Undergraduate Common Entrance Examination for Design

UCEED 2026 MOCK QUESTION PAPER - SET 2

Paper Specific Instructions

1. The total duration of the examination is **3 hours**. The question paper contains two parts – **Part A** and **Part B**.
2. **Part A** duration is **2 hours**. It is divided into three sections: 1, 2 and 3. All sections are compulsory. There are a total of **57 questions** in Part A carrying a total of **200 marks**.
3. **Part B** duration is **1 hour**. It is compulsory and contains **2 drawing/design aptitude questions** of 50 marks each (Total 100 marks).
4. The marking scheme of Part A is as follows:

Section	Type of Questions	Number of Questions	Marks for Correct Answer	Marks for Wrong Answer	Total Marks
1	Numerical Answer Type (NAT)	14	4	0	56
2	Multiple Select Question (MSQ)	15	4 (Partial Marking)	-1	60
3	Multiple Choice Question (MCQ)	28	3	-0.71	84
Total		**57**			**200**

PART A (200 Marks)

Section 1: Numerical Answer Type (NAT)

(14 Questions, 4 Marks each, NO Negative Marking)

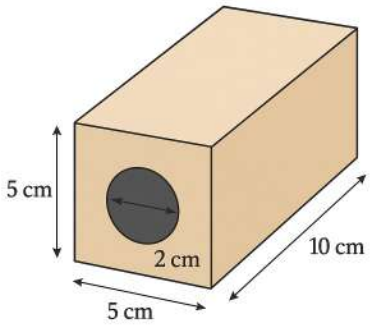
Q.01 A container holds 10 litres of water. 2 litres are removed and replaced with milk. This process is repeated one more time. What is the final quantity of water (in litres) in the container?

Q.02 "The quick brown fox jumps over the lazy dog." If every third letter is removed from the sentence (including spaces), what is the total number of remaining letters?

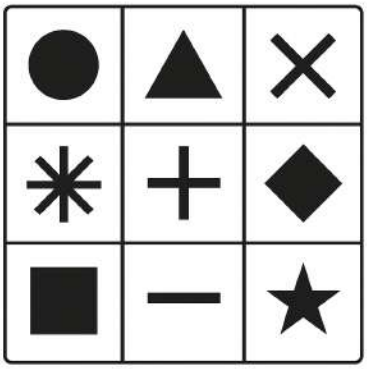
Q.03 In a magic square of 5\times5 order, using numbers 1 to 25, the sum of numbers in each row, column, and main diagonal is constant. What is this constant sum?

Q.04 A solid cuboid of dimensions 5 cm × 5 cm × 10 cm has a cylindrical hole of diameter 2 cm drilled completely through its center along the 10 cm axis. After drilling the hole, what is the total

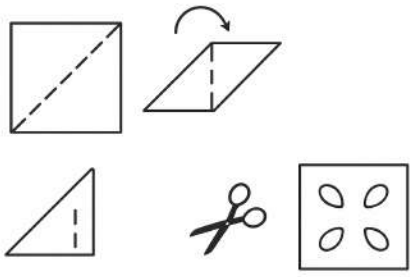
number of faces on the resulting solid?



Q.05 A triangular piece of cardboard has sides of length 5 cm, 12 cm, and 13 cm. If this triangle is revolved completely around its longest side (13 cm), a solid is formed. What is the radius (in cm) of the largest circle in the cross-section of this solid?
Q.06 A 3 x 3 grid contains nine symbols. The grid is rotated 90° clockwise and then mirrored along the vertical axis. If you assign a value of 1 to each symbol that returns to its original position, what is the total sum of the values?

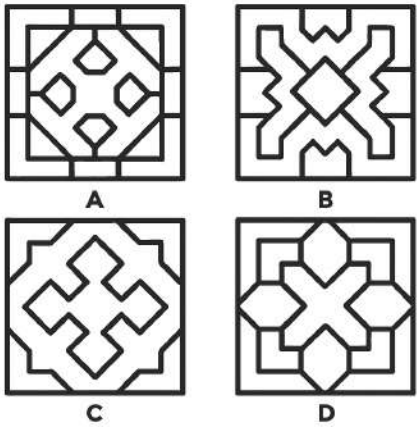


Q.07 The sequence of folding a square piece of paper is shown. The final folded paper is cut with two small, non-overlapping cuts. When the paper is unfolded, what is the total number of holes in the sheet?



