

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. X is three times as old as Y was three years ago. After seventeen years, Y will be as old as X is today. What is the sum of the present ages of X and Y?

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

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

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

[View Solution](#)

Q3. In typography, one pica equals twelve points and one inch equals six picas. How many points are there in three inches?

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

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Q4. A designer draws a floor plan at a scale of one to fifty. On the plan a wall measures fourteen centimetres. What is the actual length of the wall, in centimetres?

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

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Q5. A rectangular poster measures sixty centimetres by forty centimetres. A uniform blank border five centimetres wide is left along all four edges. What is the area, in square centimetres, of the inner printable region?

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

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Q6. Look at the number pattern two, six, twelve, twenty, thirty and find the next term.

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

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Q7. What is the angle, in degrees, between the hour hand and the minute hand of a clock at exactly three o'clock?

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

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Q8. A digital image is nine hundred pixels wide. If it is printed at a resolution of three hundred pixels per inch, what is its printed width, in inches?

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

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Q9. In an eight-bit colour channel, brightness values run from zero up to two hundred fifty-five. How many distinct values can a single channel represent?

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

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Q10. A design studio quotes twelve thousand rupees for a logo and then offers a fifteen percent discount. What is the final price, in rupees?

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

[View Solution](#)

Q11. At a design meetup, each of the eight participants shakes hands exactly once with every other participant. How many handshakes take place in total?

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

[View Solution](#)



Q12. A cube of side six centimetres is painted on all faces and then cut into small cubes of side one centimetre. How many of the small cubes have no painted face at all?

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

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Q13. A photograph has an aspect ratio of three to two. If its longer side measures eighteen centimetres, what is its shorter side, in centimetres?

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

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Q14. The perimeter of a square logo tile is forty-eight centimetres. What is the area of the tile, in square centimetres?

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

[View Solution](#)

Section 2: Multiple Select Questions (MSQ)

Q15. Which of the following statements related to Indian musicians is/are TRUE?

(One or more options may be correct.)

- (A) Ustad Allah Rakha and Ustad Zakir Hussain are known for playing the Tabla
- (B) Pandit Nikhil Banerjee and Ustad Vilayat Khan are known for playing the Sitar
- (C) Ustad Ali Akbar Khan, Ustad Amjad Ali Khan and Dr. L. Subramaniam are known for playing the Violin



- (D) Pandit Ravi Shankar and Pt. Hariprasad Chaurasia are known for playing the Shehnai

[View Solution](#)

Q16. Which of the following statements about colour is/are TRUE?

(One or more options may be correct.)

- (A) Red, green and yellow are the three subtractive primary colours used in printing
- (B) In the additive (RGB) model, red, green and blue light combine to produce white
- (C) Complementary colours sit directly opposite each other on the colour wheel
- (D) Adding black to a hue produces a tint of that hue

[View Solution](#)

Q17. Which of the following typography statements is/are TRUE?

(One or more options may be correct.)

- (A) Leading refers to the horizontal space between words in a line
- (B) A serif is the small stroke added at the end of a letter's main strokes
- (C) Kerning is the adjustment of space between two specific letters
- (D) The x-height is the height of the lowercase letters such as x

[View Solution](#)

Q18. Which of the following statements about Indian art and craft traditions is/are TRUE?

(One or more options may be correct.)



- (A) Madhubani painting originates from the Mithila region of Bihar
- (B) Pattachitra is a cloth-based scroll painting tradition of Odisha and Bengal
- (C) Blue Pottery of Jaipur is fired using cow dung as its main raw material
- (D) Warli painting is a tribal art form associated with Maharashtra

[View Solution](#)

Q19. Which of the following statements about materials and processes is/are TRUE?

(One or more options may be correct.)

- (A) Vulcanisation is a process used to harden and strengthen glass
- (B) Anodising is a surface treatment commonly applied to aluminium
- (C) Terracotta is a form of fired clay used in pottery and sculpture
- (D) Injection moulding is widely used to mass-produce plastic parts

[View Solution](#)

Q20. Which of the following statements about Indian architecture is/are TRUE?

(One or more options may be correct.)

- (A) The Taj Mahal was built mainly in the Dravidian temple style
- (B) The Sun Temple at Konark is designed in the shape of a mosque
- (C) The Charminar is located in the city of Delhi
- (D) The Lotus Temple in Delhi is a Bahai house of worship

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Q21. Which of the following statements about digital image formats is/are TRUE?

(One or more options may be correct.)

- (A) A JPEG file supports full transparency through an alpha channel
- (B) PNG uses lossy compression that discards image detail
- (C) SVG is a vector format that scales to any size without losing quality
- (D) A GIF image can display up to sixteen million colours at once

[View Solution](#)

Q22. Which of the following statements about design history and practice is/are TRUE?

(One or more options may be correct.)

- (A) The Bauhaus school of design was founded in Japan
- (B) Dieter Rams is well known for his industrial design work at Braun
- (C) The Ulm School of Design influenced modern product design education
- (D) Ergonomics studies how a product fits the human body and its use

[View Solution](#)

Q23. Which of the following statements about design in India is/are TRUE?

(One or more options may be correct.)

- (A) The National Institute of Design (NID) is located in Ahmedabad
- (B) The India Report on design was written by Le Corbusier
- (C) The Industrial Design Centre (IDC) at IIT Bombay is a well-known design school
- (D) The Ambassador car was manufactured by Maruti



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Q24. Which of the following statements about colour properties is/are TRUE?

(One or more options may be correct.)

- (A) Hue, saturation and value all describe the same single property of colour
- (B) Saturation refers to the intensity or purity of a colour
- (C) Blue and green are classified as warm colours
- (D) A monochromatic colour scheme is built from many different hues

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

(One or more options may be correct.)

- (A) Thermosetting plastics can be remelted and reshaped again and again
- (B) Jute is a synthetic petroleum-based fibre
- (C) Bamboo is a fast-growing renewable material used in furniture
- (D) Recycling aluminium uses far less energy than making it from raw ore

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Q26. Which of the following statements about basic layout and design principles is/are TRUE?

(One or more options may be correct.)



- (A) A grid helps organise and align elements on a page
- (B) Contrast can be created using differences in size, colour or weight
- (C) Whitespace is the empty area around and between design elements
- (D) Alignment helps create visual order in a layout

[View Solution](#)

Q27. Which of the following statements about Indian handicrafts is/are TRUE?

(One or more options may be correct.)

- (A) Kalamkari is a metal-casting craft from Kashmir
- (B) Phulkari is an embroidery tradition of Punjab
- (C) Tanjore paintings are known for the complete absence of gold leaf
- (D) Bidriware is a metal handicraft from Bidar in Karnataka

[View Solution](#)

Q28. Which of the following statements about photography is/are TRUE?

(One or more options may be correct.)

- (A) A higher ISO setting always produces an image with less noise
- (B) Aperture is measured in units called pixels
- (C) Depth of field is the range of distance in a scene that appears acceptably sharp
- (D) Shutter speed has no effect on motion blur

[View Solution](#)

Q29. Which of the following statements about logos and branding is/are TRUE?



