrees?

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

[View Solution](#)

Section 2: Multiple Select Questions (MSQ)

Q15. Which of the following are traditional Indian textile and dyeing crafts?

(One or more options may be correct.)

- (A) Origami
- (B) Bandhani
- (C) Ikat
- (D) Kalamkari

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Q16. In the additive (light) colour model used by screens, which of the following are primary colours?

(One or more options may be correct.)

- (A) Red



- (B) Yellow
- (C) Green
- (D) Blue

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Q17. Which of the following are principles of design (rather than elements of design)?

(One or more options may be correct.)

- (A) Texture
- (B) Balance
- (C) Contrast
- (D) Proportion

[View Solution](#)

Q18. Which of the following are elements of design (rather than principles of design)?

(One or more options may be correct.)

- (A) Line
- (B) Rhythm
- (C) Unity
- (D) Colour

[View Solution](#)

Q19. Which of the following are recognised printmaking techniques?

(One or more options may be correct.)



- (A) Etching
- (B) Lithography
- (C) Screen printing
- (D) Woodcut

[View Solution](#)

Q20. Which of the following are considered warm colours on the colour wheel?

(One or more options may be correct.)

- (A) Blue
- (B) Red
- (C) Green
- (D) Orange

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Q21. Which of the following image file formats stores graphics as scalable vectors rather than as a fixed grid of pixels?

(One or more options may be correct.)

- (A) SVG
- (B) JPEG
- (C) PNG
- (D) GIF

[View Solution](#)

Q22. Which of the following are well-known Indian painters?

(One or more options may be correct.)



- (A) Raja Ravi Varma
- (B) Pablo Picasso
- (C) M. F. Husain
- (D) Nandalal Bose

[View Solution](#)

Q23. Which of the following are UNESCO World Heritage Sites located in India?

(One or more options may be correct.)

- (A) Eiffel Tower
- (B) Statue of Unity
- (C) Sun Temple at Konark
- (D) Ajanta Caves

[View Solution](#)

Q24. Which of the following typefaces belongs to the serif category?

(One or more options may be correct.)

- (A) Helvetica
- (B) Times New Roman
- (C) Futura
- (D) Arial

[View Solution](#)

Q25. Which of the following are traditional Indian folk or tribal painting styles?

(One or more options may be correct.)



- (A) Madhubani
- (B) Warli
- (C) Gond
- (D) Ukiyo-e

[View Solution](#)

Q26. Which of the following terms describe types of balance used in visual composition?

(One or more options may be correct.)

- (A) Symmetrical
- (B) Kerning
- (C) Radial
- (D) Leading

[View Solution](#)

Q27. Which of the following are stages of the design thinking process as taught in the widely used five-stage model?

(One or more options may be correct.)

- (A) Empathise
- (B) Ideate
- (C) Prototype
- (D) Test

[View Solution](#)

Q28. Which of the following is correctly measured in dots per inch (dpi)?

(One or more options may be correct.)



- (A) Font weight
- (B) Colour temperature
- (C) Aspect ratio
- (D) Print resolution

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Q29. Which of the following people are associated with the Bauhaus school?

(One or more options may be correct.)

- (A) Walter Gropius
- (B) Wassily Kandinsky
- (C) Antoni Gaudi
- (D) Marcel Breuer

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Section 3: Multiple Choice Questions (MCQ)

Q30. Identify the odd one out from the following.

- (A) Circle
- (B) Square
- (C) Triangle
- (D) Cube

[View Solution](#)

Q31. In a certain code each letter is replaced by the next letter of the alphabet, so RED becomes SFE. Using the same rule, how is BLUE written?



- (A) CMVF
- (B) CMUF
- (C) AKTD
- (D) CNVF

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Q32. Find the next term in the series 3, 9, 27, 81, ...

- (A) 162
- (B) 216
- (C) 243
- (D) 324

[View Solution](#)

Q33. A person walks 5 km due north, turns right and walks 3 km, then turns right again and walks 5 km. How far is the person now from the starting point?

- (A) 3 km
- (B) 5 km
- (C) 8 km
- (D) 13 km

[View Solution](#)

Q34. Pointing to a photograph, a man says, "She is the daughter of my grandfather's only son." How is the girl in the photograph related to the man?

- (A) Mother



- (B) Sister
- (C) Daughter
- (D) Aunt

[View Solution](#)

Q35. Which of the following capital letters looks exactly the same as itself in a left-right (vertical axis) mirror?

- (A) F
- (B) G
- (C) J
- (D) T

[View Solution](#)

Q36. On a standard die the numbers on opposite faces always add up to 7. If a die shows 2 on the top face, what number is on the bottom face?

- (A) 4
- (B) 5
- (C) 6
- (D) 3

[View Solution](#)

Q37. A cube of side 3 cm is painted on all faces and cut into 1 cm cubes. How many of the small cubes have exactly one painted face?

- (A) 6
- (B) 8
- (C) 12



(D) 1

[View Solution](#)

Q38. On the traditional artist's (RYB) colour wheel, what is the complementary colour of blue?

- (A) Green
- (B) Orange
- (C) Violet
- (D) Red

[View Solution](#)

Q39. In typography, the vertical space between successive lines of text is called:

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

[View Solution](#)

Q40. Adjusting the space between two specific individual letters to improve their fit is known as:

- (A) Kerning
- (B) Leading
- (C) Tracking
- (D) Ligature

[View Solution](#)



Q41. Which Indian city is most famous for its traditional Blue Pottery craft?

- (A) Lucknow
- (B) Jaipur
- (C) Moradabad
- (D) Mysore

[View Solution](#)

Q42. The famous bronze figurine known as the "Dancing Girl" belongs to which of the following?

- (A) Maurya period
- (B) Gupta period
- (C) Indus Valley Civilisation
- (D) Chola dynasty

[View Solution](#)

Q43. The golden ratio, widely used in art and design for pleasing proportions, is approximately equal to:

- (A) 1.414
- (B) 1.618
- (C) 3.142
- (D) 2.718

[View Solution](#)

Q44. From the following list of materials, identify the odd one out.