Q.08 What is the number that replaces the question mark in the following series:
2, 10, 30, 68, 130, ?
Q.09 If 1 *Hertz* (Hz) = 1 cycle per second, and 1 *BPM* (Beats Per Minute) is 1 beat per minute. A

sequence of light pulses happens at 4 Hz. How many pulses will occur over a 5-minute duration?
Q.10 A clock's minute hand is 12 cm long. From 4:00 PM to 4:45 PM, what is the distance traveled by the tip of the minute hand in cm? (Use pi approx 3.14, round to two decimal places).
Q.11 An image shows four complex tiles (A, B, C, D) based on a repeated geometric motif. Only three tiles can be assembled to form a perfect square without gaps or overlaps. What is the number assigned to the tile that is left out?

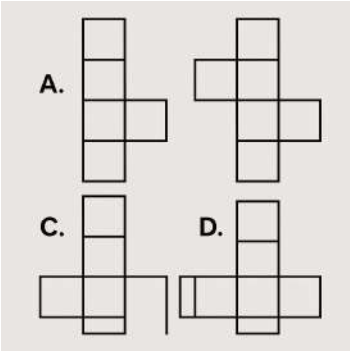


Q.12 30 students took a design aptitude test. The median score was 75. The lowest score was 40, and the highest was 95. If the three lowest scoring students and the two highest scoring students are removed, what is the new total number of students?
Q.13 A photographer took 240 photos on Day 1. On Day 2, they took 25% fewer photos than Day 1. On Day 3, they took 50% more photos than Day 2. How many total photos were taken over the three days?
Q.14 The product of the ages of three designers (in whole years) is 210. The sum of their ages is 20. If the youngest designer is 5 years old, what is the age of the oldest designer?

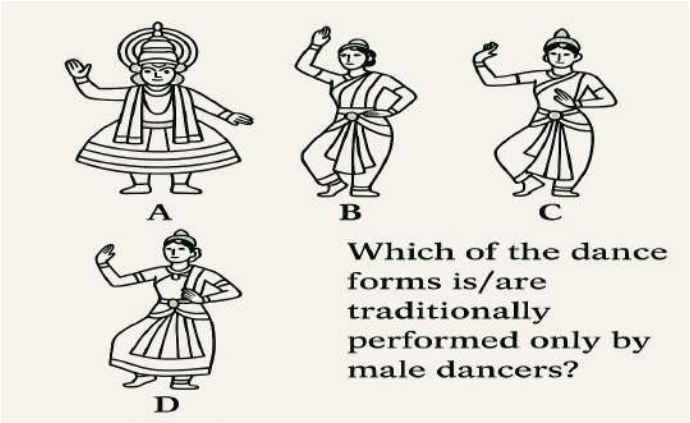
Section 2: Multiple Select Questions (MSQ)

(15 Questions, 4 Marks each, -1 for incorrect answer/combination)
Q.15 Which of the following is/are an example of **Biomimicry** in design?
A. Velcro fasteners inspired by burrs.
B. High-speed trains inspired by the beak of the Kingfisher bird.
C. Solar panels inspired by photosynthesis in leaves.
D. The structure of the Eiffel Tower inspired by human bone architecture.

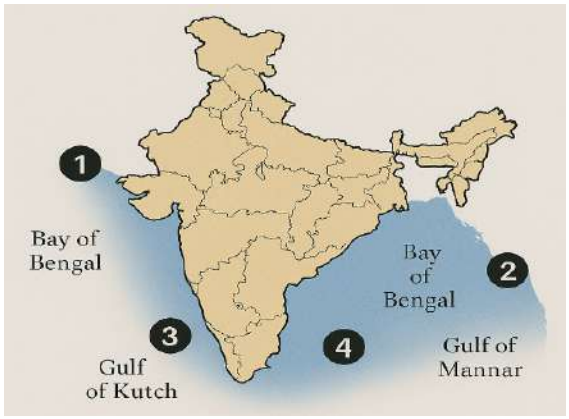
Q.16 A set of four different geometric nets (A, B, C, D) is shown. Which of the nets can be folded to form a closed cube?
A. (Net A)
B. (Net B)
C. (Net C)
D. (Net D)



