Time: 3 hours   Maximum Marks: 300

READ THE INSTRUCTIONS CAREFULLY

GENERAL

- This sealed booklet is your Question Paper. Do not break the seal till you are told to do so.

- Immediately after breaking the seal of the booklet, verify that the booklet contains **28 pages** and that all the **16 questions** along with the options are legible. Report immediately about any missing or torn sheet in this booklet and ask for a replacement of the booklet from the invigilator. No replacement will be allowed after 15 minutes of the starting of the examination.

- Write your Name, Roll Number, JEE (Advanced) 2023 Rank and other details in the space provided and nowhere else. No distinctive / identification mark of any type is to be put anywhere else in this booklet.

- Answers are to be written only in the booklet and within the space provided beside / box provided beside/below each Question and nowhere else. Answers written in non-designated place will not be evaluated.

- Blank spaces are provided within this booklet for rough work.

- Do not deface this booklet or detach or mutilate any sheet from the booklet. Such acts lead to disqualification.

- The question paper has five sections.

- **All the questions are compulsory.**

Total Marks Obtained:

In Numbers:

In words:_____

_____
Signature of the Examiner with date

_____
Signature of the Scrutinizer with date

NAME: _____

_____

ROLL NO:_____

JEE (ADVANCED) 2023 RANK:_____

CATEGORY:_____

CATEGORY RANK (IF APPLICABLE):

_____

EXAMINATION CENTRE:

_____

I HAVE READ ALL THE INSTRUCTIONS AND SHALL ABIDE BY THEM

_____
Signature of the Candidate

_____
Signature of the Invigilator after verification of identity and other details

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DO NOT WRITE ON THIS PAGE

SECTION A: Architectural Awareness (Maximum Marks: 60)
This section contains **FOUR** questions. Question 1 carries **30 marks**, Questions 2, 3 and 4 carry **10 marks** each. There is **NO** negative marking.

Q.1. This section contains **15 multiple choice questions**. Each question has four options, out of which **ONLY ONE** is correct. Mark the correct option with a tick ✔ mark.

(15 × 2 = 30 Marks)

(i) *Select the correct option that corresponds to the pattern given below when rotated 270° clockwise.*
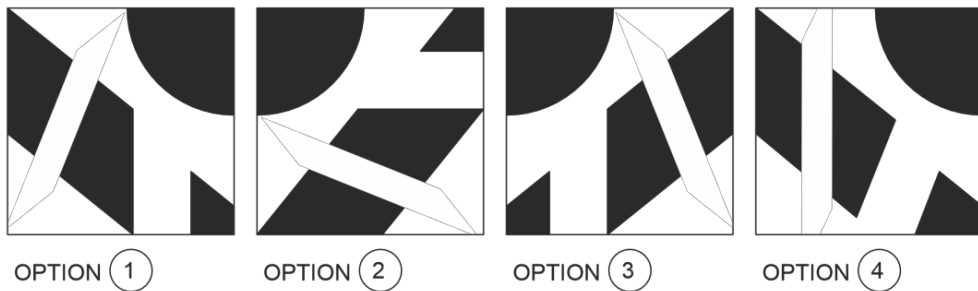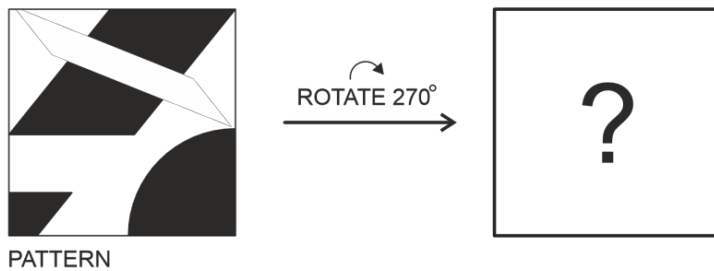
A	*OPTION 1*	B	*OPTION 2*
C	*OPTION 3*	D	*OPTION 4*

(ii) *Which of the following materials can be effectively used to construct a tensile structure?*

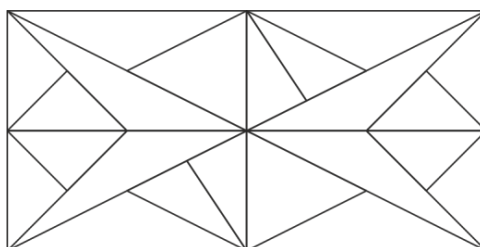|			
A	*Brick*	B	*Marble stone*
C	*Steel*	D	*Glass*

(iii) *The pattern below is to be made by assembling different coloured tiles cut into triangles. How many minimum colours are required so that adjacent triangles are **NOT** of the same colour?*

A	*3*		B	*4*
C	*5*		D	*6*

(iv) *Consider statements P and Q given below and choose the correct option.*

Statement P: *In the CMYK colour system, the letter 'K' represents black.*

**Statement Q**: *In the RGB colour system, mixing red and green produces yellow.*

A	*P is TRUE but Q is FALSE*		B	*P is FALSE but Q is TRUE*
C	Both *P & Q are FALSE*		D	Both *P & Q are TRUE*

