

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 with an edge of six centimetres is painted on all its outer faces and then cut into one-centimetre cubes. How many of the small cubes have exactly two painted faces?

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

[View Solution](#)



- Q2.** A wooden cube with an edge of six centimetres is painted on all faces and cut into one-centimetre cubes. How many small cubes have exactly one painted face?

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

[View Solution](#)

- Q3.** A cube with an edge of five centimetres is painted on all faces and cut into one-centimetre cubes. How many small cubes have no painted face at all?

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

[View Solution](#)

- Q4.** A designer sizes a rectangle using the golden ratio, taking the long side as about 1.618 times the short side. If the short side is thirty-four centimetres, what is the long side in centimetres, rounded to the nearest whole number?

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

[View Solution](#)

- Q5.** In typography one inch equals seventy-two points. A headline is set at one and a half inches. What is this size in points?

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

[View Solution](#)

- Q6.** One pica equals twelve points. A magazine column is fifteen picas wide. What is the column width in points?

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

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Q7. In the ISO A-series, sheet A0 has an area of one square metre and each next size has half the area of the one before it. What is the area of an A4 sheet in square centimetres?

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

[View Solution](#)

Q8. A poster measuring twenty centimetres by thirty centimetres is enlarged by a scale factor of two point five on each side. What is the area of the enlarged poster in square centimetres?

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

[View Solution](#)

Q9. In 24-bit RGB colour, each of the red, green and blue channels can take two hundred fifty-six values. How many distinct colours can be represented?

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

[View Solution](#)

Q10. A logo is built on a grid of eight by eight squares, where each small square has a side of one point five centimetres. What is the total area of the grid in square centimetres?

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

[View Solution](#)

Q11. A wall paint is mixed with red and white in the ratio three to five. To make forty litres of this mix, how many litres of red paint are needed?

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

[View Solution](#)



Q12. A digital image is one thousand nine hundred twenty pixels wide and one thousand eighty pixels tall. What is its resolution in megapixels, rounded to one decimal place?

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

[View Solution](#)

Q13. A design turntable rotates fifteen degrees with every click. How many clicks are needed to complete three full rotations?

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

[View Solution](#)

Q14. A cylindrical tin has a radius of seven centimetres and a height of ten centimetres. Taking pi as twenty-two over seven, what is its curved surface area 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 are subtractive primary colours, the base inks used in colour printing? Select all that apply.

(One or more options may be correct.)

- (A) Green
- (B) Cyan
- (C) Magenta
- (D) Yellow

[View Solution](#)



Q16. Which of the following are vector graphic file formats? Select all that apply.

(One or more options may be correct.)

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

[View Solution](#)

Q17. Which of the following are raster (bitmap) image formats? Select all that apply.

(One or more options may be correct.)

- (A) BMP
- (B) GIF
- (C) AI
- (D) TIFF

[View Solution](#)

Q18. Which of the following are considered warm colours? Select all that apply.

(One or more options may be correct.)

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



[View Solution](#)

Q19. Which of the following figures were directly connected with the Bauhaus school in Germany? Select all that apply.

(One or more options may be correct.)

- (A) Walter Gropius
- (B) Wassily Kandinsky
- (C) Le Corbusier
- (D) Paul Klee

[View Solution](#)

Q20. Which of the following are serif typefaces? Select all that apply.

(One or more options may be correct.)

- (A) Times New Roman
- (B) Helvetica
- (C) Garamond
- (D) Georgia

[View Solution](#)

Q21. Which of the following are sans-serif typefaces? Select all that apply.

(One or more options may be correct.)

- (A) Baskerville
- (B) Futura
- (C) Helvetica
- (D) Gill Sans



[View Solution](#)

Q22. Which of the following are traditional Indian textile or dyeing crafts (rather than painting traditions)? Select all that apply.

(One or more options may be correct.)

- (A) Warli
- (B) Bandhani
- (C) Madhubani
- (D) Ikat

[View Solution](#)

Q23. Which of the following are Indian folk or tribal painting traditions? Select all that apply.

(One or more options may be correct.)

- (A) Kathakali
- (B) Kalighat
- (C) Pattachitra
- (D) Gond

[View Solution](#)

Q24. Which of the following colour pairs are complementary (opposite each other on the colour wheel)? Select all that apply.

(One or more options may be correct.)

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



(D) Yellow and Purple

[View Solution](#)

Q25. Which of the following materials are thermoplastics (they soften on heating and can be remoulded)? Select all that apply.

(One or more options may be correct.)

(A) Bakelite

(B) Polyethylene

(C) PVC

(D) Epoxy

[View Solution](#)

Q26. Which of the following are principles of design (not elements)? Select all that apply.

(One or more options may be correct.)

(A) Line

(B) Balance

(C) Contrast

(D) Rhythm

[View Solution](#)

Q27. Which of the following are elements of design (not principles)? Select all that apply.

(One or more options may be correct.)

(A) Emphasis

(B) Texture



(C) Colour

(D) Shape

[View Solution](#)

Q28. Which of the following is a unit used to measure the size of type in typography? Select all that apply.

(One or more options may be correct.)

(A) Lumen

(B) Point

(C) Pascal

(D) Hertz

[View Solution](#)

Q29. Which of the following are well-known product or industrial designers? Select all that apply.

(One or more options may be correct.)

(A) Dieter Rams

(B) Jonathan Ive

(C) Philippe Starck

(D) Raymond Loewy

[View Solution](#)

Section 3: Multiple Choice Questions (MCQ)

Q30. In a certain code, FLOWER is written as GMPXFS. Using the same rule, how would GARDEN be written?



- (A) HBSEFO
- (B) HBSDEO
- (C) FBQCDM
- (D) HZQCDM

[View Solution](#)

Q31. Find the next number in the series: 2, 6, 12, 20, 30, ?

- (A) 40
- (B) 42
- (C) 44
- (D) 36

[View Solution](#)

Q32. A person walks 5 km north, turns right and walks 5 km, then turns right again and walks 5 km. How far is the person from the starting point?