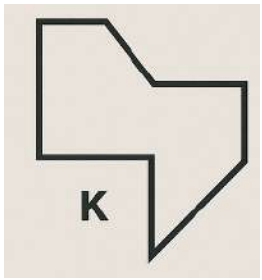
Q.17 Which of the following material(s) is/are primarily obtained from petroleum (crude oil)?
A. Nylon
B. Polystyrene
C. Silk
D. Acrylic
Q.18 In the context of visual hierarchy and graphic design, which of the following is/are generally used to draw a user's attention?
A. High contrast in colour.
B. Large font size.
C. Repetition of a small, dull element.
D. Strategic use of negative space.
Q.19 An image shows four famous Indian dance forms (e.g., Kathakali, Bharatnatyam, Odissi, Manipuri). Which of the dance forms is/are traditionally performed *only* by male dancers?
A. (Dance Form A)
B. (Dance Form B)
C. (Dance Form C)
D. (Dance Form D)

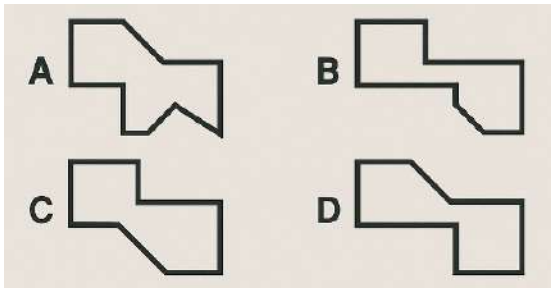


Q.20 Which of the following is/are TRUE about the concept of **Ergonomics**?
A. It is focused solely on the aesthetic appeal of a product. B.
It studies the relationship between humans and their working environment.
C. It aims to reduce strain, fatigue, and errors.
D. The ideal ergonomic solution is always identical for all users.
Q.21 A map of India is shown with four major water bodies numbered 1 to 4 (e.g., Arabian Sea, Bay of Bengal, Gulf of Kutch, Gulf of Mannar). Which of the numbered water bodies is/are part of the Indian Ocean?
A. (Water Body 1)
B. (Water Body 2)
C. (Water Body 3)
D. (Water Body 4)



Q.22 Which of the following are the characteristics of **Minimalism** as a design philosophy?
A. Emphasis on functionalism.
B. Use of complex ornamentation.
C. Limited colour palette.
D. Clarity and simplicity.
Q.23
A 2D shape (K) is shown. Which of the options (A, B, C, D) will result in an identical 2D shape if K is rotated by 180° and then mirrored horizontally?
A. (Shape A)
B. (Shape B)
C. (Shape C)
D. (Shape D)





Q.24 In a digital image editing software, which of the following actions will *not* change the physical dimensions (width and height in pixels) of an image?
A. Cropping
B. Scaling (Resizing)
C. Adjusting the Brightness
D. Rotating 90°
Q.25 The traditional Indian craft forms of **Gond, Madhubani, and Warli** are all examples of:
A. Pottery
B. Textile Weaving
C. Painting Styles
D. Metal Casting
Q.26 Which of the following statements about **perspective drawing** is/are TRUE?
A. Objects drawn using one-point perspective have all receding parallel lines meeting at a single vanishing point.
B. Two-point perspective is typically used to draw interiors of rooms.
C. Objects closer to the viewer are drawn smaller.
D. Horizon line represents the eye level of the observer.

Q.27 Which two metals are primarily combined to create **Brass**?
A. Copper
B. Tin
C. Zinc
D. Aluminium
Q.28 Which of the following visual attributes relate to the use of **Texture** in design?
A. Tactile quality (feel)
B. Visual weight
C. Pattern density
D. Smoothness
Q.29 The design principle of **Contrast** can be effectively achieved through the juxtaposition of:
A. Large and small elements.

B. Rough and smooth textures.

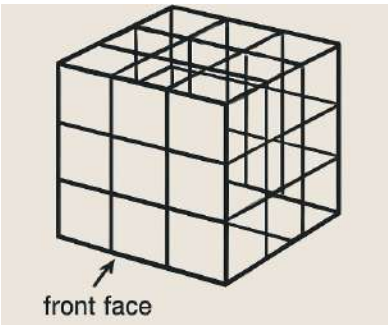
C. Warm and cool colours.