(One or more options may be correct.)

- (A) A logo should ideally stay recognisable even at very small sizes
- (B) A wordmark logo contains no text at all
- (C) Skeuomorphism means stripping away every real-world detail from an interface
- (D) Consistent use of colour and type strengthens a brand's identity

[View Solution](#)

Section 3: Multiple Choice Questions (MCQ)

Q30. Which letter is NEVER used while printing a calendar that mentions the names of all the days of the week and the months in full form?

- (A) W
- (B) G
- (C) K
- (D) V

[View Solution](#)

Q31. P, Q, R, S are competing in a slow cycle race, in which the slowest cyclist wins. A few minutes after the race begins, P is physically ahead of Q. R and S are physically behind Q. S is physically ahead of R. P gets eliminated and R overtakes Q. Just before the end mark, S overtakes Q. Which of the following is true?

- (A) R is the winner
- (B) S is the winner
- (C) Q is the winner
- (D) Q is the runner up



[View Solution](#)

Q32. In a certain code, CAT is written as DBU. How is DOG written in the same code?

- (A) EPH
- (B) EPG
- (C) CPF
- (D) FPH

[View Solution](#)

Q33. Pointing to a man, a woman said, "His mother is the only daughter of my mother." How is the woman related to the man?

- (A) Sister
- (B) Mother
- (C) Aunt
- (D) Grandmother

[View Solution](#)

Q34. A boy walks five metres towards the north, then turns right and walks three metres, then turns right again and walks five metres. How far and in which direction is he from his starting point?

- (A) 3 metres towards the west
- (B) 5 metres towards the south
- (C) 3 metres towards the east
- (D) 8 metres towards the north

[View Solution](#)



Q35. Find the next number in the series: 3, 6, 11, 18, 27, ?

- (A) 34
- (B) 36
- (C) 37
- (D) 38

[View Solution](#)

Q36. Which one of the following is the odd one out?

- (A) Tabla
- (B) Sitar
- (C) Sarod
- (D) Veena

[View Solution](#)

Q37. The famous design principle "Form follows function" is most closely associated with which person?

- (A) Le Corbusier
- (B) Louis Sullivan
- (C) Dieter Rams
- (D) Raymond Loewy

[View Solution](#)

Q38. In a row of children all facing north, Ravi is seventh from the left end and fifth from the right end. How many children are there in the row?

- (A) 12



- (B) 13
- (C) 11
- (D) 10

[View Solution](#)

Q39. If each letter is replaced by its position in the English alphabet, so that FACE becomes 6135, then how is HEAD written?

- (A) 8415
- (B) 8541
- (C) 8154
- (D) 8514

[View Solution](#)

Q40. In printing, which colour results when equal amounts of cyan and magenta ink are mixed?

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

[View Solution](#)

Q41. On a standard dice, the numbers on opposite faces always add up to seven. If the top face shows two, which number is on the bottom face?

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



(D) 3

[View Solution](#)

Q42. Find the next letter in the series: B, D, G, K, P, ?

(A) T

(B) U

(C) V

(D) W

[View Solution](#)

Q43. All cups are plates. All plates are bowls. Which conclusion definitely follows?

(A) Some bowls are cups only

(B) No cup is a bowl

(C) All bowls are cups

(D) All cups are bowls

[View Solution](#)

Q44. What is the angle between the hour hand and the minute hand of a clock at exactly six o'clock?

(A) 180 degrees

(B) 150 degrees

(C) 90 degrees

(D) 120 degrees

[View Solution](#)



Q45. Warli painting is traditionally made using mainly which single colour of pigment on an earthy base?

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

[View Solution](#)

Q46. A square logo is scaled up so that each side becomes three times as long. By what factor does its area increase?

- (A) 3
- (B) 6
- (C) 9
- (D) 12

[View Solution](#)

Q47. In a certain code, MOUSE is written as ESUOM. How is DESIGN written in the same code?

- (A) NGSIED
- (B) NGIESD
- (C) NGISDE
- (D) NGISED

[View Solution](#)

Q48. Which one of the following does NOT belong with the others?

- (A) Cube



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

[View Solution](#)

Q49. A mother is four times as old as her daughter. In twenty years, the mother will be twice as old as her daughter. What is the daughter's present age, in years?

- (A) 8
- (B) 10
- (C) 12
- (D) 15

[View Solution](#)

Q50. In typography, what is the name of the imaginary line on which most letters of a line of text sit?

- (A) x-height
- (B) Cap line
- (C) Baseline
- (D) Ascender

[View Solution](#)

Q51. A digital image is one thousand and twenty-four pixels wide. If it is reduced to one quarter of its width, how many pixels wide will it be?

- (A) 512
- (B) 128



(C) 384

(D) 256

[View Solution](#)

Q52. A is B's brother. C is B's mother. D is C's father. How is A related to D?

(A) Grandson

(B) Son

(C) Grandfather

(D) Nephew

[View Solution](#)

Q53. Find the next number in the series: 2, 3, 5, 8, 13, ?

(A) 18

(B) 21

(C) 20

(D) 22

[View Solution](#)

Q54. The Sanchi Stupa, famous for its ancient Buddhist gateways, is located in which Indian state?

(A) Uttar Pradesh

(B) Bihar

(C) Maharashtra

(D) Madhya Pradesh

[View Solution](#)



Q55. The sun rises in the east. A person stands facing the rising sun and stretches both arms straight out to the sides. Towards which direction does the left arm point?

- (A) North
- (B) South
- (C) West
- (D) East

[View Solution](#)

Q56. On a traditional colour wheel, which of the following pairs are complementary colours?

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

[View Solution](#)

Q57. A circular badge has a radius of seven centimetres. What is its area?

(Take $\pi = \frac{22}{7}$.)

- (A) 44
- (B) 49
- (C) 22
- (D) 154

[View Solution](#)

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



Q58. [Drawing - 50 Marks]

Imagine a school classroom during a lesson. Rows of wooden desks and benches face the front, students sit with open books and raised hands, bags hang from hooks, charts and a map cover the walls, and light streams through tall windows. Draw this classroom scene, giving prominence to a teacher standing at the blackboard mid-explanation, chalk in hand and pointing to a diagram being drawn.

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]

Students who share a single study table with siblings often find their pens, notes and small items mixed up and lost. Design a desk organiser that keeps each user's stationery and papers separate and tidy on a shared table. Show your organiser in two states: closed and packed away when the table is needed for other use, and open with stationery sorted and in use during study.

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. X is three times as old as Y was three years ago.

After seventeen years, Y will be as old as X is today.

What is the sum of the present ages of X and Y?

Solution

Concept - Linear age equations: Let the present ages be X and Y . Turn each sentence into one equation, then solve.

Step 1 - First sentence: Y was $Y - 3$ three years ago, so $X = 3(Y - 3) = 3Y - 9$.

Step 2 - Second sentence: After seventeen years Y becomes $Y + 17$, and this equals X today, so $Y + 17 = X$.