- (A) Oak



- (B) Teak
- (C) Pine
- (D) Marble

[View Solution](#)

Q45. Find the next letter in the series A, C, E, G, ...

- (A) H
- (B) I
- (C) J
- (D) K

[View Solution](#)

Q46. Complete the analogy: $2 : 8 :: 3 : ?$

- (A) 9
- (B) 18
- (C) 27
- (D) 12

[View Solution](#)

Q47. What is the angle between the hour hand and the minute hand of a clock at exactly 6:00?

- (A) 90 degrees
- (B) 120 degrees
- (C) 150 degrees
- (D) 180 degrees



[View Solution](#)

Q48. Which image file format supports transparency and lossless compression, making it a common choice for web logos?

- (A) JPEG
- (B) PNG
- (C) BMP
- (D) TIFF

[View Solution](#)

Q49. The master plan of the city of Chandigarh was designed by which architect?

- (A) Le Corbusier
- (B) Charles Correa
- (C) B. V. Doshi
- (D) Louis Kahn

[View Solution](#)

Q50. Which of the following gases released by burning fuels is the main contributor to the greenhouse effect?

- (A) Carbon dioxide
- (B) Oxygen
- (C) Nitrogen
- (D) Hydrogen

[View Solution](#)



Q51. Which of the following is a renewable source of energy?

- (A) Coal
- (B) Petroleum
- (C) Solar
- (D) Natural gas

[View Solution](#)

Q52. On a map drawn to a scale of 1 : 50000, two towns are 2 cm apart.
What is the actual distance between them?

- (A) 0.5 km
- (B) 5 km
- (C) 10 km
- (D) 1 km

[View Solution](#)

Q53. In the traditional artist's (RYB) colour model, the three primary colours are:

- (A) Red, Green, Blue
- (B) Cyan, Magenta, Yellow
- (C) Red, Yellow, Blue
- (D) Orange, Green, Violet

[View Solution](#)

Q54. The artist Salvador Dali is most closely associated with which art movement?

- (A) Cubism



- (B) Impressionism
- (C) Surrealism
- (D) Fauvism

[View Solution](#)

Q55. Complete the analogy: Painter is to Brush as Sculptor is to ?

- (A) Chisel
- (B) Hammer
- (C) Canvas
- (D) Clay

[View Solution](#)

Q56. What is the area of a circle of radius 7 cm, taking $\pi = \frac{22}{7}$?

- (A) 44 square cm
- (B) 77 square cm
- (C) 88 square cm
- (D) 154 square cm

[View Solution](#)

Q57. Find the next term in the series 1, 4, 9, 16, 25, ...

- (A) 30
- (B) 32
- (C) 49
- (D) 36

[View Solution](#)



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

Q58. [Drawing - 50 Marks]

It is the afternoon before a wedding, in the open forecourt of a house where a mandap is being decorated. Bamboo poles form the frame, strings of leaves hang half-fixed, and baskets of loose marigolds sit on the ground while a ladder leans against a pole. The focal subject is a decorator standing on the ladder, reaching up with both hands to tie a long marigold garland to the top of the mandap frame, while a helper below hands up the next garland. Imagine this scene and draw it with the decorator tying the garland as the clear centre of interest. Show the bamboo mandap frame, the baskets of flowers, the helper on the ground, the leaning ladder, and the house and courtyard behind.

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]

Young children outgrow their shoes in a few months, so parents keep buying new footwear, and hand-me-down shoes rarely fit the next child well. Design a child's shoe or sandal that can be adjusted to fit a growing foot over a longer period, so one pair lasts through more than one size, while staying comfortable and secure for an active child. Show your design in two states: (1) set to its smallest size for a younger or smaller foot, and (2) adjusted to its largest size for a bigger foot.



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. A wooden cube of side 6 cm is painted on all six faces and then cut into small cubes of side 1 cm. How many of the small cubes have exactly two painted faces?

Solution

Concept - Painted cube, two-face rule: Small cubes with exactly two painted faces sit along the edges of the big cube, leaving out the corner cubes.

Step 1 - Count per edge: Each edge holds $n - 2$ such cubes with $n = 6$, so $6 - 2 = 4$ per edge.

Step 2 - Add all edges: A cube has 12 edges, so total $= 12 \times 4 = 48$.

Tip: Two-face cubes always number $12(n - 2)$; corners give three faces, face-centres give one.

Answer: 48 [Go Back to Q1](#)

Q2.

Q. A designer enlarges a logo that is 8 cm wide and 5 cm tall so that its new width becomes 20 cm. Keeping the same aspect ratio, what is the new height in cm?

Solution

Concept - Proportional scaling: When aspect ratio is fixed, width and height scale by the same factor.



Step 1 - Find the scale factor: $\text{Scale} = \frac{20}{8} = 2.5$.

Step 2 - Apply to height: $\text{New height} = 5 \times 2.5 = 12.5 \text{ cm}$.

Tip: Scaling one dimension without the other stretches the artwork; always multiply both by the same factor.

Answer: 12.5 [Go Back to Q2](#)

Q3.

Q. In typography, 1 pica equals 12 points.

How many points are there in 7 picas?

Solution

Concept - Pica to point conversion: The pica is a typographic unit equal to 12 points.

Step 1 - Multiply: $\text{Points} = 7 \times 12 = 84$.

Tip: Remember 1 pica = 12 points and 6 picas = 1 inch, so 1 inch = 72 points.

Answer: 84 [Go Back to Q3](#)

Q4.

Q. In print measurement, 1 inch equals 72 points. A rule line is 3.5 inches long. What is its length in points?

Solution

Concept - Inch to point conversion: One inch contains 72 typographic points.



Step 1 - Multiply: Points = $3.5 \times 72 = 252$.

Tip: Font and layout sizes in design software are usually in points; 72 points to the inch is the anchor value.

Answer: 252 [Go Back to Q4](#)

Q5.

Q. A rectangular name-card has its sides in the ratio 3 : 4 and a perimeter of 56 cm. What is the length of its longer side in cm?

Solution

Concept - Ratio with perimeter: Let the sides be $3x$ and $4x$; perimeter is twice their sum.

Step 1 - Form the equation: $2(3x + 4x) = 56 \Rightarrow 14x = 56 \Rightarrow x = 4$.