(v) *Select the option where you would find a 'garbha-griha'.*

A	*Sanchi Stupa, Madhya Pradesh*
B	*Jama Masjid, New Delhi*
C	*Church of St. Francis of Assisi, Goa*
D	*Puri Jagannath Temple, Odisha*

(vi) *A flying bird is viewing a tall building from above, as shown in the figure. Identify the correct perspective view, as seen by the bird, from among the options 1 to 4.*
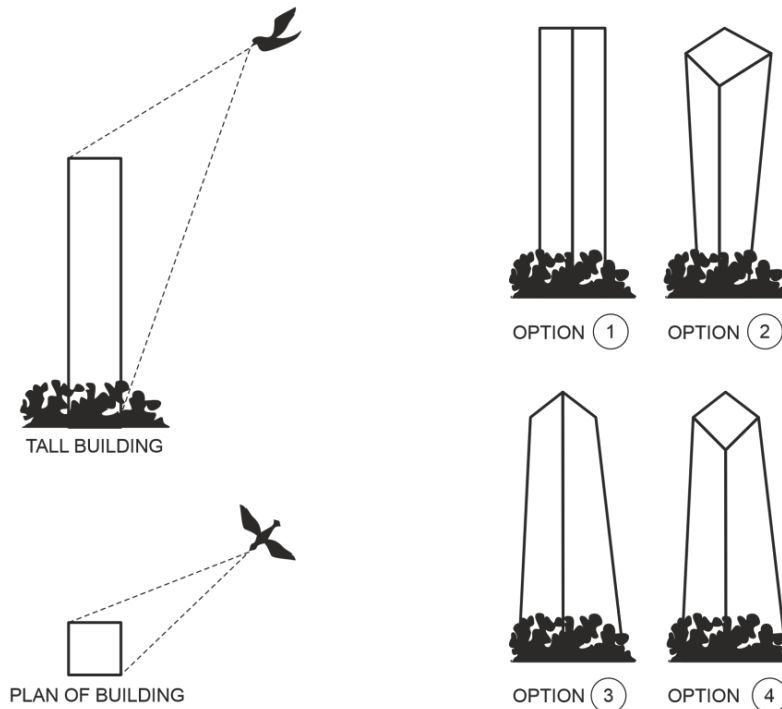
|			
A	*OPTION 1*	B	*OPTION 2*
C	*OPTION 3*	D	*OPTION 4*

(vii) *What would be the volume of concrete (in m^3) required to construct a solid, regular, equiangular, tetrahedron structure using ordinary portland cement concrete, if circumradius of the base of this tetrahedral structure is $4\sqrt{3}$ m?*

A	$144/\sqrt{3}$	B	$144\sqrt{3}$
C	$144/\sqrt{2}$	D	$144\sqrt{2}$

(viii) *Which of the following terms is **NOT** used to describe a type of light?*

A	*Infrared*	B	*Halogen*
C	*Fluorescent*	D	*Supersonic*

(ix)   *Considering the symmetries in figures 1 to 5, select the sequence that has a logical order.*
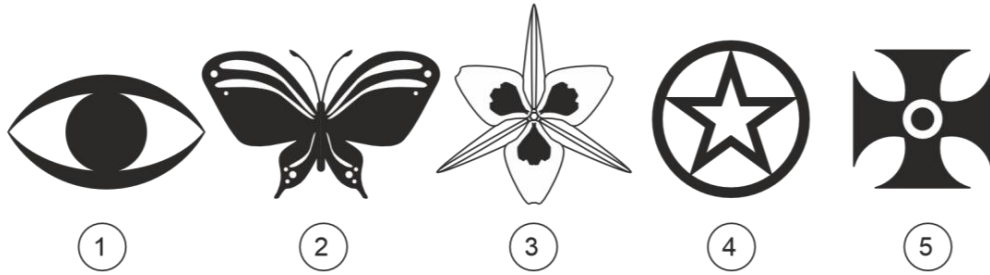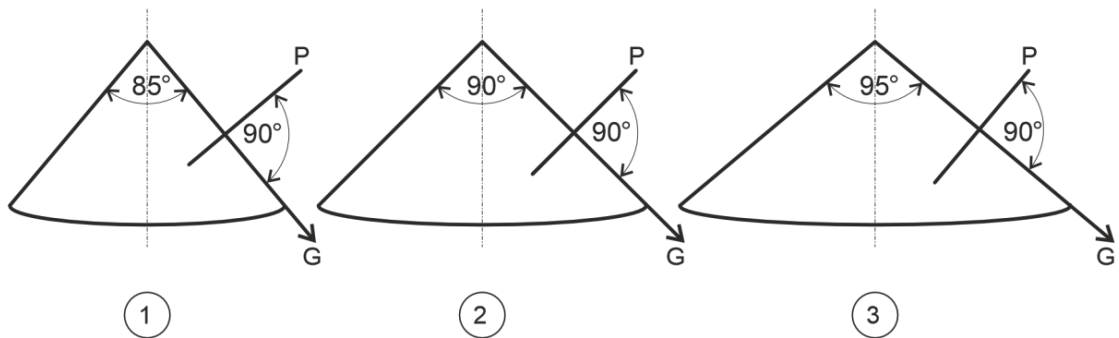