Step 3 - Solve: Substitute $X = Y + 17$ into $X = 3Y - 9$: $Y + 17 = 3Y - 9 \Rightarrow 2Y = 26 \Rightarrow Y = 13$, so $X = 30$. Check: Y three years ago was ten, and $3 \times 10 = 30$. Sum = $30 + 13 = 43$.

Tip: Anchor every clause to the same reference year (today) before combining the equations.

Answer: 43 [Go Back to Q1](#)

Q2.

Q. A wooden cube of side ten centimetres is painted on all six faces and then cut into small cubes of side two centimetres.

How many of the small cubes have exactly two painted faces?



Solution

Concept - Painted cube counting: Cutting a cube of side n small units per edge, the cubes with exactly two painted faces lie along the edges but not at the corners. Their count is $12(n - 2)$.

Step 1 - Find n : Each edge is $10 \div 2 = 5$ small cubes long, so $n = 5$.

Step 2 - Apply the rule: Two painted faces = $12(n - 2) = 12 \times 3 = 36$.

Tip: Corners give three faces, edges give two, face-centres give one, and the interior gives zero.

Answer: 36 [Go Back to Q2](#)

Q3.

Q. In typography, one pica equals twelve points and one inch equals six picas. How many points are there in three inches?

Solution

Concept - Typographic unit conversion: Chain the given ratios to move from inches to picas to points.

Step 1 - Inches to picas: $3 \text{ inches} \times 6 = 18 \text{ picas}$.

Step 2 - Picas to points: $18 \times 12 = 216 \text{ points}$.

Tip: Remember the two anchors of print type: six picas per inch and twelve points per pica.

Answer: 216 [Go Back to Q3](#)

Q4.



Q. A designer draws a floor plan at a scale of one to fifty. On the plan a wall measures fourteen centimetres. What is the actual length of the wall, in centimetres?

Solution

Concept - Scale factor: A scale of 1 : 50 means every drawn unit stands for fifty real units, so multiply the drawing measure by fifty.

Step 1 - Multiply: $14 \times 50 = 700$ centimetres.

Tip: On a reducing scale the real object is always the larger number, so you multiply, never divide.

Answer: 700 [Go Back to Q4](#)

Q5.

Q. A rectangular poster measures sixty centimetres by forty centimetres. A uniform blank border five centimetres wide is left along all four edges. What is the area, in square centimetres, of the inner printable region?

Solution

Concept - Inner rectangle after a border: A border of width w removes $2w$ from each overall dimension.

Step 1 - Inner dimensions: Width = $60 - 2(5) = 50$; height = $40 - 2(5) = 30$.

Step 2 - Area: $50 \times 30 = 1500$ square centimetres.

Tip: Subtract twice the border, once for each side, before finding



the area.

Answer: 1500 [Go Back to Q5](#)

Q6.

Q. Look at the number pattern two, six, twelve, twenty, thirty and find the next term.

Solution

Concept - Product pattern: The terms follow $n(n + 1)$ for $n = 1, 2, 3, \dots$

Step 1 - Check: $1 \times 2 = 2, 2 \times 3 = 6, 3 \times 4 = 12, 4 \times 5 = 20, 5 \times 6 = 30.$

Step 2 - Next term: $6 \times 7 = 42.$

Tip: The gaps grow by two each time, which is the signature of an $n(n + 1)$ sequence.

Answer: 42 [Go Back to Q6](#)

Q7.

Q. What is the angle, in degrees, between the hour hand and the minute hand of a clock at exactly three o'clock?

Solution

Concept - Clock geometry: The full dial is 360 degrees split into twelve hour marks, so each mark spans 30 degrees.

Step 1 - Count marks: At three o'clock the minute hand points to



twelve and the hour hand to three, a gap of three marks.

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

Tip: Each hour mark is thirty degrees, so a quarter-turn between hands is ninety degrees.

Answer: 90 [Go Back to Q7](#)

Q8.

Q. A digital image is nine hundred pixels wide. If it is printed at a resolution of three hundred pixels per inch, what is its printed width, in inches?

Solution

Concept - Print size from resolution: Printed length equals pixel count divided by pixels per inch.

Step 1 - Divide: $900 \div 300 = 3$ inches.

Tip: More pixels per inch pack the same pixels into a smaller print, so raising resolution shrinks the printed size.

Answer: 3 [Go Back to Q8](#)

Q9.

Q. In an eight-bit colour channel, brightness values run from zero up to two hundred fifty-five. How many distinct values can a single channel represent?

Solution



Concept - Bit depth: An n -bit channel stores 2^n distinct levels.

Step 1 - Compute: $2^8 = 256$.

Step 2 - Sanity check: Values zero through two hundred fifty-five inclusive number $255 - 0 + 1 = 256$.

Tip: Count includes zero, so the top value is always one less than the total number of levels.

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

Q10.

Q. A design studio quotes twelve thousand rupees for a logo and then offers a fifteen percent discount. What is the final price, in rupees?

Solution

Concept - Percentage discount: Paying after a fifteen percent cut means paying eighty-five percent of the quote.

Step 1 - Discount amount: $15\% \text{ of } 12000 = 0.15 \times 12000 = 1800$.

Step 2 - Final price: $12000 - 1800 = 10200$ rupees.

Tip: Multiplying directly by 0.85 reaches the same answer in one step.

Answer: 10200 [Go Back to Q10](#)

Q11.



Q. At a design meetup, each of the eight participants shakes hands exactly once with every other participant. How many handshakes take place in total?

Solution

Concept - Pairwise counting: The number of unique pairs from n people is $\frac{n(n-1)}{2}$.

Step 1 - Substitute: $\frac{8 \times 7}{2} = \frac{56}{2} = 28$.

Tip: Divide by two because a handshake between two people should not be counted twice.

Answer: 28 [Go Back to Q11](#)

Q12.

Q. A cube of side six centimetres is painted on all faces and then cut into small cubes of side one centimetre. How many of the small cubes have no painted face at all?

Solution

Concept - Hidden inner cubes: The unpainted cubes form the inner block after peeling one layer from every face, giving $(n - 2)^3$.

Step 1 - Find n: $6 \div 1 = 6$ small cubes per edge, so $n = 6$.

Step 2 - Apply the rule: $(6 - 2)^3 = 4^3 = 64$.

Tip: Removing the painted skin from all sides leaves a smaller cube two units shorter on each edge.



Answer: 64 [Go Back to Q12](#)

Q13.

Q. A photograph has an aspect ratio of three to two. If its longer side measures eighteen centimetres, what is its shorter side, in centimetres?

Solution

Concept - Ratio scaling: In a 3 : 2 ratio the shorter side is $\frac{2}{3}$ of the longer side.

Step 1 - Compute: $\frac{2}{3} \times 18 = 12$ centimetres.

Tip: Match the larger ratio number to the longer measured side before scaling.

Answer: 12 [Go Back to Q13](#)

Q14.