Step 2 - Longer side: $4x = 4 \times 4 = 16$ cm.

Tip: Perimeter of a rectangle is $2(l + b)$; solve for the ratio unit first.

Answer: 16 [Go Back to Q5](#)

Q6.

Q. A cube of side 5 cm is painted on all faces and cut into 1 cm cubes. How many of the small cubes have no painted face at all?

Solution

Concept - Painted cube, hidden core: Unpainted cubes form the inner block after peeling one layer from every face.



Step 1 - Inner side: Inner block side $= n - 2 = 5 - 2 = 3$.

Step 2 - Count: Unpainted cubes $= (n - 2)^3 = 3^3 = 27$.

Tip: No-face cubes are always $(n - 2)^3$, the completely enclosed core.

Answer: 27 [Go Back to Q6](#)

Q7.

Q. Study the number series 2, 6, 12, 20, 30, ... What is the 8th term of this series?

Solution

Concept - Product pattern series: Each term follows $n(n + 1)$: $1 \cdot 2, 2 \cdot 3, 3 \cdot 4, \dots$

Step 1 - Confirm the rule: For $n = 5$, $5 \times 6 = 30$, which matches.

Step 2 - Eighth term: $8 \times 9 = 72$.

Tip: When differences grow by a constant (here 4, 6, 8, 10), test a simple $n(n + 1)$ form.

Answer: 72 [Go Back to Q7](#)

Q8.

Q. A photograph is 1200 pixels wide and is printed at 300 pixels per inch. What is the printed width in inches?

Solution



Concept - Pixels, ppi and print size: Print size in inches equals pixel count divided by pixels per inch.

Step 1 - Divide: Width = $\frac{1200}{300} = 4$ inches.

Tip: Higher ppi means a smaller but sharper print for the same pixel count.

Answer: 4 [Go Back to Q8](#)

Q9.

Q. A digital image uses 8 bits per channel for its red, green and blue channels. How many distinct intensity values can a single channel take?

Solution

Concept - Bit depth: With b bits, the number of distinct values is 2^b .

Step 1 - Compute: $2^8 = 256$ values, from 0 to 255.

Tip: Three 8-bit channels together give 256^3 , about 16.7 million colours (24-bit colour).

Answer: 256 [Go Back to Q9](#)

Q10.

Q. A layout grid is made of 4 equally spaced vertical lines crossing 3 equally spaced horizontal lines. How many rectangles in total can be formed using these lines?



Solution

Concept - Counting rectangles in a grid: A rectangle needs 2 of the vertical lines and 2 of the horizontal lines.

Step 1 - Choose lines: Vertical pairs = $\binom{4}{2} = 6$; horizontal pairs = $\binom{3}{2} = 3$.

Step 2 - Multiply: Rectangles = $6 \times 3 = 18$.

Tip: Number of rectangles = $\binom{v}{2} \binom{h}{2}$ for v vertical and h horizontal lines.

Answer: 18 [Go Back to Q10](#)

Q11.

Q. A design wheel of diameter 70 cm rolls along the floor. Taking $\pi = \frac{22}{7}$, how many complete rotations does it make to cover a distance of 22 metres?

Solution

Concept - Rolling distance and circumference: One rotation covers a distance equal to the wheel's circumference.

Step 1 - Circumference: $\pi d = \frac{22}{7} \times 70 = 220 \text{ cm} = 2.2 \text{ m}$.

Step 2 - Rotations: $\frac{22}{2.2} = 10$ rotations.

Tip: Convert both distances to the same unit before dividing.

Answer: 10 [Go Back to Q11](#)

Q12.



Q. A father is three times as old as his son today.

In 12 years the father will be twice as old as his son. What is the son's present age in years?

Solution

Concept - Linear age equations: Let the son be s ; then the father is $3s$.

Step 1 - Future condition: $3s + 12 = 2(s + 12)$.

Step 2 - Solve: $3s + 12 = 2s + 24 \Rightarrow s = 12$ years.

Tip: Add the same number of years to both ages before writing the second equation.

Answer: 12 [Go Back to Q12](#)

Q13.

Q. A cylindrical tin can has radius 7 cm and height 10 cm. Taking $\pi = \frac{22}{7}$, what is its curved (lateral) surface area in square cm?

Solution

Concept - Curved surface area of a cylinder: The lateral area is $2\pi rh$, the rectangle formed by unrolling the side.

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

Step 2 - Simplify: $2 \times 22 \times 10 = 440$ square cm.

Tip: Curved surface area excludes the two circular ends; add $2\pi r^2$ only for total surface area.



Answer: 440 [Go Back to Q13](#)

Q14.

Q. At exactly 3:30 on an analogue clock, what is the measure of the smaller angle between the hour hand and the minute hand, in degrees?

Solution

Concept - Clock angles: The minute hand moves 6° per minute; the hour hand moves 0.5° per minute.

Step 1 - Hand positions: Minute hand at $30 \times 6 = 180^\circ$; hour hand at $3 \times 30 + 30 \times 0.5 = 90 + 15 = 105^\circ$.

Step 2 - Difference: $180 - 105 = 75^\circ$.

Tip: Do not forget the hour hand drifts halfway to the next hour by 30 minutes past.

Answer: 75 [Go Back to Q14](#)

Q15.

Q. Which of the following are traditional Indian textile and dyeing crafts?

- (A) Origami
- (B) Bandhani
- (C) Ikat
- (D) Kalamkari



Solution

Concept - Indian textile crafts: Bandhani, Ikat and Kalamkari are all Indian cloth traditions; Origami is not a textile craft.

Step 1 - Evaluate each: A. Origami is the Japanese art of paper folding, not textile - incorrect. B. Bandhani is tie-and-dye from Gujarat and Rajasthan - correct. C. Ikat is resist-dyed yarn weaving from Odisha, Telangana and Gujarat - correct. D. Kalamkari is hand-painted or block-printed cotton from Andhra Pradesh - correct.

Tip: Group crafts by their medium; paper crafts and cloth crafts belong to different families.

Answer: B, C, D [Go Back to Q15](#)

Q16.