- (A) 10 km
- (B) 0 km
- (C) 5 km
- (D) 15 km

[View Solution](#)

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

- (A) Sister
- (B) Aunt



- (C) Grandmother
- (D) Mother

[View Solution](#)

Q34. Which one does not belong with the others: Triangle, Square, Rectangle, Rhombus?

- (A) Triangle
- (B) Square
- (C) Rectangle
- (D) Rhombus

[View Solution](#)

Q35. In typography, the height of the main body of a lowercase letter such as 'x', not counting ascenders or descenders, is called the?

- (A) Baseline
- (B) x-height
- (C) Kerning
- (D) Leading

[View Solution](#)

Q36. In the additive (light) colour model, mixing red light and blue light produces which colour?

- (A) Yellow
- (B) Cyan
- (C) Magenta
- (D) White



[View Solution](#)

Q37. The minimalist motto 'Less is more' in modern architecture and design is most associated with which architect?

- (A) Le Corbusier
- (B) Frank Gehry
- (C) Zaha Hadid
- (D) Ludwig Mies van der Rohe

[View Solution](#)

Q38. How many edges does a cube have?

- (A) 12
- (B) 8
- (C) 6
- (D) 24

[View Solution](#)

Q39. On a standard dice, opposite faces add up to seven. If the top face shows two, what number is on the bottom face?

- (A) 6
- (B) 5
- (C) 4
- (D) 7

[View Solution](#)

Q40. Book is to Reading as Fork is to?



- (A) Drawing
- (B) Kitchen
- (C) Eating
- (D) Cooking

[View Solution](#)

Q41. A person is facing south. If the person turns 90 degrees clockwise, which direction are they now facing?

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

[View Solution](#)

Q42. Which Indian city is most famous for its traditional blue pottery?

- (A) Jaipur
- (B) Kolkata
- (C) Chennai
- (D) Lucknow

[View Solution](#)

Q43. The Ajanta caves in Maharashtra are best known for which of the following?

- (A) Mughal miniatures
- (B) Buddhist mural paintings
- (C) Jain bronze idols



(D) Colonial frescoes

[View Solution](#)

Q44. Which of these is a warm colour?

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

[View Solution](#)

Q45. The golden ratio, often used in design and layout, is approximately equal to?

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

[View Solution](#)

Q46. If an A4 sheet is folded in half across its longer side, which paper size results?

- (A) A5
- (B) A3
- (C) A6
- (D) A2

[View Solution](#)



Q47. The CMYK colour model is primarily used for?

- (A) Screen displays
- (B) Colour printing
- (C) Website backgrounds
- (D) Stage lighting

[View Solution](#)

Q48. The principle of ‘persistence of vision’ is the basis for which of the following?

- (A) Still photography
- (B) Stone sculpture
- (C) Animation and film
- (D) Screen printing

[View Solution](#)

Q49. Which one is the odd one out: Oak, Teak, Pine, Granite?

- (A) Oak
- (B) Teak
- (C) Pine
- (D) Granite

[View Solution](#)

Q50. If each letter is replaced by its position in the alphabet (A=1, B=2, and so on), what code represents the word CAB?

- (A) 312



- (B) 321
- (C) 123
- (D) 213

[View Solution](#)

Q51. Find the next letter in the series: A, C, E, G, ?

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

[View Solution](#)

Q52. What is the angle between the hour hand and the minute hand of a clock at exactly 3 o'clock?

- (A) 30 degrees
- (B) 60 degrees
- (C) 90 degrees
- (D) 120 degrees

[View Solution](#)

Q53. The artist Salvador Dali is most closely associated with which art movement?

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



[View Solution](#)

Q54. In layout and graphic design, the main purpose of a grid is to?

- (A) Provide alignment and structure
- (B) Add more colour
- (C) Increase the file size
- (D) Replace all typography

[View Solution](#)

Q55. Which of the following is NOT a recognised type of visual balance in design?

- (A) Symmetrical
- (B) Gradient
- (C) Radial
- (D) Asymmetrical

[View Solution](#)

Q56. A logo is enlarged so that its width increases from 4 cm to 10 cm. What is the scale factor of the enlargement?

- (A) 2
- (B) 3
- (C) 2.5
- (D) 1.5

[View Solution](#)

Q57. Which typeface classification has small strokes or 'feet' at the ends of its letters?



- (A) Sans-serif
- (B) Script
- (C) Display
- (D) Serif

[View Solution](#)

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

Q58. [Drawing - 50 Marks]

It is a busy weekday morning on a city pavement outside a row of shops. A cobbler has set up his small open-air repair spot on a folded gunny sack, with worn shoes, tins of polish, brushes, nails and hand tools spread around him. The focal subject is the cobbler, seated low on a wooden block, bent forward with a shoe held between his knees as he pulls a waxed thread tight to stitch a torn sole, a customer's bare foot waiting beside him. Imagine this scene and draw it with the cobbler stitching the shoe as the clear centre of interest. Show the spread of tools and polish tins, the waiting barefoot customer, the shop shutters behind, and passers-by on the pavement.

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 revise from thick textbooks and from tablets, but reading for long hours on a flat desk bends the neck and tires the arms, and there



is rarely a good way to prop a heavy book open at the right angle while also keeping a notebook flat for writing. Design a study stand for a desk that holds a heavy open book or a tablet at a comfortable reading angle and can be adjusted, yet folds flat to slip into a bag or a drawer when not needed. Show your design in two states: (1) folded flat for storage or carrying, and (2) set up and holding an open book at a reading angle.

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 with an edge of six centimetres is painted on all its outer faces and then cut into one-centimetre cubes. How many of the small cubes have exactly two painted faces?

Solution

Concept - Painted cube, edge rule: Small cubes with exactly two painted faces lie along the edges of the big cube but not at the corners. A cube has 12 edges.

Step 1 - Count per edge: With edge $n = 6$, each edge contributes $n - 2 = 4$ such cubes.

Step 2 - Multiply by edges: $12 \times 4 = 48$.