Q. The perimeter of a square logo tile is forty-eight centimetres. What is the area of the tile, in square centimetres?

Solution

Concept - Square from perimeter: A square's side is a quarter of its perimeter, and its area is the side squared.

Step 1 - Side: $48 \div 4 = 12$ centimetres.

Step 2 - Area: $12 \times 12 = 144$ square centimetres.

Tip: Always find the side first; perimeter and area are not directly



proportional.

Answer: 144 [Go Back to Q14](#)

Q15.

Q. Which of the following statements related to Indian musicians is/are TRUE?

- (A) Ustad Allah Rakha and Ustad Zakir Hussain are known for playing the Tabla
- (B) Pandit Nikhil Banerjee and Ustad Vilayat Khan are known for playing the Sitar
- (C) Ustad Ali Akbar Khan, Ustad Amjad Ali Khan and Dr. L. Subramaniam are known for playing the Violin
- (D) Pandit Ravi Shankar and Pt. Hariprasad Chaurasia are known for playing the Shehnai

Solution

Concept - Instrument attribution: Match each master to the instrument that made them famous.

Step 1 - Option A: Allah Rakha and Zakir Hussain are legendary tabla players. TRUE.

Step 2 - Option B: Nikhil Banerjee and Vilayat Khan are renowned sitar players. TRUE.

Step 3 - Option C: Ali Akbar Khan and Amjad Ali Khan are sarod maestros, not violinists, so mixing them with L. Subramaniam is wrong. FALSE.

Step 4 - Option D: Ravi Shankar played the sitar and Hariprasad



Chaurasia the flute (bansuri), not the shehnai. FALSE.

Tip: The shehnai is tied above all to Ustad Bismillah Khan. Correct options: A and B.

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

Q16.

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

- (A) Red, green and yellow are the three subtractive primary colours used in printing
- (B) In the additive (RGB) model, red, green and blue light combine to produce white
- (C) Complementary colours sit directly opposite each other on the colour wheel
- (D) Adding black to a hue produces a tint of that hue

Solution

Concept - Colour models and terms: Test each claim against additive light, subtractive ink, and the tint versus shade rule.

Step 1 - Option A: The subtractive primaries used in printing are cyan, magenta and yellow, not red, green and yellow. FALSE.

Step 2 - Option B: Full red, green and blue light together give white in the additive model. TRUE.

Step 3 - Option C: Complementary colours are opposite pairs on the wheel. TRUE.

Step 4 - Option D: Adding black gives a shade; adding white gives



a tint. FALSE.

Tip: Tint means lighter (white added), shade means darker (black added). Correct options: B and C.

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

Q17.

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

- (A) Leading refers to the horizontal space between words in a line
- (B) A serif is the small stroke added at the end of a letter's main strokes
- (C) Kerning is the adjustment of space between two specific letters
- (D) The x-height is the height of the lowercase letters such as x

Solution

Concept - Core typography vocabulary: Check each definition against standard usage.

Step 1 - Option A: Leading is the vertical space between lines of text, not the horizontal space between words. FALSE.

Step 2 - Option B: A serif is exactly that finishing stroke. TRUE.

Step 3 - Option C: Kerning tunes the space between a specific pair of letters. TRUE.

Step 4 - Option D: The x-height measures lowercase letters like x. TRUE.

Tip: Do not confuse leading (line spacing) with tracking (letter spacing) or kerning (pair spacing). Correct options: B, C and D.



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

Q18.

Q. Which of the following statements about Indian art and craft traditions is/are TRUE?

- (A) Madhubani painting originates from the Mithila region of Bihar
- (B) Pattachitra is a cloth-based scroll painting tradition of Odisha and Bengal
- (C) Blue Pottery of Jaipur is fired using cow dung as its main raw material
- (D) Warli painting is a tribal art form associated with Maharashtra

Solution

Concept - Regional craft mapping: Match each tradition to its region and technique.

Step 1 - Option A: Madhubani is rooted in the Mithila region of Bihar. TRUE.

Step 2 - Option B: Pattachitra is a cloth scroll painting of Odisha and Bengal. TRUE.

Step 3 - Option C: Jaipur Blue Pottery uses quartz powder, powdered glass and a paste dough, not clay or cow dung. FALSE.

Step 4 - Option D: Warli is a tribal art of Maharashtra. TRUE.

Tip: Blue Pottery is unusual because it contains no clay at all.
Correct options: A, B and D.



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

Q19.

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

- (A) Vulcanisation is a process used to harden and strengthen glass
- (B) Anodising is a surface treatment commonly applied to aluminium
- (C) Terracotta is a form of fired clay used in pottery and sculpture
- (D) Injection moulding is widely used to mass-produce plastic parts

Solution

Concept - Materials and manufacturing: Judge each process and material claim.

Step 1 - Option A: Vulcanisation strengthens rubber, not glass. FALSE.

Step 2 - Option B: Anodising forms a protective oxide layer on aluminium. TRUE.

Step 3 - Option C: Terracotta is fired clay. TRUE.

Step 4 - Option D: Injection moulding is a standard method for mass plastic parts. TRUE.

Tip: Vulcanisation belongs with rubber and Charles Goodyear.
Correct options: B, C and D.

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



Q20.

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

- (A) The Taj Mahal was built mainly in the Dravidian temple style
- (B) The Sun Temple at Konark is designed in the shape of a mosque
- (C) The Charminar is located in the city of Delhi
- (D) The Lotus Temple in Delhi is a Bahai house of worship

Solution

Concept - Landmark facts: Verify the style and location claimed for each monument.

Step 1 - Option A: The Taj Mahal is a Mughal monument, not Dravidian. FALSE.

Step 2 - Option B: The Konark Sun Temple is shaped like a giant chariot with wheels, not a mosque. FALSE.

Step 3 - Option C: The Charminar is in Hyderabad, not Delhi. FALSE.

Step 4 - Option D: The Lotus Temple is a Bahai house of worship in Delhi. TRUE.

Tip: Only option D survives the check. Correct option: D.

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

Q21.



Q. Which of the following statements about digital image formats is/are TRUE?

- (A) A JPEG file supports full transparency through an alpha channel
- (B) PNG uses lossy compression that discards image detail
- (C) SVG is a vector format that scales to any size without losing quality
- (D) A GIF image can display up to sixteen million colours at once

Solution

Concept - File format properties: Check transparency, compression and colour limits for each format.

Step 1 - Option A: JPEG has no alpha channel, so it cannot store transparency. FALSE.

Step 2 - Option B: PNG uses lossless compression, keeping every detail. FALSE.

Step 3 - Option C: SVG is vector-based and scales cleanly at any size. TRUE.

Step 4 - Option D: A GIF is limited to a palette of two hundred fifty-six colours, not millions. FALSE.

Tip: For sharp logos at any size, choose SVG. Correct option: C.

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

Q22.