Q. In the additive (light) colour model used by screens, which of the following are primary colours?

- (A) Red
- (B) Yellow
- (C) Green
- (D) Blue

Solution

Concept - Additive RGB primaries: Screens mix light using red, green and blue as primaries.

Step 1 - Evaluate each: A. Red is an additive primary - correct. B.



Yellow is a secondary of light (red plus green) - incorrect. C. Green is an additive primary - correct. D. Blue is an additive primary - correct.

Tip: Additive primaries are red, green, blue; yellow, cyan and magenta are their secondaries.

Answer: A, C, D [Go Back to Q16](#)

Q17.

Q. Which of the following are principles of design (rather than elements of design)?

- (A) Texture
- (B) Balance
- (C) Contrast
- (D) Proportion

Solution

Concept - Elements versus principles: Elements are the raw ingredients (line, shape, texture, colour); principles are how those ingredients are arranged.

Step 1 - Evaluate each: A. Texture is an element of design - incorrect. B. Balance is a principle - correct. C. Contrast is a principle - correct. D. Proportion is a principle - correct.

Tip: If it describes an arrangement or relationship, it is usually a principle, not an element.

Answer: B, C, D [Go Back to Q17](#)



Q18.

Q. Which of the following are elements of design (rather than principles of design)?

- (A) Line
- (B) Rhythm
- (C) Unity
- (D) Colour

Solution

Concept - Elements versus principles: Elements are the basic visual building blocks.

Step 1 - Evaluate each: A. Line is an element - correct. B. Rhythm is a principle - incorrect. C. Unity is a principle - incorrect. D. Colour is an element - correct.

Tip: Line, shape, form, colour, texture, space and value are the elements; the rest are usually principles.

Answer: A, D [Go Back to Q18](#)

Q19.

Q. Which of the following are recognised printmaking techniques?

- (A) Etching
 - (B) Lithography
 - (C) Screen printing
 - (D) Woodcut
-



Solution

Concept - Printmaking methods: Printmaking spans intaglio, planographic, stencil and relief families.

Step 1 - Evaluate each: A. Etching is an intaglio method using acid-bitten plates - correct. B. Lithography is a planographic method based on grease and water - correct. C. Screen printing is a stencil method pushing ink through mesh - correct. D. Woodcut is a relief method carved from a block - correct.

Tip: All four are classic printmaking families; here every option is valid.

Answer: A, B, C, D [Go Back to Q19](#)

Q20.

Q. Which of the following are considered warm colours on the colour wheel?

- (A) Blue
- (B) Red
- (C) Green
- (D) Orange

Solution

Concept - Warm versus cool colours: Warm colours sit on the red-orange-yellow side; cool colours on the blue-green-violet side.

Step 1 - Evaluate each: A. Blue is cool - incorrect. B. Red is warm - correct. C. Green is cool - incorrect. D. Orange is warm - correct.



Tip: Warm colours seem to advance toward the viewer; cool colours seem to recede.

Answer: B, D [Go Back to Q20](#)

Q21.

Q. Which of the following image file formats stores graphics as scalable vectors rather than as a fixed grid of pixels?

- (A) SVG
- (B) JPEG
- (C) PNG
- (D) GIF

Solution

Concept - Vector versus raster: Vector files store shapes as maths and scale without blur; raster files store pixels.

Step 1 - Evaluate each: A. SVG (Scalable Vector Graphics) is vector - correct. B. JPEG is a compressed raster format - incorrect. C. PNG is a raster format - incorrect. D. GIF is a raster format - incorrect.

Tip: Logos are best kept as vectors so they stay sharp at any size.

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

Q22.

Q. Which of the following are well-known Indian painters?

- (A) Raja Ravi Varma



- (B) Pablo Picasso
- (C) M. F. Husain
- (D) Nandalal Bose

Solution

Concept - Indian art history: Several Indian masters shaped modern and academic painting in India.

Step 1 - Evaluate each: A. Raja Ravi Varma is famed for oleograph paintings of Indian themes - correct. B. Pablo Picasso was a Spanish artist, co-founder of Cubism - incorrect. C. M. F. Husain was a leading Indian modernist - correct. D. Nandalal Bose was a pioneer of the Bengal School - correct.

Tip: Watch for a foreign name slipped into a list of national figures.

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

Q23.

Q. Which of the following are UNESCO World Heritage Sites located in India?

- (A) Eiffel Tower
- (B) Statue of Unity
- (C) Sun Temple at Konark
- (D) Ajanta Caves

Solution

Concept - Heritage sites in India: UNESCO lists sites of



outstanding cultural or natural value.

Step 1 - Evaluate each: A. The Eiffel Tower is in Paris, France - incorrect. B. The Statue of Unity is a modern monument, not a UNESCO site - incorrect. C. The Sun Temple at Konark is a UNESCO site in Odisha - correct. D. The Ajanta Caves are a UNESCO site in Maharashtra - correct.

Tip: Newly built monuments are usually not on the heritage list, however popular they are.

Answer: C, D [Go Back to Q23](#)

Q24.

Q. Which of the following typefaces belongs to the serif category?

- (A) Helvetica
- (B) Times New Roman
- (C) Futura
- (D) Arial

Solution

Concept - Serif versus sans-serif: Serif fonts carry small feet at the stroke ends; sans-serif fonts do not.

Step 1 - Evaluate each: A. Helvetica is sans-serif - incorrect. B. Times New Roman is a serif face - correct. C. Futura is a geometric sans-serif - incorrect. D. Arial is sans-serif - incorrect.

Tip: Serifs aid reading in long printed passages; sans-serif reads cleanly on screens.



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

Q25.

Q. Which of the following are traditional Indian folk or tribal painting styles?

- (A) Madhubani
- (B) Warli
- (C) Gond
- (D) Ukiyo-e

Solution

Concept - Indian folk painting: Distinct communities developed their own visual languages across India.

Step 1 - Evaluate each: A. Madhubani is from the Mithila region of Bihar - correct. B. Warli is a tribal style from Maharashtra - correct. C. Gond is a tribal style from Madhya Pradesh - correct. D. Ukiyo-e is a Japanese woodblock print tradition - incorrect.