Tip: Two faces means edges, one face means faces, three faces means the 8 corners.

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

Q2.

Q. A wooden cube with an edge of six centimetres is painted on all faces and cut into one-centimetre cubes. How many small cubes have exactly one painted face?

Solution

Concept - Painted cube, face-centre rule: Cubes with exactly one painted face sit on the faces but away from every edge. A cube has



6 faces.

Step 1 - Count per face: Each face gives $(n - 2)^2 = (6 - 2)^2 = 16$ such cubes.

Step 2 - Multiply by faces: $6 \times 16 = 96$.

Tip: These are the inner square of each face.

Answer: 96 [Go Back to Q2](#)

Q3.

Q. A cube with an edge of five centimetres is painted on all faces and cut into one-centimetre cubes. How many small cubes have no painted face at all?

Solution

Concept - Hidden inner cube: Unpainted small cubes form the inner block of side $n - 2$.

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

Step 2 - Cube it: $3^3 = 27$.

Tip: The zero-face count is always $(n - 2)^3$.

Answer: 27 [Go Back to Q3](#)

Q4.

Q. A designer sizes a rectangle using the golden ratio, taking the long side as about 1.618 times the short side. If the short side is thirty-four centimetres, what is the long



side in centimetres, rounded to the nearest whole number?

Solution

Concept - Golden ratio scaling: Multiply the short side by $\varphi \approx 1.618$.

Step 1 - Multiply: $34 \times 1.618 = 55.01$.

Step 2 - Round: 55.01 rounds to 55.

Tip: The golden ratio also equals $\frac{1+\sqrt{5}}{2}$.

Answer: 55 [Go Back to Q4](#)

Q5.

Q. In typography one inch equals seventy-two points. A headline is set at one and a half inches. What is this size in points?

Solution

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

Step 1 - Set up: 1.5×72 .

Step 2 - Compute: = 108.

Tip: 12 points make 1 pica and 6 picas make 1 inch.

Answer: 108 [Go Back to Q5](#)

Q6.

Q. One pica equals twelve points. A magazine column is fifteen picas wide. What is the column width in points?



Solution

Concept - Pica-to-point conversion: One pica equals 12 points.

Step 1 - Set up: 15×12 .

Step 2 - Compute: $= 180$.

Tip: Picas usually measure column width while points measure type size.

Answer: 180 [Go Back to Q6](#)

Q7.

Q. In the ISO A-series, sheet A0 has an area of one square metre and each next size has half the area of the one before it. What is the area of an A4 sheet in square centimetres?

Solution

Concept - Halving series: A4 is four halvings below A0, so its area is $\frac{1}{2^4}$ square metre.

Step 1 - Fraction of A0: $\frac{1}{16}$ square metre $= \frac{10000}{16}$ square centimetres.

Step 2 - Divide: $= 625$ square centimetres.

Tip: Remember that 1 square metre equals 10000 square centimetres.

Answer: 625 [Go Back to Q7](#)

Q8.



Q. A poster measuring twenty centimetres by thirty centimetres is enlarged by a scale factor of two point five on each side. What is the area of the enlarged poster in square centimetres?

Solution

Concept - Scaling area: Each side is multiplied by the linear factor 2.5.

Step 1 - New sides: $20 \times 2.5 = 50$ and $30 \times 2.5 = 75$.

Step 2 - New area: $50 \times 75 = 3750$.

Tip: Area scales by the square of the linear factor: $2.5^2 = 6.25$, and $600 \times 6.25 = 3750$.

Answer: 3750 [Go Back to Q8](#)

Q9.

Q. In 24-bit RGB colour, each of the red, green and blue channels can take two hundred fifty-six values. How many distinct colours can be represented?

Solution

Concept - Counting combinations: The total is $256 \times 256 \times 256$.

Step 1 - Square first: $256^2 = 65536$.

Step 2 - Multiply again: $65536 \times 256 = 16777216$.

Tip: This is why 24-bit colour is called true colour.

Answer: 16777216 [Go Back to Q9](#)



Q10.

Q. A logo is built on a grid of eight by eight squares, where each small square has a side of one point five centimetres. What is the total area of the grid in square centimetres?

Solution

Concept - Area of a grid: There are $8 \times 8 = 64$ squares, each of area 1.5^2 .

Step 1 - One square: $1.5^2 = 2.25$ square centimetres.

Step 2 - All squares: $64 \times 2.25 = 144$.

Tip: Or take the full side $8 \times 1.5 = 12$ cm, so area $12^2 = 144$.

Answer: 144 [Go Back to Q10](#)

Q11.

Q. A wall paint is mixed with red and white in the ratio three to five. To make forty litres of this mix, how many litres of red paint are needed?

Solution

Concept - Ratio share: Red is $\frac{3}{3+5}$ of the whole mix.

Step 1 - Fraction: $\frac{3}{8} \times 40$.

Step 2 - Compute: = 15 litres.

Tip: White would be $\frac{5}{8} \times 40 = 25$ litres, and $15 + 25 = 40$.

Answer: 15 [Go Back to Q11](#)



Q12.

Q. A digital image is one thousand nine hundred twenty pixels wide and one thousand eighty pixels tall. What is its resolution in megapixels, rounded to one decimal place?

Solution

Concept - Megapixel meaning: One megapixel is one million pixels, so multiply width by height and divide by a million.

Step 1 - Total pixels: $1920 \times 1080 = 2073600$.

Step 2 - Convert: $2073600 \div 1000000 = 2.07 \approx 2.1$.

Tip: The prefix mega means 10^6 .

Answer: 2.1 [Go Back to Q12](#)

Q13.

Q. A design turntable rotates fifteen degrees with every click. How many clicks are needed to complete three full rotations?

Solution

Concept - Degrees in rotations: Three full turns are $3 \times 360 = 1080$ degrees.

Step 1 - Total angle: 1080 degrees.

Step 2 - Divide by step: $1080 \div 15 = 72$.

Tip: One full turn alone needs $360 \div 15 = 24$ clicks.