D. Similar shades of the same colour.

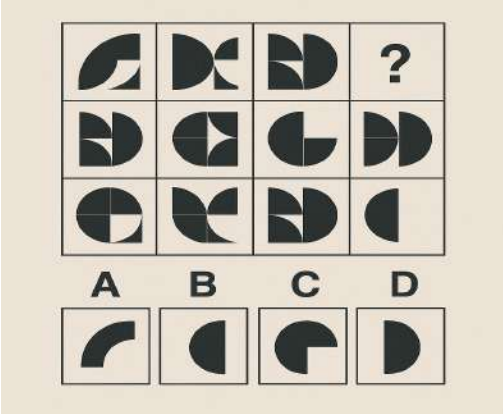
Section 3: Multiple Choice Questions (MCQ)

(28 Questions, 3 Marks each, -0.71 for incorrect answer)
Q.30 What is the shortest distance between a face and the opposite face in a standard 4 x 4 x 4 Rubik's Cube?
A. 1 unit
B. 2 units
C. 3 units
D. 4 units
Q.31 An image shows a 3D wireframe cube with internal lines dividing it into smaller cubes. How many squares of any size are visible on the front face of the wireframe structure?

A. 10
B. 12
C. 14
D. 16



Q.32 A 4 x 4 grid contains a sequence of four shapes following a rotational and positional rule. Which option correctly fills the missing 4th cell?
A. (Shape A)
B. (Shape B)
C. (Shape C)
D. (Shape D)

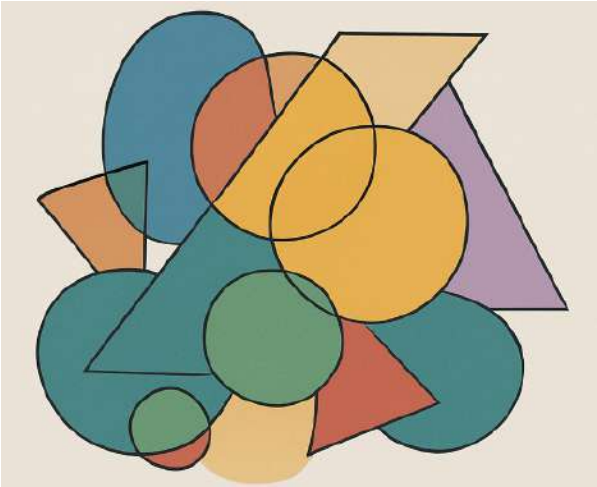


Q.33 Which option is the odd one out?
A. Hexagon
B. Octagon
C. Decagon
D. Parabola

Q.34 What is the next number in the sequence below?
121, 144, 169, 196, ?
A. 210
B. 225
C. 240
D. 256

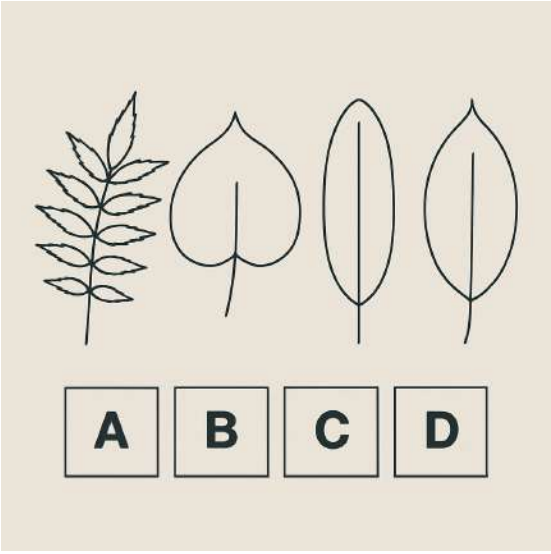
Q.35 Which option is the odd one out?
A. DOCTOR
B. TEACHER
C. ENGINEER
D. ARCHITECT

Q.36 A complex image contains a group of various abstract, overlapping shapes. What is the total number of perfectly circular shapes (of any size) that are present?
A. 4
B. 5
C. 6
D. 7



Q.37 The famous painting "Starry Night" was created by which post-impressionist painter?
A. Claude Monet
B. Vincent van Gogh
C. Paul Cézanne
D. Pablo Picasso
Q.38 In graphic design, what does **CMYK** primarily stand for?
A. Cyan, Magenta, Yellow, Key (Black)
B. Colour, Magenta, Yellow, Key (Black)
C. Cyan, Magenta, Yellow, Kilo
D. Colour, Mix, Yellow, Key (Black)
Q.39 Which Indian city is home to the famous architectural work, the **Lotus Temple**?
A. Mumbai
B. Hyderabad
C. Bengaluru
D. New Delhi
Q.40 What is the term for the process of selectively removing material from a surface to reveal an image in relief, commonly used in printmaking?
A. Etching
B. Serigraphy
C. Engraving
D. Lithography
Q.41 Which tool is best suited for quickly creating precise, parallel lines in a technical drawing?
A. Protractor
B. Set Square
C. French Curve
D. Compass