Tip: Ukiyo-e belongs to Japan; the other three are Indian folk traditions.

Answer: A, B, C [Go Back to Q25](#)

Q26.

Q. Which of the following terms describe types of balance used in visual composition?

- (A) Symmetrical
- (B) Kerning



- (C) Radial
 - (D) Leading
-

Solution

Concept - Balance in composition: Balance describes how visual weight is distributed; symmetrical, asymmetrical and radial are its main types.

Step 1 - Evaluate each: A. Symmetrical balance mirrors weight across an axis - correct. B. Kerning is spacing between letters, a typography term - incorrect. C. Radial balance arranges weight around a central point - correct. D. Leading is the spacing between lines of type - incorrect.

Tip: Kerning and leading belong to typography, not to composition balance.

Answer: A, C [Go Back to Q26](#)

Q27.

Q. Which of the following are stages of the design thinking process as taught in the widely used five-stage model?

- (A) Empathise
 - (B) Ideate
 - (C) Prototype
 - (D) Test
-

Solution



Concept - Design thinking framework: The five-stage model runs Empathise, Define, Ideate, Prototype and Test.

Step 1 - Evaluate each: A. Empathise, understanding users, is a stage - correct. B. Ideate, generating ideas, is a stage - correct. C. Prototype, building rough models, is a stage - correct. D. Test, checking with users, is a stage - correct.

Tip: The missing fifth stage here is Define; all four listed options are genuine stages.

Answer: A, B, C, D [Go Back to Q27](#)

Q28.

Q. Which of the following is correctly measured in dots per inch (dpi)?

- (A) Font weight
- (B) Colour temperature
- (C) Aspect ratio
- (D) Print resolution

Solution

Concept - Units in design: Dots per inch counts how many ink dots a printer lays in one inch, a measure of print resolution.

Step 1 - Evaluate each: A. Font weight is described as light, regular or bold - incorrect. B. Colour temperature is measured in kelvin - incorrect. C. Aspect ratio is a ratio such as 16:9 - incorrect. D. Print resolution is measured in dpi - correct.



Tip: Match each quantity to its natural unit; dpi is strictly about print or scan detail.

Answer: D [Go Back to Q28](#)

Q29.

Q. Which of the following people are associated with the Bauhaus school?

- (A) Walter Gropius
- (B) Wassily Kandinsky
- (C) Antoni Gaudi
- (D) Marcel Breuer

Solution

Concept - Bauhaus movement: The Bauhaus (Germany, 1919 to 1933) united art, craft and industry.

Step 1 - Evaluate each: A. Walter Gropius founded the Bauhaus - correct. B. Wassily Kandinsky taught there - correct. C. Antoni Gaudi was a Spanish architect of the Modernisme movement, not Bauhaus - incorrect. D. Marcel Breuer studied and taught there and designed the Wassily chair - correct.

Tip: Gaudi's organic Barcelona buildings predate and differ sharply from Bauhaus rationalism.

Answer: A, B, D [Go Back to Q29](#)

Q30.



Q. Identify the odd one out from the following.

- (A) Circle
 - (B) Square
 - (C) Triangle
 - (D) Cube
-

Solution

Concept - Grouping by dimension: Sort the shapes by how many dimensions they occupy.

Step 1 - Classify: Circle, square and triangle are two-dimensional; a cube is three-dimensional.

Step 2 - Pick the misfit: The cube is the odd one out.

Tip: When shapes mix, first check flat versus solid before anything else.

Answer: D [Go Back to Q30](#)

Q31.

Q. In a certain code each letter is replaced by the next letter of the alphabet, so RED becomes SFE. Using the same rule, how is BLUE written?

- (A) CMVF
 - (B) CMUF
 - (C) AKTD
 - (D) CNVF
-



Solution

Concept - Shift cipher (+1): Replace each letter by the one that follows it.

Step 1 - Shift each letter: B to C, L to M, U to V, E to F.

Step 2 - Read result: BLUE becomes CMVF.

Tip: Apply the shift letter by letter and watch that Z wraps to A.

Answer: A [Go Back to Q31](#)

Q32.

Q. Find the next term in the series 3, 9, 27, 81, ...

- (A) 162
- (B) 216
- (C) 243
- (D) 324

Solution

Concept - Geometric progression: Each term is the previous term multiplied by a fixed ratio.

Step 1 - Find the ratio: $9 \div 3 = 3$, so the common ratio is 3.

Step 2 - Next term: $81 \times 3 = 243$.

Tip: A constant multiplier signals a geometric series; a constant difference signals an arithmetic one.

Answer: C [Go Back to Q32](#)

Q33.



Q. A person walks 5 km due north, turns right and walks 3 km, then turns right again and walks 5 km. How far is the person now from the starting point?

- (A) 3 km
- (B) 5 km
- (C) 8 km
- (D) 13 km

Solution

Concept - Direction tracking: Track north-south and east-west displacements separately.

Step 1 - Trace the path: 5 km north, then 3 km east, then 5 km south.

Step 2 - Net displacement: North and south cancel; only 3 km east remains, so the distance is 3 km.

Tip: Two right turns after heading north leave you facing south, undoing the vertical move.

Answer: A [Go Back to Q33](#)

Q34.

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

- (A) Mother
- (B) Sister



- (C) Daughter
(D) Aunt

Solution

Concept - Blood relations: Work the relationship inward from the grandfather.

Step 1 - Identify the son: The grandfather's only son is the man's own father.

Step 2 - Identify the girl: The daughter of his father is his sister.

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

Answer: B [Go Back to Q34](#)

Q35.

Q. Which of the following capital letters looks exactly the same as itself in a left-right (vertical axis) mirror?

- (A) F
(B) G
(C) J
(D) T

Solution

Concept - Mirror symmetry: A letter reads the same in a left-right mirror only if it is symmetric about a vertical axis.



Step 1 - Test each: F, G and J are not left-right symmetric; T is symmetric about its vertical stem.

Step 2 - Choose: Only T is unchanged.

Tip: Letters like A, H, I, M, O, T, U, V, W, X, Y survive a left-right mirror.

Answer: D [Go Back to Q35](#)

Q36.