Q. Which of the following statements about design history and practice is/are TRUE?

- (A) The Bauhaus school of design was founded in Japan
- (B) Dieter Rams is well known for his industrial design work at Braun
- (C) The Ulm School of Design influenced modern product design education
- (D) Ergonomics studies how a product fits the human body and its use

Solution

Concept - Movements and design terms: Assess the origin, designers and vocabulary claimed.

Step 1 - Option A: The Bauhaus was founded in Weimar, Germany, in 1919. FALSE.

Step 2 - Option B: Dieter Rams led design at Braun for decades. TRUE.

Step 3 - Option C: The Ulm School shaped modern product-design teaching. TRUE.

Step 4 - Option D: Ergonomics is the study of fit between products and the human body. TRUE.

Tip: The Bauhaus is German, and Ulm carried its ideas forward. Correct options: B, C and D.

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

Q23.



Q. Which of the following statements about design in India is/are TRUE?

- (A) The National Institute of Design (NID) is located in Ahmedabad
- (B) The India Report on design was written by Le Corbusier
- (C) The Industrial Design Centre (IDC) at IIT Bombay is a well-known design school
- (D) The Ambassador car was manufactured by Maruti

Solution

Concept - Indian design institutions: Verify locations, authorship and makers.

Step 1 - Option A: NID is based in Ahmedabad. TRUE.

Step 2 - Option B: The India Report was written by Charles and Ray Eames, not Le Corbusier. FALSE.

Step 3 - Option C: The IDC at IIT Bombay is a leading design school. TRUE.

Step 4 - Option D: The Ambassador was made by Hindustan Motors, not Maruti. FALSE.

Tip: The Eames India Report led directly to the founding of NID. Correct options: A and C.

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

Q24.



Q. Which of the following statements about colour properties is/are TRUE?

- (A) Hue, saturation and value all describe the same single property of colour
- (B) Saturation refers to the intensity or purity of a colour
- (C) Blue and green are classified as warm colours
- (D) A monochromatic colour scheme is built from many different hues

Solution

Concept - Dimensions of colour: Separate hue, saturation and value, and recall warm versus cool and monochromatic schemes.

Step 1 - Option A: Hue, saturation and value are three different properties, not one. FALSE.

Step 2 - Option B: Saturation is the intensity or purity of a colour. TRUE.

Step 3 - Option C: Blue and green are cool colours, not warm. FALSE.

Step 4 - Option D: A monochromatic scheme uses a single hue with varied tints and shades. FALSE.

Tip: Mono means one, so a monochromatic scheme stays on one hue. Correct option: B.

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

Q25.



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

- (A) Thermosetting plastics can be remelted and reshaped again and again
- (B) Jute is a synthetic petroleum-based fibre
- (C) Bamboo is a fast-growing renewable material used in furniture
- (D) Recycling aluminium uses far less energy than making it from raw ore

Solution

Concept - Material behaviour and green choices: Test recyclability, fibre origin and energy use.

Step 1 - Option A: Thermosets set permanently and cannot be remelted; only thermoplastics can. FALSE.

Step 2 - Option B: Jute is a natural plant fibre, not synthetic. FALSE.

Step 3 - Option C: Bamboo grows quickly and is a renewable furniture material. TRUE.

Step 4 - Option D: Recycling aluminium saves a large share of the energy needed to smelt it from ore. TRUE.

Tip: Thermo-set means set for good; thermo-plastic can be reshaped. Correct options: C and D.

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

Q26.



Q. Which of the following statements about basic layout and design principles is/are TRUE?

- (A) A grid helps organise and align elements on a page
- (B) Contrast can be created using differences in size, colour or weight
- (C) Whitespace is the empty area around and between design elements
- (D) Alignment helps create visual order in a layout

Solution

Concept - Foundations of layout: Each option states a core principle; confirm all four.

Step 1 - Option A: A grid gives structure and alignment. TRUE.

Step 2 - Option B: Contrast comes from varying size, colour or weight. TRUE.

Step 3 - Option C: Whitespace is the empty breathing space in a design. TRUE.

Step 4 - Option D: Alignment builds visual order. TRUE.

Tip: Grid, contrast, whitespace and alignment are all standard layout tools. Correct options: A, B, C and D.

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

Q27.

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



- (A) Kalamkari is a metal-casting craft from Kashmir
- (B) Phulkari is an embroidery tradition of Punjab
- (C) Tanjore paintings are known for the complete absence of gold leaf
- (D) Bidriware is a metal handicraft from Bidar in Karnataka

Solution

Concept - Craft technique and place: Match each craft to its true medium and region.

Step 1 - Option A: Kalamkari is a hand-painted and block-printed textile art of Andhra Pradesh, not metal casting from Kashmir. FALSE.

Step 2 - Option B: Phulkari is the floral embroidery of Punjab. TRUE.

Step 3 - Option C: Tanjore paintings are famous for their gold foil, so claiming an absence of gold is wrong. FALSE.

Step 4 - Option D: Bidriware is a metal craft from Bidar in Karnataka. TRUE.

Tip: Tanjore art is defined by its rich gold leaf. Correct options: B and D.

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

Q28.

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



- (A) A higher ISO setting always produces an image with less noise
- (B) Aperture is measured in units called pixels
- (C) Depth of field is the range of distance in a scene that appears acceptably sharp
- (D) Shutter speed has no effect on motion blur

Solution

Concept - Camera fundamentals: Check ISO, aperture, depth of field and shutter speed.

Step 1 - Option A: A higher ISO usually adds noise, not removes it. FALSE.

Step 2 - Option B: Aperture is measured in f-stops, not pixels. FALSE.

Step 3 - Option C: Depth of field is the sharp-focus range in a scene. TRUE.

Step 4 - Option D: Shutter speed strongly controls motion blur. FALSE.

Tip: A slow shutter blurs motion; a fast shutter freezes it. Correct option: C.

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

Q29.

Q. Which of the following statements about logos and branding is/are TRUE?

- (A) A logo should ideally stay recognisable even at very small sizes



- (B) A wordmark logo contains no text at all
- (C) Skeuomorphism means stripping away every real-world detail from an interface
- (D) Consistent use of colour and type strengthens a brand's identity

Solution

Concept - Branding principles: Assess scalability, logo types and design terms.

Step 1 - Option A: A good logo scales down and stays legible. TRUE.

Step 2 - Option B: A wordmark is made entirely of text, so saying it has no text is wrong. FALSE.

Step 3 - Option C: Skeuomorphism imitates real-world objects; removing all real detail describes flat design. FALSE.

Step 4 - Option D: Consistent colour and type build a strong brand identity. TRUE.

Tip: A wordmark is all text, like many well-known brand names. Correct options: A and D.

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

Q30.

Q. Which letter is NEVER used while printing a calendar that mentions the names of all the days of the week and the months in full form?



- (A) W
- (B) G
- (C) K
- (D) V

Solution

Concept - Exhaustive letter check: List all seven weekday names and twelve month names, then scan for each option letter.

Step 1 - Days and months: Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday; January through December.

Step 2 - Test the options: W appears in Wednesday, G in August, V in November. The letter K appears in none of these words.