Q.42 In Hindu mythology, which of the following animals is associated with Lord Ganesha as his Vahana (mount)?
A. Lion
B. Mouse
C. Peacock
D. Bull
Q.43 Which of the following colours is created by mixing **Cyan and Yellow** in the Subtractive (CMY) colour model?
A. Red
B. Green
C. Blue
D. Magenta
Q.44 What is the next term in the sequence: A , C , F , J , O , ?
A. U
B. V
C. W
D. X
Q.45 The iconic bentwood **Chair No. 14** is a masterpiece of early industrial design, famously created by:
A. Charles and Ray Eames
B. Le Corbusier
C. Michael Thonet
D. Ludwig Mies van der Rohe
Q.46 An image shows the outlines of four common leaves (e.g., Neem, Banyan, Coconut, Rose). Which option correctly identifies the leaf that belongs to a tree primarily found in coastal regions?
A. (Leaf A)
B. (Leaf B)
C. (Leaf C)
D. (Leaf D)



Q.47 The first two shapes are completely filled, the third is empty.
In the second row, the first has horizontal lines, the second is empty, and the third has dots.
In the third row, the first and second shapes have diagonal lines.

Based on this sequence, what should be the internal fill pattern of the final (bottom-right) shape?

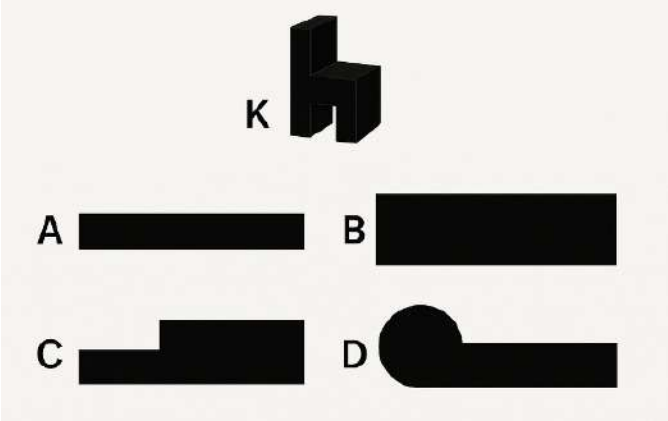
A. Completely filled

B. Horizontally lined

C. Dotted

D. Empty

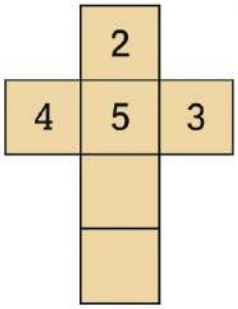
Q.48 An image shows an object (K) and four possible shadow views (A, B, C, D) cast at a specific time of day. Which option correctly represents the shadow cast by the object?
A. (Shadow A)
B. (Shadow B)
C. (Shadow C)
D. (Shadow D)



Q.49 A material that exhibits different properties when measured in different directions (e.g., wood) is called:
A. Isotropic
B. Homogeneous
C. Anisotropic
D. Amorphous
Q.50 In the hexadecimal colour system, what is the value of pure White?
A. #FFFFFF
B. #000000
C. #808080
D. #FF00FF

Q.51 The unfolded net of a 3D dice is shown. If the face with the number '5' is on the top, which number will be on the bottom face?

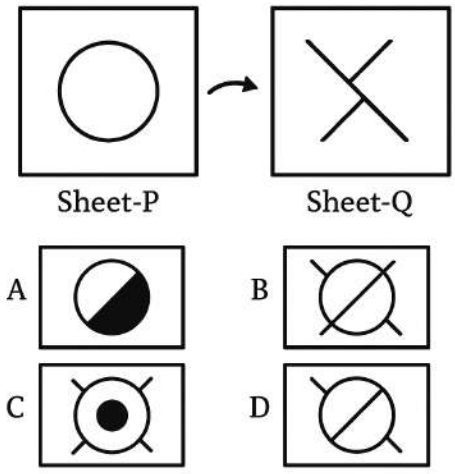
A. 1
B. 2
C. 3
D. 6



Q.52 Two transparent sheets, Sheet-P (with a circular hole) and Sheet-Q (with two diagonal slits), are shown. When Sheet-Q is placed over Sheet-P and rotated 90° clockwise, a new pattern is formed.

Which option correctly represents the final overlapping pattern?