Answer: 72 [Go Back to Q13](#)



Q14.

Q. A cylindrical tin has a radius of seven centimetres and a height of ten centimetres. Taking pi as twenty-two over seven, what is its curved surface area in square centimetres?

Solution

Concept - Curved surface area: For a cylinder it equals $2\pi rh$.

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

Step 2 - Simplify: The 7 cancels, giving $2 \times 22 \times 10 = 440$.

Tip: Curved surface area ignores the two flat circular ends.

Answer: 440 [Go Back to Q14](#)

Q15.

Q. Which of the following are subtractive primary colours, the base inks used in colour printing? Select all that apply.

- (A) Green
- (B) Cyan
- (C) Magenta
- (D) Yellow

Solution

Concept - Subtractive (CMY) primaries: Printing mixes inks that subtract light, and the primaries are cyan, magenta and yellow.

Step 1 - Option A (Green): A secondary colour in the subtractive model, not a primary. Wrong.



Step 2 - Option B (Cyan): A subtractive primary. Correct.

Step 3 - Option C (Magenta): A subtractive primary. Correct.

Step 4 - Option D (Yellow): A subtractive primary. Correct.

Tip: Additive (light) primaries are red, green, blue; subtractive (ink) primaries are cyan, magenta, yellow. Correct: B, C, D.

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

Q16.

Q. Which of the following are vector graphic file formats? Select all that apply.

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

Solution

Concept - Vector versus raster: Vector files store shapes as mathematical paths and scale without blur.

Step 1 - Option A (JPEG): A raster, pixel-based format. Wrong.

Step 2 - Option B (SVG): A vector format. Correct.

Step 3 - Option C (PNG): A raster format. Wrong.

Step 4 - Option D (EPS): A vector format. Correct.

Tip: JPEG, PNG, GIF, BMP, TIFF are raster; SVG, EPS, AI are vector. Correct: B, D.



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

Q17.

Q. Which of the following are raster (bitmap) image formats?
Select all that apply.

- (A) BMP
- (B) GIF
- (C) AI
- (D) TIFF

Solution

Concept - Raster formats: These store an image as a grid of pixels.

Step 1 - Option A (BMP): A raster format. Correct.

Step 2 - Option B (GIF): A raster format. Correct.

Step 3 - Option C (AI): Adobe Illustrator's vector format. Wrong.

Step 4 - Option D (TIFF): A raster format. Correct.

Tip: AI stores paths, so it is vector; the rest here are pixel-based.
Correct: A, B, D.

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

Q18.

Q. Which of the following are considered warm colours? Select all that apply.



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

Solution

Concept - Colour temperature: Warm colours sit on the red-orange-yellow side of the colour wheel.

Step 1 - Option A (Blue): A cool colour. Wrong.

Step 2 - Option B (Red): A warm colour. Correct.

Step 3 - Option C (Orange): A warm colour. Correct.

Step 4 - Option D (Green): A cool colour. Wrong.

Tip: Warm equals red, orange, yellow; cool equals blue, green, violet. Correct: B, C.

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

Q19.

Q. Which of the following figures were directly connected with the Bauhaus school in Germany? Select all that apply.

- (A) Walter Gropius
- (B) Wassily Kandinsky
- (C) Le Corbusier
- (D) Paul Klee



Solution

Concept - The Bauhaus (founded 1919): Started by Walter Gropius, with Kandinsky and Klee among its masters who taught there.

Step 1 - Option A (Walter Gropius): Founder of the Bauhaus. Correct.

Step 2 - Option B (Wassily Kandinsky): A Bauhaus master. Correct.

Step 3 - Option C (Le Corbusier): A modernist architect, but not part of the Bauhaus. Wrong.

Step 4 - Option D (Paul Klee): A Bauhaus master. Correct.

Tip: Le Corbusier is tied to the International Style, not the Bauhaus faculty. Correct: A, B, D.

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

Q20.

Q. Which of the following are serif typefaces? Select all that apply.

- (A) Times New Roman
- (B) Helvetica
- (C) Garamond
- (D) Georgia

Solution

Concept - Serif type: Serif faces have small finishing strokes (feet) at the ends of letters.



Step 1 - Option A (Times New Roman): A serif face. Correct.

Step 2 - Option B (Helvetica): A sans-serif face. Wrong.

Step 3 - Option C (Garamond): A serif face. Correct.

Step 4 - Option D (Georgia): A serif face designed for screens. Correct.

Tip: Helvetica, Arial and Futura are sans-serif. Correct: A, C, D.

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

Q21.

Q. Which of the following are sans-serif typefaces? Select all that apply.

- (A) Baskerville
- (B) Futura
- (C) Helvetica
- (D) Gill Sans

Solution

Concept - Sans-serif type: These faces have no feet at the ends of strokes.

Step 1 - Option A (Baskerville): A serif face. Wrong.

Step 2 - Option B (Futura): A geometric sans-serif. Correct.

Step 3 - Option C (Helvetica): A sans-serif. Correct.

Step 4 - Option D (Gill Sans): A humanist sans-serif. Correct.



Tip: The word sans means without in French. Correct: B, C, D.

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

Q22.

Q. Which of the following are traditional Indian textile or dyeing crafts (rather than painting traditions)? Select all that apply.

- (A) Warli
- (B) Bandhani
- (C) Madhubani
- (D) Ikat

Solution

Concept - Textiles versus paintings: Bandhani and Ikat colour cloth, while Warli and Madhubani are painting styles.

Step 1 - Option A (Warli): A tribal painting style of Maharashtra, not textile. Wrong.

Step 2 - Option B (Bandhani): A tie-and-dye textile of Gujarat and Rajasthan. Correct.

Step 3 - Option C (Madhubani): A folk painting of Bihar, not textile. Wrong.

Step 4 - Option D (Ikat): Resist-dye weaving of Odisha, Telangana and Gujarat. Correct.

Tip: Warli and Madhubani decorate surfaces; Bandhani and Ikat colour yarn or fabric. Correct: B, D.

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



Q23.