Q. On a standard die the numbers on opposite faces always add up to 7. If a die shows 2 on the top face, what number is on the bottom face?

- (A) 4
- (B) 5
- (C) 6
- (D) 3

Solution

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

Step 1 - Apply the rule: Bottom = $7 - 2 = 5$.

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

Answer: B [Go Back to Q36](#)

Q37.



Q. A cube of side 3 cm is painted on all faces and cut into 1 cm cubes. How many of the small cubes have exactly one painted face?

- (A) 6
- (B) 8
- (C) 12
- (D) 1

Solution

Concept - Painted cube, one-face rule: One-face cubes lie at the centre of each face of the big cube.

Step 1 - Per face count: Each face has $(n - 2)^2 = (3 - 2)^2 = 1$ such cube.

Step 2 - All faces: $6 \times 1 = 6$ cubes.

Tip: One-face cubes always number $6(n - 2)^2$.

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

Q38.

Q. On the traditional artist's (RYB) 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 each other on the wheel.

Step 1 - Locate the pair: On the RYB wheel blue sits opposite orange.

Tip: The classic complementary pairs are red-green, blue-orange and yellow-violet.

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

Q39.

Q. In typography, the vertical space between successive lines of text is called:

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

Solution

Concept - Typographic spacing terms: Each term names a different kind of spacing.

Step 1 - Match: Kerning is space between two letters, tracking is overall letter spacing, leading is line-to-line spacing, and the baseline is the line letters rest on.

Step 2 - Choose: Line spacing is leading.

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



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

Q40.

Q. Adjusting the space between two specific individual letters to improve their fit is known as:

- (A) Kerning
- (B) Leading
- (C) Tracking
- (D) Ligature

Solution

Concept - Typographic spacing terms: Kerning fine-tunes the gap between a specific letter pair.

Step 1 - Match: Leading is line spacing, tracking is uniform spacing across a run, and a ligature joins letters into one glyph.

Step 2 - Choose: Pair-specific spacing is kerning.

Tip: Kerning targets pairs like AV or To that otherwise look loose.

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

Q41.

Q. Which Indian city is most famous for its traditional Blue Pottery craft?

- (A) Lucknow
- (B) Jaipur
- (C) Moradabad



(D) Mysore

Solution

Concept - Indian craft geography: Many Indian crafts are tied to specific cities.

Step 1 - Match: Blue Pottery, with its cobalt-blue glaze, is the signature craft of Jaipur, Rajasthan.

Tip: Moradabad is known for brassware and Lucknow for Chikankari embroidery.

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

Q42.

Q. The famous bronze figurine known as the "Dancing Girl" belongs to which of the following?

- (A) Maurya period
- (B) Gupta period
- (C) Indus Valley Civilisation
- (D) Chola dynasty

Solution

Concept - Indian art history: The Dancing Girl is an early example of lost-wax bronze casting.

Step 1 - Place it: It was found at Mohenjo-daro, a site of the Indus Valley Civilisation.



Tip: Its confident pose shows advanced metal craft existed thousands of years ago.

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

Q43.

Q. The golden ratio, widely used in art and design for pleasing proportions, is approximately equal to:

- (A) 1.414
- (B) 1.618
- (C) 3.142
- (D) 2.718

Solution

Concept - Golden ratio: The golden ratio, denoted φ , is about 1.618.

Step 1 - Reject the others: 1.414 is $\sqrt{2}$, 3.142 is π , and 2.718 is e .

Step 2 - Choose: The golden ratio is 1.618.

Tip: Rectangles in the ratio 1 : 1.618 are often felt to be well proportioned.

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

Q44.

Q. From the following list of materials, identify the odd one out.

- (A) Oak
- (B) Teak



- (C) Pine
(D) Marble
-

Solution

Concept - Grouping by material family: Sort the materials by their basic type.

Step 1 - Classify: Oak, teak and pine are woods; marble is a stone.

Step 2 - Choose: Marble is the odd one out.

Tip: Check origin first: plant-based timber versus quarried stone.

Answer: D [Go Back to Q44](#)

Q45.

Q. Find the next letter in the series A, C, E, G, ...

- (A) H
(B) I
(C) J
(D) K
-

Solution

Concept - Alphabet skip series: The letters advance by two positions each step.

Step 1 - Confirm the gap: A, C, E, G each skip one letter.

Step 2 - Next letter: After G, skipping H gives I.

Tip: Number the alphabet (A=1, C=3, E=5, G=7) to see the step



of two.

Answer: B [Go Back to Q45](#)

Q46.

Q. Complete the analogy: $2 : 8 :: 3 : ?$

- (A) 9
- (B) 18
- (C) 27
- (D) 12

Solution

Concept - Cube relationship: The second number is the cube of the first.

Step 1 - Confirm: $2^3 = 8$.

Step 2 - Apply: $3^3 = 27$.

Tip: Test squares and cubes early when a small number maps to a much larger one.

Answer: C [Go Back to Q46](#)

Q47.

Q. What is the angle between the hour hand and the minute hand of a clock at exactly 6:00?

- (A) 90 degrees
- (B) 120 degrees
- (C) 150 degrees



(D) 180 degrees

Solution

Concept - Clock angles: At an exact hour the minute hand points to 12 and the hour hand to the hour mark.

Step 1 - Positions: At 6:00 the hands point straight up and straight down.

Step 2 - Angle: Opposite directions make a straight angle of 180 degrees.

Tip: Each hour mark is 30 degrees apart; six marks give $6 \times 30 = 180$ degrees.

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

Q48.

Q. Which image file format supports transparency and lossless compression, making it a common choice for web logos?

- (A) JPEG
 - (B) PNG
 - (C) BMP
 - (D) TIFF
-

Solution

Concept - Raster format traits: Formats differ in compression and transparency support.



Step 1 - Compare: JPEG is lossy with no transparency, BMP is uncompressed, and TIFF is large and mainly for print.

Step 2 - Choose: PNG offers lossless compression plus an alpha (transparency) channel.

Tip: Use PNG for sharp logos with clear backgrounds and JPEG for photographs.

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

Q49.