Tip: When hunting a missing letter, scan the longer month names first since they hold most rare letters. Correct answer: K (option C).

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

Q31.

Q. P, Q, R, S are competing in a slow cycle race, in which the slowest cyclist wins. A few minutes after the race begins, P is physically ahead of Q. R and S are physically behind Q. S is physically ahead of R. P gets eliminated and R overtakes Q. Just before the end mark, S overtakes Q. Which of the following is true?

- (A) R is the winner
- (B) S is the winner
- (C) Q is the winner
- (D) Q is the runner up



Solution

Concept - Slow race logic: In a slow race the cyclist who is physically last (least distance covered) wins, so being overtaken is good.

Step 1 - Track the order: P is eliminated, so P is out. R overtakes Q, moving R physically ahead of Q. Then S overtakes Q, moving S physically ahead of Q.

Step 2 - Find the last one: After both moves, Q is physically behind both R and S, so Q has covered the least distance and is slowest.

Tip: Slowest equals farthest behind equals winner. Correct answer: Q is the winner (option C).

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

Q32.

Q. In a certain code, CAT is written as DBU. How is DOG written in the same code?

- (A) EPH
- (B) EPG
- (C) CPF
- (D) FPH

Solution

Concept - Letter-shift coding: Compare positions of the code letters with the original.



Step 1 - Find the rule: C to D, A to B, T to U each move one step forward in the alphabet.

Step 2 - Apply to DOG: D to E, O to P, G to H, giving EPH.

Tip: Confirm the shift on every letter of the sample before coding the target. Correct answer: EPH (option A).

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

Q33.

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

- (A) Sister
- (B) Mother
- (C) Aunt
- (D) Grandmother

Solution

Concept - Blood relation chain: Resolve the innermost phrase first.

Step 1 - Only daughter of my mother: The only daughter of the woman's mother is the woman herself.

Step 2 - Substitute: So the man's mother is the woman, meaning the woman is the man's mother.

Tip: Replace descriptive phrases with the actual person before deciding the link. Correct answer: Mother (option B).

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



Q34.

Q. A boy walks five metres towards the north, then turns right and walks three metres, then turns right again and walks five metres. How far and in which direction is he from his starting point?

- (A) 3 metres towards the west
- (B) 5 metres towards the south
- (C) 3 metres towards the east
- (D) 8 metres towards the north

Solution

Concept - Direction tracking: Turning right from north faces east, then a further right faces south.

Step 1 - Trace the path: North five metres, then east three metres, then south five metres.

Step 2 - Net displacement: The five north and five south cancel, leaving only three metres to the east.

Tip: Cancel equal opposite legs before reading the final direction.
Correct answer: 3 metres towards the east (option C).

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

Q35.

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

- (A) 34
- (B) 36
- (C) 37



(D) 38

Solution

Concept - Rising differences: Look at the gaps between consecutive terms.

Step 1 - Differences: 3, 5, 7, 9, which increase by two each time.

Step 2 - Next gap: The next difference is 11, so $27 + 11 = 38$.

Tip: When first differences form their own steady pattern, extend that pattern first. Correct answer: 38 (option D).

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

Q36.

Q. Which one of the following is the odd one out?

- (A) Tabla
- (B) Sitar
- (C) Sarod
- (D) Veena

Solution

Concept - Classify by family: Group the instruments by how sound is produced.

Step 1 - Identify types: Sitar, sarod and veena are string instruments.

Step 2 - Spot the outsider: The tabla is a percussion instrument,



so it does not belong with the strings.

Tip: Sort items into families first; the lone member of a different family is the odd one. Correct answer: Tabla (option A).

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

Q37.

Q. The famous design principle "Form follows function" is most closely associated with which person?

- (A) Le Corbusier
- (B) Louis Sullivan
- (C) Dieter Rams
- (D) Raymond Loewy

Solution

Concept - Design history attribution: Link the phrase to the person who coined it.

Step 1 - Recall the source: The American architect Louis Sullivan coined "Form follows function" in the context of building design.

Step 2 - Rule out others: Le Corbusier, Rams and Loewy are major designers, but this specific phrase belongs to Sullivan.

Tip: Sullivan is often called the father of the skyscraper. Correct answer: Louis Sullivan (option B).

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

Q38.



Q. In a row of children all facing north, Ravi is seventh from the left end and fifth from the right end. How many children are there in the row?

- (A) 12
- (B) 13
- (C) 11
- (D) 10

Solution

Concept - Position counting: Total equals left position plus right position minus one, since the person is counted twice.

Step 1 - Add and subtract: $7 + 5 - 1 = 11$.

Tip: Subtract one to avoid double counting the reference person.
Correct answer: 11 (option C).

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

Q39.

Q. If each letter is replaced by its position in the English alphabet, so that FACE becomes 6135, then how is HEAD written?

- (A) 8415
- (B) 8541
- (C) 8154
- (D) 8514

Solution



Concept - Alphabet position code: Replace each letter with its number in the alphabet.

Step 1 - Map the letters: H is the eighth letter, E is the fifth, A is the first, D is the fourth.

Step 2 - Assemble: In order this gives 8, 5, 1, 4, that is 8514.

Tip: Keep the letters in their original order while swapping in numbers. Correct answer: 8514 (option D).

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

Q40.

Q. In printing, which colour results when equal amounts of cyan and magenta ink are mixed?

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

Solution

Concept - Subtractive colour mixing: In the CMY ink model each pair of primaries mixes to an additive primary.

Step 1 - Mix the inks: Cyan absorbs red and magenta absorbs green, so together they reflect blue.

Step 2 - Check the others: Magenta plus yellow gives red and cyan plus yellow gives green, so blue is the correct product here.

Tip: Cyan plus magenta gives blue, the same result you see in



overlapping print swatches. Correct answer: Blue (option A).

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

Q41.

Q. On a standard dice, the numbers on opposite faces always add up to seven. If the top face shows two, which number is on the bottom face?

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

Solution

Concept - Opposite faces of a dice: Opposite faces sum to seven.

Step 1 - Subtract: $\text{Bottom} = 7 - 2 = 5$.

Tip: Remember the fixed pairs: one with six, two with five, three with four. Correct answer: 5 (option B).

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

Q42.

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

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



Solution

Concept - Growing letter gaps: Convert letters to positions and study the steps.

Step 1 - Positions: B(2), D(4), G(7), K(11), P(16), with gaps 2, 3, 4, 5.

Step 2 - Next step: The next gap is 6, so $16 + 6 = 22$, which is the letter V.

Tip: Turn letters into numbers whenever the alphabet gaps are not constant. Correct answer: V (option C).

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

Q43.

Q. All cups are plates. All plates are bowls. Which conclusion definitely follows?

- (A) Some bowls are cups only
- (B) No cup is a bowl
- (C) All bowls are cups
- (D) All cups are bowls

Solution

Concept - Chained syllogism: If one whole set sits inside a second, and the second inside a third, the first sits inside the third.

Step 1 - Combine: Cups are within plates, and plates are within bowls, so all cups are within bowls.