Q. Which of the following are Indian folk or tribal painting traditions? Select all that apply.

- (A) Kathakali
- (B) Kalighat
- (C) Pattachitra
- (D) Gond

Solution

Concept - Indian painting styles: Kalighat, Pattachitra and Gond are all painting traditions.

Step 1 - Option A (Kathakali): A classical dance-drama of Kerala, not a painting. Wrong.

Step 2 - Option B (Kalighat): A Bengal folk painting from Kolkata. Correct.

Step 3 - Option C (Pattachitra): A cloth-based scroll painting of Odisha and Bengal. Correct.

Step 4 - Option D (Gond): A tribal painting of central India. Correct.

Tip: Kathakali is performance art, easy to misplace among painting names. Correct: B, C, D.

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

Q24.



Q. Which of the following colour pairs are complementary (opposite each other on the colour wheel)? Select all that apply.

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

Solution

Concept - Complementary colours: A colour and its complement sit directly opposite on the wheel and each primary pairs with a secondary.

Step 1 - Option A (Red and Blue): Not opposite; blue's complement is orange, so this pair is wrong.

Step 2 - Option B (Red and Green): Complementary. Correct.

Step 3 - Option C (Blue and Orange): Complementary. Correct.

Step 4 - Option D (Yellow and Purple): Complementary. Correct.

Tip: Each primary pairs with the secondary made from the other two primaries. Correct: B, C, D.

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

Q25.

Q. Which of the following materials are thermoplastics (they soften on heating and can be remoulded)? Select all that apply.

- (A) Bakelite



- (B) Polyethylene
 - (C) PVC
 - (D) Epoxy
-

Solution

Concept - Thermoplastic versus thermoset: Thermoplastics soften on heating and can be reshaped; thermosets set permanently once cured.

Step 1 - Option A (Bakelite): A thermoset (phenol-formaldehyde). Wrong.

Step 2 - Option B (Polyethylene): A thermoplastic. Correct.

Step 3 - Option C (PVC): A thermoplastic. Correct.

Step 4 - Option D (Epoxy): A thermoset. Wrong.

Tip: Bakelite and epoxy cannot be remelted once set. Correct: B, C.

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

Q26.

Q. Which of the following are principles of design (not elements)?
Select all that apply.

- (A) Line
 - (B) Balance
 - (C) Contrast
 - (D) Rhythm
-



Solution

Concept - Elements versus principles: Elements are the raw ingredients (line, shape, colour), while principles are how you arrange them (balance, contrast, rhythm).

Step 1 - Option A (Line): An element, not a principle. Wrong.

Step 2 - Option B (Balance): A principle. Correct.

Step 3 - Option C (Contrast): A principle. Correct.

Step 4 - Option D (Rhythm): A principle. Correct.

Tip: If it is an ingredient it is an element; if it is an arrangement rule it is a principle. Correct: B, C, D.

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

Q27.

Q. Which of the following are elements of design (not principles)?
Select all that apply.

- (A) Emphasis
- (B) Texture
- (C) Colour
- (D) Shape

Solution

Concept - Elements of design: The building blocks include line, shape, form, colour, texture, space and value.

Step 1 - Option A (Emphasis): A principle (creating a focal point),



not an element. Wrong.

Step 2 - Option B (Texture): An element. Correct.

Step 3 - Option C (Colour): An element. Correct.

Step 4 - Option D (Shape): An element. Correct.

Tip: Emphasis, balance, contrast and rhythm are principles.

Correct: B, C, D.

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

Q28.

Q. Which of the following is a unit used to measure the size of type in typography? Select all that apply.

- (A) Lumen
- (B) Point
- (C) Pascal
- (D) Hertz

Solution

Concept - Units by field: A point is the standard unit of type size.

Step 1 - Option A (Lumen): A unit of luminous flux (light output). Wrong.

Step 2 - Option B (Point): A typographic unit equal to one seventy-second of an inch. Correct.

Step 3 - Option C (Pascal): A unit of pressure. Wrong.

Step 4 - Option D (Hertz): A unit of frequency. Wrong.



Tip: 12 points make 1 pica and 72 points make 1 inch. Correct: B.

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

Q29.

Q. Which of the following are well-known product or industrial designers? Select all that apply.

- (A) Dieter Rams
- (B) Jonathan Ive
- (C) Philippe Starck
- (D) Raymond Loewy

Solution

Concept - Famous industrial designers: Each name below is a celebrated product designer.

Step 1 - Option A (Dieter Rams): Braun designer, known for ten principles of good design. Correct.

Step 2 - Option B (Jonathan Ive): Led design at Apple. Correct.

Step 3 - Option C (Philippe Starck): French product and interior designer. Correct.

Step 4 - Option D (Raymond Loewy): Often called the father of industrial design. Correct.

Tip: All four are major industrial designers, so every option is correct. Correct: A, B, C, D.

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



Q30.

Q. In a certain code, FLOWER is written as GMPXFS. Using the same rule, how would GARDEN be written?

- (A) HBSEFO
- (B) HBSDEO
- (C) FBQCDM
- (D) HZQCDM

Solution

Concept - Letter shift code: Each letter moves one step forward in the alphabet.

Step 1 - Confirm the rule: F to G, L to M, O to P, W to X, E to F, R to S is a shift of +1.

Step 2 - Apply to GARDEN: G to H, A to B, R to S, D to E, E to F, N to O gives HBSEFO.

Tip: Always test the rule on the given word before coding the new one.

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

Q31.

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

- (A) 40
- (B) 42
- (C) 44
- (D) 36



Solution

Concept - Series with growing gaps: The differences are 4, 6, 8, 10, rising by 2 each time.

Step 1 - Next difference: After 10 comes 12.

Step 2 - Add: $30 + 12 = 42$.

Tip: The terms are $n(n + 1)$, so the sixth term is $6 \times 7 = 42$.

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

Q32.

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

- (A) 10 km
- (B) 0 km
- (C) 5 km
- (D) 15 km

Solution

Concept - Direction sense: Track each leg along the north-south and east-west axes.