Q. The master plan of the city of Chandigarh was designed by which architect?

- (A) Le Corbusier
- (B) Charles Correa
- (C) B. V. Doshi
- (D) Louis Kahn

Solution

Concept - Modern Indian architecture: Chandigarh was planned as a modernist city after independence.

Step 1 - Identify: The Swiss-French architect Le Corbusier led its master plan and key buildings.

Tip: Louis Kahn designed IIM Ahmedabad, while Correa and Doshi are celebrated Indian architects of other works.

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

Q50.



Q. Which of the following gases released by burning fuels is the main contributor to the greenhouse effect?

- (A) Carbon dioxide
- (B) Oxygen
- (C) Nitrogen
- (D) Hydrogen

Solution

Concept - Environmental awareness: Greenhouse gases trap heat in the atmosphere.

Step 1 - Identify: Burning fuel releases carbon dioxide, the leading greenhouse gas from human activity.

Step 2 - Reject others: Oxygen and nitrogen are not major greenhouse gases, and hydrogen is not the fuel by-product in question.

Tip: Cutting fossil-fuel use lowers carbon dioxide and slows warming.

Answer: A [Go Back to Q50](#)

Q51.

Q. Which of the following is a renewable source of energy?

- (A) Coal
- (B) Petroleum
- (C) Solar
- (D) Natural gas



Solution

Concept - Renewable versus non-renewable: Renewable sources replenish naturally and do not run out with use.

Step 1 - Classify: Coal, petroleum and natural gas are fossil fuels that are non-renewable.

Step 2 - Choose: Solar energy is renewable.

Tip: Sun, wind, water and biomass are the common renewable sources.

Answer: C [Go Back to Q51](#)

Q52.

Q. On a map drawn to a scale of 1 : 50000, two towns are 2 cm apart. What is the actual distance between them?

- (A) 0.5 km
- (B) 5 km
- (C) 10 km
- (D) 1 km

Solution

Concept - Map scale: Actual distance equals map distance multiplied by the scale factor.

Step 1 - Multiply: $2 \text{ cm} \times 50000 = 100000 \text{ cm}$.

Step 2 - Convert: $100000 \text{ cm} = 1000 \text{ m} = 1 \text{ km}$.



Tip: Convert to metres and kilometres at the end so the answer is easy to read.

Answer: D [Go Back to Q52](#)

Q53.

Q. In the traditional artist's (RYB) colour model, the three primary colours are:

- (A) Red, Green, Blue
- (B) Cyan, Magenta, Yellow
- (C) Red, Yellow, Blue
- (D) Orange, Green, Violet

Solution

Concept - RYB primaries: The traditional painter's model builds colours from red, yellow and blue.

Step 1 - Reject others: Red, green, blue is the light model; cyan, magenta, yellow is the printing model; orange, green, violet are secondaries.

Step 2 - Choose: RYB primaries are red, yellow and blue.

Tip: Mixing the RYB pairs gives orange, green and violet as secondaries.

Answer: C [Go Back to Q53](#)

Q54.



Q. The artist Salvador Dali is most closely associated with which art movement?

- (A) Cubism
 - (B) Impressionism
 - (C) Surrealism
 - (D) Fauvism
-

Solution

Concept - Art movements: Each movement has a distinct outlook and leading figures.

Step 1 - Identify: Dali is famous for dreamlike, subconscious imagery, the hallmark of Surrealism.

Step 2 - Reject others: Cubism links to Picasso, Impressionism to Monet, and Fauvism to Matisse.

Tip: Melting clocks in The Persistence of Memory are a signature Surrealist image.

Answer: C [Go Back to Q54](#)

Q55.

Q. Complete the analogy: Painter is to Brush as Sculptor is to ?

- (A) Chisel
 - (B) Hammer
 - (C) Canvas
 - (D) Clay
-



Solution

Concept - Tool analogy: Match each artist to the primary shaping tool of their craft.

Step 1 - Relationship: A painter shapes an image with a brush.

Step 2 - Apply: A sculptor shapes material chiefly with a chisel.

Tip: Canvas and clay are surfaces or materials, not the shaping tool the analogy asks for.

Answer: A [Go Back to Q55](#)

Q56.

Q. What is the area of a circle of radius 7 cm, taking $\pi = \frac{22}{7}$?

- (A) 44 square cm
- (B) 77 square cm
- (C) 88 square cm
- (D) 154 square cm

Solution

Concept - Area of a circle: $\text{Area} = \pi r^2$.

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

Step 2 - Simplify: $22 \times 7 = 154$ square cm.

Tip: With radius a multiple of 7 and $\pi = \frac{22}{7}$, the 7s cancel neatly.

Answer: D [Go Back to Q56](#)

Q57.



Q. Find the next term in the series 1, 4, 9, 16, 25, ...

- (A) 30
- (B) 32
- (C) 49
- (D) 36

Solution

Concept - Perfect square series: The terms are the squares of consecutive whole numbers.

Step 1 - Confirm: $1^2, 2^2, 3^2, 4^2, 5^2$ give 1, 4, 9, 16, 25.

Step 2 - Next term: $6^2 = 36$.

Tip: Growing gaps of 3, 5, 7, 9 are the signature of consecutive squares.

Answer: D [Go Back to Q57](#)

Q58.

Q (Drawing). It is the afternoon before a wedding, in the open forecourt of a house where a mandap is being decorated. Bamboo poles form the frame, strings of leaves hang half-fixed, and baskets of loose marigolds sit on the ground while a ladder leans against a pole. The focal subject is a decorator standing on the ladder, reaching up with both hands to tie a long marigold garland to the top of the mandap frame, while a helper below hands up the next garland. Imagine this scene and draw it with the decorator tying the garland as the clear centre of interest. Show the bamboo mandap frame, the baskets of flowers, the helper on the ground,



the leaning ladder, and the house and courtyard behind.

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

Read this as a preparation scene built around a tall frame and a reaching figure. Plan the mandap structure and the ladder pose first.

Step 1 - Set perspective and the courtyard: Choose a slightly low eye level so the mandap and the decorator on the ladder feel tall. Let the bamboo frame and the courtyard recede to a vanishing point so the structure has real depth and the poles do not look flat.