Step 2 - Reject the rest: "All bowls are cups" reverses the chain wrongly, and "No cup is a bowl" contradicts it.

Tip: A subset of a subset is still a subset of the largest set. Correct answer: All cups are bowls (option D).

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

Q44.

Q. What is the angle between the hour hand and the minute hand of a clock at exactly six o'clock?

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

Solution

Concept - Clock angle: Each hour mark is thirty degrees apart on the dial.

Step 1 - Count the gap: At six o'clock the minute hand is on twelve and the hour hand on six, a gap of six marks.

Step 2 - Compute: $6 \times 30 = 180$ degrees, a straight line.

Tip: Twelve and six are exactly opposite, forming a straight angle. Correct answer: 180 degrees (option A).

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

Q45.



Q. Warli painting is traditionally made using mainly which single colour of pigment on an earthy base?

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

Solution

Concept - Folk art palette: Recall the signature look of Warli art.

Step 1 - Identify the pigment: Warli figures are drawn in white rice paste on a dark reddish-brown mud wall.

Step 2 - Rule out others: The base is earthy red, but the drawn motifs themselves are white.

Tip: Think of the plain white stick figures that define Warli. Correct answer: White (option B).

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

Q46.

Q. A square logo is scaled up so that each side becomes three times as long. By what factor does its area increase?

- (A) 3
 - (B) 6
 - (C) 9
 - (D) 12
-



Solution

Concept - Area scaling: When every length is multiplied by k , the area is multiplied by k^2 .

Step 1 - Apply: Here $k = 3$, so the area factor is $3^2 = 9$.

Tip: Area scales with the square of the length factor, and volume with the cube. Correct answer: 9 (option C).

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

Q47.

Q. In a certain code, MOUSE is written as ESUOM. How is DESIGN written in the same code?

- (A) NGSIED
- (B) NGIESD
- (C) NGISDE
- (D) NGISED

Solution

Concept - Reversal code: The code simply writes the word backwards.

Step 1 - Verify: MOUSE reversed is ESUOM, matching the sample.

Step 2 - Reverse DESIGN: Reading N, G, I, S, E, D gives NGISED.

Tip: Write the word from right to left, one letter at a time, to avoid slips. Correct answer: NGISED (option D).

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



Q48.

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

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

Solution

Concept - Dimension check: Separate flat shapes from solid ones.

Step 1 - Classify: Circle, square and triangle are two-dimensional shapes.

Step 2 - Spot the outsider: A cube is a three-dimensional solid, so it does not belong.

Tip: Ask whether each item is flat or solid before grouping. Correct answer: Cube (option A).

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

Q49.

Q. A mother is four times as old as her daughter. In twenty years, the mother will be twice as old as her daughter. What is the daughter's present age, in years?

- (A) 8
- (B) 10
- (C) 12
- (D) 15



Solution

Concept - Age equations: Let the daughter be D and the mother $4D$, then apply the future condition.

Step 1 - Future ages: In twenty years, mother = $4D + 20$ and daughter = $D + 20$.

Step 2 - Solve: $4D + 20 = 2(D + 20) \Rightarrow 4D + 20 = 2D + 40 \Rightarrow 2D = 20 \Rightarrow D = 10$.

Tip: Translate each phrase to an equation and solve, then check the numbers fit. Correct answer: 10 (option B).

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

Q50.

Q. In typography, what is the name of the imaginary line on which most letters of a line of text sit?

- (A) x-height
- (B) Cap line
- (C) Baseline
- (D) Ascender

Solution

Concept - Type anatomy: Recall the reference lines of a typeface.

Step 1 - Define the line: The baseline is the line on which letters rest.

Step 2 - Rule out others: The x-height marks lowercase tops,



the cap line marks capital tops, and an ascender rises above the x-height.

Tip: Letters sit on the baseline the way objects rest on the ground.

Correct answer: Baseline (option C).

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

Q51.

Q. A digital image is one thousand and twenty-four pixels wide. If it is reduced to one quarter of its width, how many pixels wide will it be?

- (A) 512
- (B) 128
- (C) 384
- (D) 256

Solution

Concept - Fraction of a size: One quarter means dividing by four.

Step 1 - Divide: $1024 \div 4 = 256$ pixels.

Tip: Halving twice is a quick way to take a quarter: $1024 \rightarrow 512 \rightarrow 256$. Correct answer: 256 (option D).

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

Q52.

Q. A is B's brother. C is B's mother. D is C's father. How is A related to D?



- (A) Grandson
- (B) Son
- (C) Grandfather
- (D) Nephew

Solution

Concept - Family chain: Move one link at a time from A up to D.

Step 1 - Link the family: A and B are children of C, and D is C's father, so D is the grandfather of A and B.

Step 2 - Name the relation: A, being male and a grandchild of D, is D's grandson.

Tip: Build the chain step by step rather than guessing the final label. Correct answer: Grandson (option A).

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

Q53.

Q. Find the next number in the series: 2, 3, 5, 8, 13, ?

- (A) 18
- (B) 21
- (C) 20
- (D) 22

Solution

Concept - Sum of previous two: Each term is the sum of the two before it.



Step 1 - Check: $2 + 3 = 5$, $3 + 5 = 8$, $5 + 8 = 13$.

Step 2 - Next term: $8 + 13 = 21$.

Tip: This is a Fibonacci-style pattern, so always add the last two terms. Correct answer: 21 (option B).

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

Q54.

Q. The Sanchi Stupa, famous for its ancient Buddhist gateways, is located in which Indian state?

- (A) Uttar Pradesh
- (B) Bihar
- (C) Maharashtra
- (D) Madhya Pradesh

Solution

Concept - Heritage location: Recall the site of the Great Stupa.

Step 1 - Locate it: Sanchi lies near Vidisha in Madhya Pradesh.

Step 2 - Rule out others: Bihar holds Bodh Gaya and Nalanda, but Sanchi is in Madhya Pradesh.

Tip: Sanchi and its carved toranas belong to Madhya Pradesh.
Correct answer: Madhya Pradesh (option D).

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

Q55.



Q. The sun rises in the east. A person stands facing the rising sun and stretches both arms straight out to the sides. Towards which direction does the left arm point?

- (A) North
- (B) South
- (C) West
- (D) East

Solution

Concept - Facing and sides: When you face east, north lies to your left and south to your right.

Step 1 - Orient: Facing east means the back is west.

Step 2 - Read the left: The left hand of an east-facing person points north.

Tip: Face east and the compass reads north on the left, south on the right. Correct answer: North (option A).

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

Q56.

Q. On a traditional colour wheel, which of the following pairs are complementary colours?

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



Solution

Concept - Complementary pairs: Complementary colours sit opposite each other on the wheel.

Step 1 - Recall the pairs: On the traditional wheel red pairs with green, blue with orange, and yellow with purple.

Step 2 - Match the options: Only red and green form an opposite pair here.

Tip: Yellow and orange are neighbours, not opposites, so they cannot be complementary. Correct answer: Red and Green (option B).