Step 1 - Trace the path: North 5, then east 5, then south 5. The north and south legs cancel.

Step 2 - Net position: Only 5 km east remains, so the distance is 5 km.



Tip: Sketch the path as steps on graph paper to avoid mistakes.

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

Q33.

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

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

Solution

Concept - Trace the relation step by step: Resolve the innermost phrase first.

Step 1 - Inner phrase: The only daughter of my mother is Rekha herself.

Step 2 - Outer relation: So the man's mother is Rekha, which means Rekha is the man's mother.

Tip: Replace each phrase with a single named person as you work outward.

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

Q34.

Q. Which one does not belong with the others: Triangle, Square, Rectangle, Rhombus?



- (A) Triangle
 - (B) Square
 - (C) Rectangle
 - (D) Rhombus
-

Solution

Concept - Group by shared property: Square, rectangle and rhombus are all four-sided (quadrilaterals).

Step 1 - Spot the difference: A triangle has only three sides.

Step 2 - Conclude: The triangle is the odd one out.

Tip: Find the property shared by most, then name the exception.

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

Q35.

Q. In typography, the height of the main body of a lowercase letter such as 'x', not counting ascenders or descenders, is called the?

- (A) Baseline
 - (B) x-height
 - (C) Kerning
 - (D) Leading
-

Solution

Concept - Type anatomy terms: Each term describes a different part of type layout.



Step 1 - Rule out: The baseline is the line letters sit on, kerning is space between two letters, and leading is space between lines.

Step 2 - Identify: The body height of lowercase letters is the x-height.

Tip: It is named after the letter x, which has no ascender or descender.

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

Q36.

Q. In the additive (light) colour model, mixing red light and blue light produces which colour?

- (A) Yellow
- (B) Cyan
- (C) Magenta
- (D) White

Solution

Concept - Additive RGB mixing: Overlapping coloured lights add together.

Step 1 - Recall the pairs: Red plus green is yellow, and green plus blue is cyan.

Step 2 - Apply: Red plus blue is magenta.

Tip: All three lights together make white.

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



Q37.

Q. The minimalist motto 'Less is more' in modern architecture and design is most associated with which architect?

- (A) Le Corbusier
- (B) Frank Gehry
- (C) Zaha Hadid
- (D) Ludwig Mies van der Rohe

Solution

Concept - Designers and their mottos: Famous architects are often linked to short design slogans.

Step 1 - Rule out: Le Corbusier said a house is a machine for living, while Gehry and Hadid are known for expressive, curving forms.

Step 2 - Identify: Less is more is Mies van der Rohe's motto.

Tip: Mies also said God is in the details.

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

Q38.

Q. How many edges does a cube have?

- (A) 12
 - (B) 8
 - (C) 6
 - (D) 24
-



Solution

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

Step 1 - Reason: Faces meet in pairs along edges.

Step 2 - Count: That gives 12 edges.

Tip: Check with Euler's rule: $V - E + F = 8 - 12 + 6 = 2$.

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

Q39.

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

- (A) 6
- (B) 5
- (C) 4
- (D) 7

Solution

Concept - Opposite-face rule of a dice: Opposite faces always sum to 7.

Step 1 - Set up: Bottom equals $7 - \text{top}$.

Step 2 - Compute: $7 - 2 = 5$.

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

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

Q40.



Q. Book is to Reading as Fork is to?

- (A) Drawing
- (B) Kitchen
- (C) Eating
- (D) Cooking

Solution

Concept - Analogy by function: The link is object to its main use.

Step 1 - First pair: A book's main use is reading.

Step 2 - Match: A fork's main use is eating.

Tip: A fork is used in cooking too, but its primary use for a person is eating.

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

Q41.

Q. A person is facing south. If the person turns 90 degrees clockwise, which direction are they now facing?

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

Solution

Concept - Clockwise turning order: Clockwise goes north to east to south to west and back to north.



Step 1 - Start point: Facing south.

Step 2 - Turn: A 90-degree clockwise turn from south faces west.

Tip: Clockwise is the direction the hour hand moves.

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

Q42.

Q. Which Indian city is most famous for its traditional blue pottery?

- (A) Jaipur
- (B) Kolkata
- (C) Chennai
- (D) Lucknow

Solution

Concept - Craft and place: Blue pottery is a signature craft of Rajasthan.

Step 1 - Scan options: Among the choices, Jaipur is the recognised centre.

Step 2 - Confirm: Jaipur blue pottery uses a distinctive quartz-based body glazed in blue.

Tip: It carries influences from Persian and Central Asian tile work.

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

Q43.



Q. The Ajanta caves in Maharashtra are best known for which of the following?

- (A) Mughal miniatures
- (B) Buddhist mural paintings
- (C) Jain bronze idols
- (D) Colonial frescoes

Solution

Concept - Heritage sites and their art: Ajanta is a group of rock-cut caves rich in religious art.

Step 1 - Rule out: Mughal miniatures, Jain bronzes and colonial frescoes belong to other traditions.

Step 2 - Identify: Ajanta is famous for its ancient Buddhist mural paintings.

Tip: Nearby Ellora is better known for rock-cut sculpture and temples.

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

Q44.

Q. Which of these is a warm colour?

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



Solution

Concept - Warm versus cool colours: Warm colours are on the red side of the wheel.

Step 1 - Rule out: Blue, green and violet are cool colours.

Step 2 - Identify: Red is a warm colour.

Tip: Warm colours (red, orange, yellow) feel advancing and energetic.

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

Q45.

Q. The golden ratio, often used in design and layout, is approximately equal to?

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

Solution

Concept - Famous constants: Each value here is a well-known number.

Step 1 - Rule out: 1.414 is $\sqrt{2}$, 3.142 is π , and 2.718 is e .

Step 2 - Identify: The golden ratio $\varphi \approx 1.618$.

Tip: $\varphi = \frac{1+\sqrt{5}}{2}$.

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



Q46.