Step 2 - Compose in layers: Build three depths - the decorator, ladder and near pole up front, the helper and flower baskets in the middle, the house behind. Let the mandap frame arch over the scene so it becomes a natural frame within the frame.

Step 3 - Make the focal subject win: Place the decorator's reaching hands and the garland near a strong third and give them the sharpest lines. Let the helper's upreached arm, the ladder rails and the frame lines all lead the eye to the tying action.

Step 4 - Fix proportion, then refine line quality: Check the stretched-up posture and that the ladder, poles, baskets and figures sit at believable relative sizes. Then vary weight - firm dark strokes on the decorator, ladder and near pole, light strokes for the far frame and house.



Tip: Show the hanging garlands as gentle sagging curves, heavier where they loop down. That small touch of weight makes the flowers look real instead of like stiff painted lines. [Go Back to Q58](#)

Q59.

Q (Design Aptitude). Young children outgrow their shoes in a few months, so parents keep buying new footwear, and hand-me-down shoes rarely fit the next child well. Design a child's shoe or sandal that can be adjusted to fit a growing foot over a longer period, so one pair lasts through more than one size, while staying comfortable and secure for an active child. Show your design in two states: (1) set to its smallest size for a younger or smaller foot, and (2) adjusted to its largest size for a bigger foot.

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

Approach this as an adjustability problem - one shoe that grows in length and width without becoming loose. Sketch the sizing mechanism.

Step 1 - Nail the requirements: Fix the constraints - it must lengthen to follow a growing foot, still hold the heel and midfoot snugly at every size, stay comfortable and safe for running, and be simple for a parent to adjust. Let each drawn feature serve one of these.

Step 2 - Show the two required states: Draw state one at the



smallest setting with the foot short and the adjuster pulled in. Draw state two at the largest setting with the sole extended or straps let out for a longer foot. Keep it clearly the same shoe at two sizes.

Step 3 - Label features, do not write essays: Use short leader labels - "sliding toe piece", "size lock", "adjustable strap", "stretch upper", "grippy sole". Two or three words each, pointing at the part.

Step 4 - Prove it works: Add a section or top view showing the toe piece sliding out along a track and locking, and a detail of the strap taking up the extra width. This proves both the length growth and a secure fit at each setting.

Tip: A shoe that grows must never grow loose. Show the locking adjuster clearly so the examiner sees the foot stays held at every size, which is the whole challenge of the brief. [Go Back to Q59](#)



Answer Key (Part A)

Section 1 - NAT (Numerical Answer Type)

Q1	Q2	Q3	Q4	Q5	Q6	Q7
48	12.5	84	252	16	27	72

Q8	Q9	Q10	Q11	Q12	Q13	Q14
4	256	18	10	12	440	75

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

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

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

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

Section 3 - MCQ (single correct)

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

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

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



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

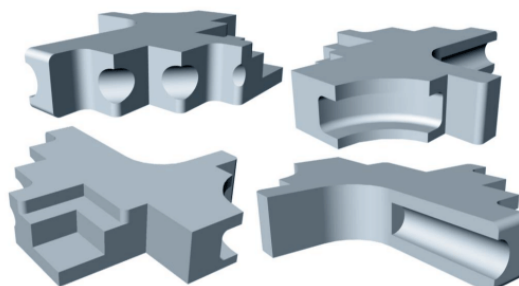
P1. (Past UCEED) If each word is written in a single font and normal and bold versions of the same font are not to be counted separately, how many fonts are used in the given set of words?

पाठव पाठव पाठव पाठव
पाठव पाठव पाठव पाठव
पाठव पाठव पाठव पाठव

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.

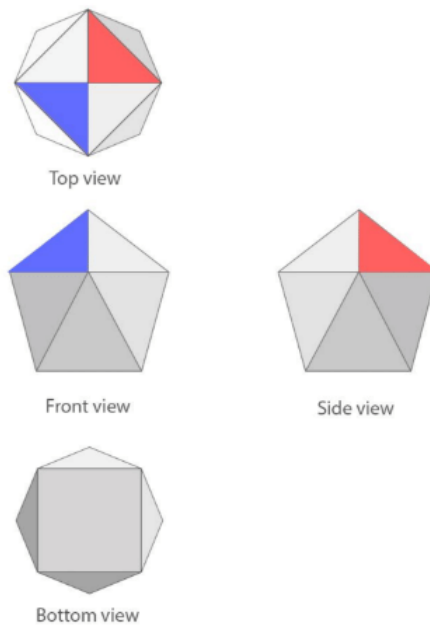
P2. (Past UCEED) The figure shows views of the same solid. Count the number of surfaces.



How to approach

Track how the operation changes faces. Start from the number of faces of the original solid, then add the new faces created by the cut/drill/join and subtract any original faces that are removed or split. Visualise the top, front and side views to be sure no hidden face is missed.

- P3. (Past UCEED)** Four views of a convex solid are shown. How many surfaces does the solid have?



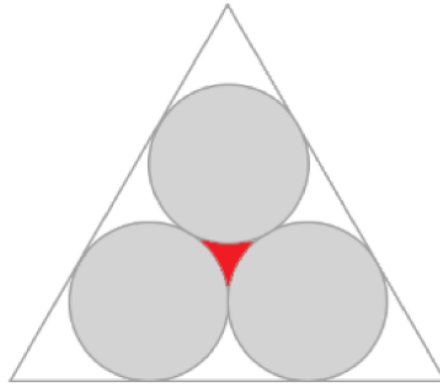
How to approach

Track how the operation changes faces. Start from the number of faces of the original solid, then add the new faces created by the cut/drill/join and subtract any original faces that are removed or split. Visualise the top, front and side views to be sure no hidden face is missed.

- P4. (Past UCEED)** Three circles of radius 10 cm are drawn inside an equilateral triangle as shown below. The area of the red coloured



region (in sq. cm., up to two decimal places) in the figure is _____.



How to approach

Note the overall dimensions and find the total area first. Check the figure for symmetry: if the shaded and unshaded regions map onto each other under a rotation or reflection, the shaded area is a simple fraction of the whole. Otherwise split the shaded shape into triangles and rectangles, read each base and height off the figure, compute each area, and add them.