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

Q57.

Q. A circular badge has a radius of seven centimetres. What is its area? (Take $\pi = \frac{22}{7}$.)

- (A) 44
- (B) 49
- (C) 22
- (D) 154

Solution

Concept - Area of a circle: The area is πr^2 .

Step 1 - Substitute: $\frac{22}{7} \times 7 \times 7 = 22 \times 7 = 154$ square centimetres.

Tip: A radius of seven cancels neatly with the seven in $\frac{22}{7}$. Correct



answer: 154 (option D).

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

Q58.

Q (Drawing). Imagine a school classroom during a lesson. Rows of wooden desks and benches face the front, students sit with open books and raised hands, bags hang from hooks, charts and a map cover the walls, and light streams through tall windows. Draw this classroom scene, giving prominence to a teacher standing at the blackboard mid-explanation, chalk in hand and pointing to a diagram being drawn.

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

Set the room's perspective and the rows of desks first, then push the teacher forward as the focus.

Step 1 - Block the layout: Draw the desk rows and side walls receding to one vanishing point near the blackboard so the room feels deep. Place the teacher at the board as your focal point, slightly off-centre.

Step 2 - Build the depth: Foreground - the nearest students seen from behind at their desks; middle ground - more rows and raised hands; background - the blackboard, charts, map and windows. Overlap desks and heads to build the rows.



Step 3 - Give the teacher prominence: Draw the teacher's stance, the pointing arm and the chalk with the firmest, darkest lines and the most detail. Keep front-row students sharp and let the back rows fade to lighter strokes.

Step 4 - Add texture and finish: Suggest chalk marks on the board, the grain of wooden desks, folds in clothing and shadows under the benches. Keep desk and figure sizes shrinking believably toward the back.

Tip: One clear vanishing point at the board plus foreground-midground-background layering creates depth, and your boldest lines on the teacher make the front of the class the obvious subject. [Go Back to Q58](#)

Q59.

Q (Design Aptitude). Students who share a single study table with siblings often find their pens, notes and small items mixed up and lost. Design a desk organiser that keeps each user's stationery and papers separate and tidy on a shared table. Show your organiser in two states: closed and packed away when the table is needed for other use, and open with stationery sorted and in use during study.

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 answer: the organiser as an object, then proof it packs away and sorts well.



Step 1 - Nail the requirements: Hold the goals in mind - separate zones for each user, tidy storage of pens and papers, and a compact form that clears off the table quickly. Draw only features that serve these.

Step 2 - Show the two required states: On one side draw it closed and folded into a compact block; on the other draw it open with pens, notebooks and small items sorted and in use. Keep both at the same scale.

Step 3 - Label features, do not write essays: Short call-outs with leader lines - split compartments per user, a fold-out paper tray, pen slots, a carry handle. One or two words each.

Step 4 - Prove it works: Add an inset of the open-and-fold action in two or three steps, and a top view showing how two users' sections stay clearly separated.

Tip: Suitability, ease of use, a unique idea and neat detailing win the marks, so let the closed and in-use views plus tight labels carry the whole explanation without paragraphs. [Go Back to Q59](#)



Answer Key (Part A)

Section 1 - NAT (Numerical Answer Type)

Q1	Q2	Q3	Q4	Q5	Q6	Q7
43	36	216	700	1500	42	90

Q8	Q9	Q10	Q11	Q12	Q13	Q14
3	256	10200	28	64	12	144

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

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

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

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

Section 3 - MCQ (single correct)

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

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

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



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

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

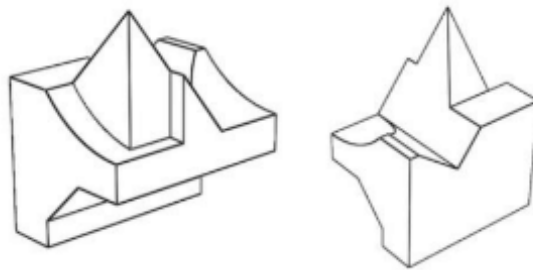


Appendix: Visual Reasoning

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) Two views of the same solid object are shown. Count the number of surfaces (planar or curved) the solid has.

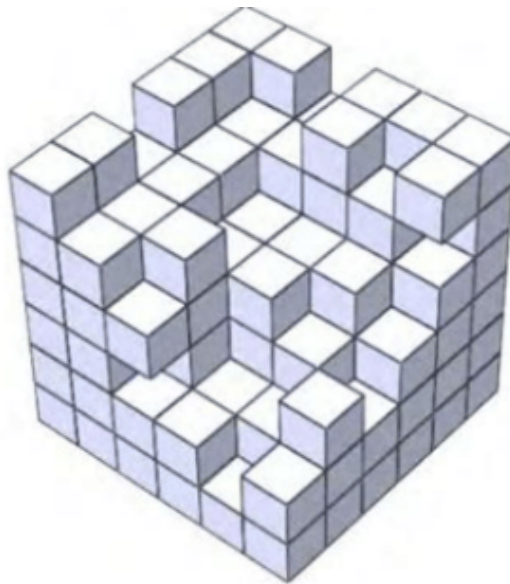


How to approach

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.

P2. (Past UCEED) Count the number of cubes in the figure. No cube has been removed from parts that are not visible.

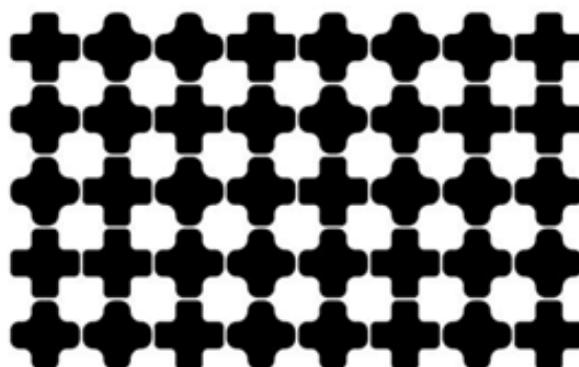




How to approach

Use any symmetry stated in the question. Count the cubes in one layer (or one octant), multiply by the number of identical layers, and adjust for cubes shared on a common plane or axis. Build the solid up layer by layer from the bottom so hidden cubes are not missed.

P3. (Past UCEED) How many times does the most used black coloured shape appear in the composition shown below?



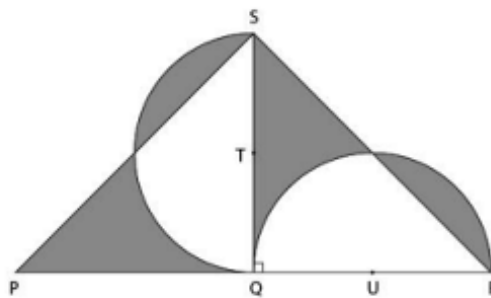
How to approach

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)** In the image shown below, $PQ = QR = QS = 2$ units. Also, $QT = TS = QU = UR$. The points T and U are the centre points of the semicircles. What is the total area of shaded portions in square units?



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.