Q. If an A4 sheet is folded in half across its longer side, which paper size results?

- (A) A5
- (B) A3
- (C) A6
- (D) A2

Solution

Concept - ISO A-series halving: Folding a sheet in half gives the next smaller size.

Step 1 - Direction: One size smaller than A4 is A5.

Step 2 - Conclude: So A4 folded in half becomes A5.

Tip: A bigger number means a smaller sheet in the A-series.

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

Q47.

Q. The CMYK colour model is primarily used for?

- (A) Screen displays
- (B) Colour printing
- (C) Website backgrounds
- (D) Stage lighting

Solution



Concept - Colour models by medium: Different media use different colour systems.

Step 1 - Rule out: Screens and websites use RGB, and stage lighting mixes coloured light.

Step 2 - Identify: CMYK (cyan, magenta, yellow, key black) is for colour printing.

Tip: Use RGB for light and CMYK for ink.

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

Q48.

Q. The principle of ‘persistence of vision’ is the basis for which of the following?

- (A) Still photography
- (B) Stone sculpture
- (C) Animation and film
- (D) Screen printing

Solution

Concept - How moving images work: The eye briefly holds an image, so quick frames appear to move.

Step 1 - Rule out: Photography, sculpture and printing produce static images.

Step 2 - Identify: Persistence of vision underlies animation and film.

Tip: Around 24 frames per second reads as smooth motion.



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

Q49.

Q. Which one is the odd one out: Oak, Teak, Pine, Granite?

- (A) Oak
- (B) Teak
- (C) Pine
- (D) Granite

Solution

Concept - Group by material type: Sort by origin, plant-based versus mineral.

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

Step 2 - Exception: Granite is a stone, so it is the odd one out.

Tip: Ask what most items have in common, then find the misfit.

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

Q50.

Q. If each letter is replaced by its position in the alphabet (A=1, B=2, and so on), what code represents the word CAB?

- (A) 312
- (B) 321
- (C) 123
- (D) 213



Solution

Concept - Letter-to-number position code: Replace each letter with its alphabet position.

Step 1 - Convert: C is 3, A is 1, B is 2.

Step 2 - Read in order: That gives 312.

Tip: Keep the letters in their original order while coding.

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

Q51.

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

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

Solution

Concept - Skip-one letter pattern: Every second letter of the alphabet is taken.

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

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

Tip: These are the odd-position letters of the alphabet.

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

Q52.



Q. What is the angle between the hour hand and the minute hand of a clock at exactly 3 o'clock?

- (A) 30 degrees
 - (B) 60 degrees
 - (C) 90 degrees
 - (D) 120 degrees
-

Solution

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

Step 1 - Count marks: At 3:00 the hands are three marks apart.

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

Tip: A right angle appears at both 3:00 and 9:00.

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

Q53.

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

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

Solution



Concept - Artists and movements: Each artist is tied to a style.

Step 1 - Rule out: Cubism links to Picasso and Braque, and Impressionism to Monet.

Step 2 - Identify: Dali is a leading Surrealist, known for dreamlike, melting imagery.

Tip: His painting The Persistence of Memory shows melting clocks.

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

Q54.

Q. In layout and graphic design, the main purpose of a grid is to?

- (A) Provide alignment and structure
- (B) Add more colour
- (C) Increase the file size
- (D) Replace all typography

Solution

Concept - Purpose of a design grid: A grid is a framework for organising content.

Step 1 - Rule out: A grid does not add colour, enlarge files, or replace type.

Step 2 - Identify: A grid gives content consistent alignment and structure.

Tip: Grids create rhythm and make layouts feel ordered.

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



Q55.

Q. Which of the following is NOT a recognised type of visual balance in design?

- (A) Symmetrical
- (B) Gradient
- (C) Radial
- (D) Asymmetrical

Solution

Concept - Types of balance: The standard types are symmetrical, asymmetrical and radial.

Step 1 - Rule out: Symmetrical, radial and asymmetrical are all forms of balance.

Step 2 - Identify: Gradient describes a colour or tone blend, not a type of balance.

Tip: Balance is about distributing visual weight, not blending colour.

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

Q56.

Q. A logo is enlarged so that its width increases from 4 cm to 10 cm. What is the scale factor of the enlargement?

- (A) 2
- (B) 3
- (C) 2.5



(D) 1.5

Solution

Concept - Scale factor: Divide the new size by the original size.

Step 1 - Set up: $10 \div 4$.

Step 2 - Compute: $= 2.5$.

Tip: A factor above 1 means enlargement and below 1 means reduction.

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

Q57.

Q. Which typeface classification has small strokes or 'feet' at the ends of its letters?

- (A) Sans-serif
- (B) Script
- (C) Display
- (D) Serif

Solution

Concept - Type classifications: Faces are grouped by their letter shapes.

Step 1 - Rule out: Sans-serif has no feet, script imitates handwriting, and display is decorative.

Step 2 - Identify: Serif type has the small finishing strokes called



serifs.

Tip: The word sans means without, so sans-serif is the opposite of serif.

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

Q58.

Q (Drawing). It is a busy weekday morning on a city pavement outside a row of shops. A cobbler has set up his small open-air repair spot on a folded gunny sack, with worn shoes, tins of polish, brushes, nails and hand tools spread around him. The focal subject is the cobbler, seated low on a wooden block, bent forward with a shoe held between his knees as he pulls a waxed thread tight to stitch a torn sole, a customer's bare foot waiting beside him. Imagine this scene and draw it with the cobbler stitching the shoe as the clear centre of interest. Show the spread of tools and polish tins, the waiting barefoot customer, the shop shutters behind, and passers-by on the pavement.

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 ground-level craft scene rich in small tools, held by one concentrated action. Plan the cobbler's hunched pose first.

Step 1 - Set perspective and the pavement: Choose a low eye level near the seated cobbler so students look down slightly at his



spread of tools. Let the shop shutters and pavement recede to a vanishing point to one side so the street has depth.

Step 2 - Compose in layers: Build three depths - the cobbler and the shoe up front, the waiting customer and tool spread in the middle, the shutters and passers-by behind. Cluster the tools tightly around him so the trade reads clearly without spreading the eye thin.