A. (Pattern A)
B. (Pattern B)
C. (Pattern C)
D. (Pattern D)

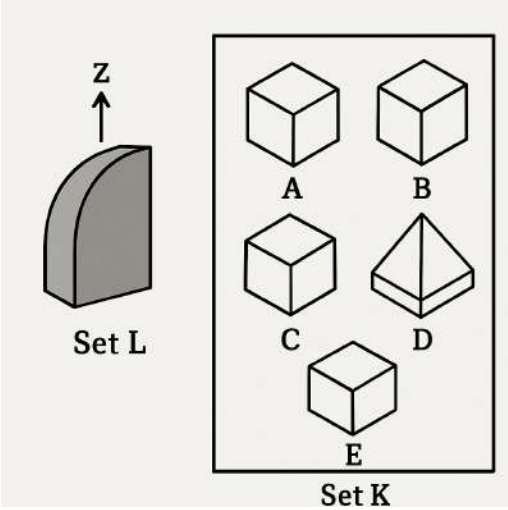


Q.53 A product engineer decides to reduce the weight of a metal component by 10% but needs to increase its strength by 20%. The final cost should be 5% less than the original. How many of these three targets did the engineer achieve if the final component was 12% lighter, 18% stronger, and 6% cheaper?

A. 1
B. 2
C. 3
D. 0

Q.54 An image L (a simple 2D shape like a semi-circle) is extruded along the Z-axis. How many of the 5 shapes in Set K will have fewer faces than the solid formed by extruding L?

A. 1
B. 2
C. 3
D. 4



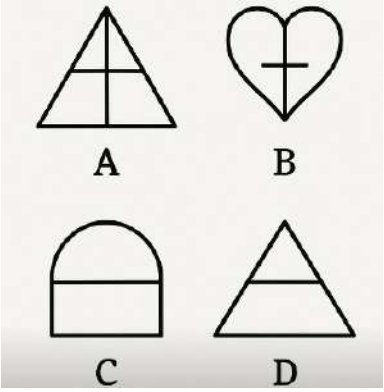
Q.55 Which of the following options shows the word **INNOVATE** as it would appear after being reflected horizontally (along the X-axis) and then viewed through a mirror (reflected vertically)?

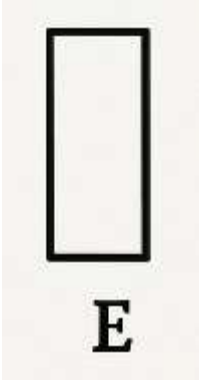
A. T∀VONNI
B. ETAVONNI
C. INИOVATE
D. ET∀VONNI

Q.56 A set of five shapes (A, B, C, D, and E) are shown below.

Which one of these shapes will look the same even after a 180° rotation?

A. Object A
B. Object E
C. Object C and Object B
D. Object D





Q.57 Which of the following is an example of a **smart material**?

A. Carbon Fiber

B. Shape-memory Alloys

C. Stainless Steel

D. Polytetrafluoroethylene (Teflon)

PART B (60 minutes - 100 marks)

Q. 1: Drawing [50 Marks]

Scene Composition & Observation
Imagine you are standing inside an **old, dimly lit library or archive**. The space is dominated by tall, wooden bookshelves that stretch to the ceiling, with occasional patches of sunlight filtering through high windows. Draw the scene, focusing on the strong sense of **depth and scale** created by the rows of shelves and the lone figure of a librarian or researcher absorbed in a book at a central desk.
Note:

- Make pencil sketches only.
- Do not use colour.

Evaluation Criteria: Observation, Composition of figures and objects, Sense of perspective and proportion, Quality of lines, Attention to details.

Q. 2: Design Aptitude [50 Marks]

Ergonomics & Universal Design
Many people, particularly the elderly or those with joint pain, struggle with the **simple task of opening jars and bottles** with stiff or tight lids.
Design a **universal opener device** that is highly ergonomic, easy to grip, and capable of securely opening various sizes of screw-on lids (jars, bottles, canisters) with minimal physical effort.
Show the device when:

1. it is in its **stowed/non-use state**, highlighting its compact form.
2. it is actively **being used** to open a large jar lid, demonstrating its mechanism.

Note:

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

Evaluation Criteria: Suitability of the design for the given context, Ease of carrying and use (especially for users with low grip strength), Uniqueness of design, Attention to detail, Explanation of features through visuals only, Clarity of the sketch and quality of presentation.