Step 3 - Make the focal subject win: Place the hands pulling the thread near the centre of interest and give them the sharpest detail and darkest lines. Let the bent back, the arms and the customer's gaze all funnel toward that stitching point.

Step 4 - Fix proportion, then refine line quality: Check the hunched seated proportions and that the shoe, tins and tools sit at believable small sizes against the figure. Then vary weight - firm dark strokes on the cobbler and shoe, light strokes for the shop front and distant walkers.

Tip: The taut waxed thread stretching from needle to hand is the line that tells the story. Draw it last as one tight, straight stroke so the pulling action reads at a glance. [Go Back to Q58](#)

Q59.

Q (Design Aptitude). Students revise from thick textbooks and from tablets, but reading for long hours on a flat desk bends the neck and tires the arms, and there is rarely a good way to prop a heavy book open at the right angle while also keeping a notebook flat for writing. Design a study stand for a desk that holds a heavy open book or a tablet at a comfortable reading angle and can be



adjusted, yet folds flat to slip into a bag or a drawer when not needed. Show your design in two states: (1) folded flat for storage or carrying, and (2) set up and holding an open book at a reading angle.

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 ergonomics and packing problem - a firm angled hold that also disappears flat. Sketch the prop and the angle mechanism.

Step 1 - Nail the requirements: Fix the constraints - holds a heavy book open without it snapping shut, offers a few reading angles, stays put on the desk, and folds to near-flat for a bag. Let each drawn feature serve one of these.

Step 2 - Show the two required states: Draw state one as the stand collapsed to a flat board or slim panel. Draw state two propped open at an angle with a book resting on it, page clips holding the pages down. Keep the same panel visible in both so it reads as one folding object.

Step 3 - Label features, do not write essays: Use short leader labels - "angle notch", "fold-out leg", "page clip", "base ledge", "tablet groove". Two or three words each, pointing at the part.

Step 4 - Prove it works: Add a side view showing the leg locking into different notches for different angles, and a detail of the ledge



and clip holding a fat book open. This proves both the adjustable reading angle and the secure hold.

Tip: The notched leg that sets the angle is the key mechanism. Draw the notches clearly so the examiner sees the stand truly adjusts, rather than sitting at one fixed tilt. [Go Back to Q59](#)



Answer Key (Part A)

Section 1 - NAT (Numerical Answer Type)

Q1	Q2	Q3	Q4	Q5	Q6	Q7
48	96	27	55	108	180	625

Q8	Q9	Q10	Q11	Q12	Q13	Q14
3750	16777216	144	15	2.1	72	440

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

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

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

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

Section 3 - MCQ (single correct)

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

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

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



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

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

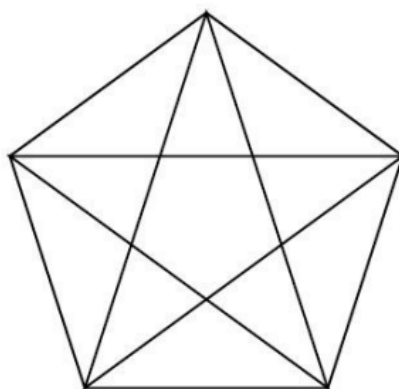


Appendix: Visual Reasoning

Practice from Past UCEED Papers

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

P1. (Past UCEED) How many triangles are there in the figure shown?

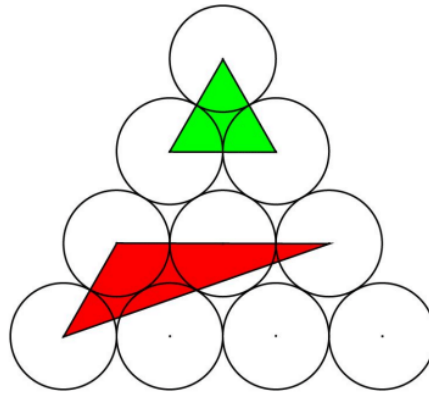


How to approach

Redraw the combined line figure on rough paper. Count triangles in a fixed order: first the smallest single triangles, then triangles made of two or more small pieces. Working smallest-to-largest stops you missing any or counting one twice.

P2. (Past UCEED) The corners of the green and red triangles coincide with the centres of the circles. All the circles have equal diameters and adjacent circles touch each other. If the area of the green triangle is 3.14, what is the area of the red triangle?

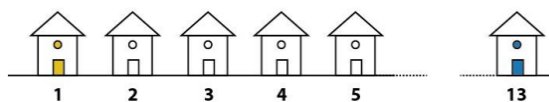




How to approach

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.

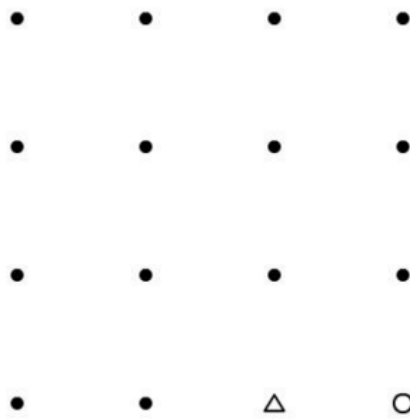
- P3. (Past UCEED)** A Street has 13 houses in a row as shown in the figure. Some residents in the first house tested positive for COVID-19. The virus spreads in two ways: it can spread to the next house, or jump directly to the third house. Residents of house number 2 can get infection in only one way, the house number 3 in two ways, the house number 4 in 3 ways, the house number 5 in 5 ways and so on. If the virus only progresses from Left to Right direction, in how many ways can the residents of the house number 13 get infected?



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)** If you start from the circle and end at the triangle, what is the minimum number of straight lines required to pass through all the dots without retracing any route? You are allowed to pass through a dot more than once.

**How to approach**

Redraw the combined line figure on rough paper. Count triangles in a fixed order: first the smallest single triangles, then triangles made of two or more small pieces. Working smallest-to-largest stops you missing any or counting one twice.