A	*2-1-3-5-4*	B	*1-2-3-4-5*
C	*2-3-1-4-5*	D	*1-3-2-5-4*

(x)   *A plane 'P' intersects a right circular cone such that it is perpendicular to the generatrix 'G'. Considering the different angles at the vertices of the cones (refer figure 1 to 3 below), identify the nature of the curves generated by the intersections, respectively.*

A	*1-Elliptical, 2-Parabolic, 3-Hyperbolic*

B	*1-Hyperbolic, 2-Circular, 3-Parabolic*

C	*1-Parabolic, 2-Parabolic, 3-Hyperbolic*

D	*1-Elliptical, 2-Hyperbolic, 3-Parabolic*

(xi)   *Which among the following is awarded for excellence in architecture?*

A	*Golden Globe*	B	*Pulitzer Prize*
C	*Field Medal*	D	*Pritzker Prize*

(xii) *Considering the figures 1 to 3, select the correct sequence of geometric nomenclature.*

①	②	③
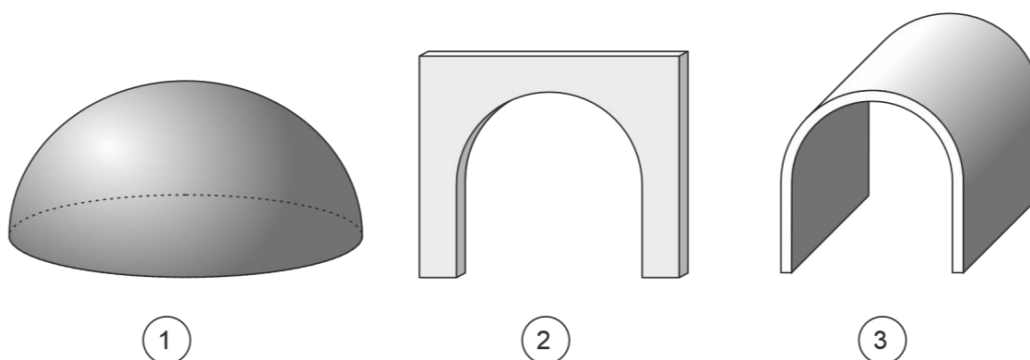
A	*1-Dome, 2-Vault, 3-Arch*	B	*1-Dome, 2-Arch, 3-Vault*
C	*1-Vault, 2-Dome, 3-Arch*	D	*1-Vault, 2-Arch, 3-Dome*

(xiii) *Consider the three statements (P, Q & R) and select the correct option.*

Statement P: *Reverberation time of sound in an auditorium can be reduced by using sound absorbent materials on walls and doors.*

Statement Q: *Reverberation time of sound in an auditorium can be reduced by using glass tiles and metal finishes.*

Statement R: *Reverberation time of sound in an auditorium can be reduced by using rough textured paint on walls and ceiling.*

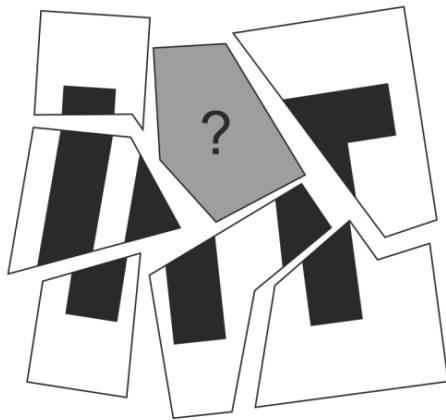| A	*Statements P & Q are true, but Statement R is false*
B	*Statements P & R are true, but Statement Q is false*
C	*Statementss P & Q are false, but Statement R is true*
D	*Statements P & R are false, but Statement Q is true*

(xiv)   *The figure below shows 7 pieces of a broken ceramic tile and one of them (shown in grey colour) is missing. Correctly identify the missing piece from the given options.*

BROKEN TILE
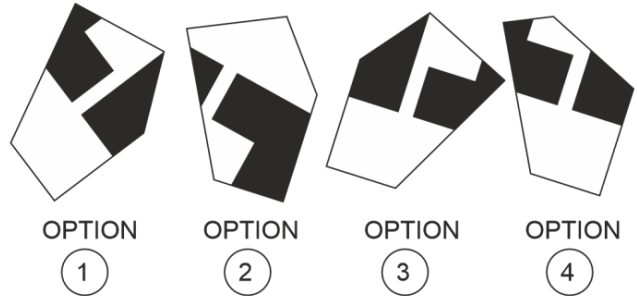
A	*OPTION 1*		B	*OPTION 2*
C	*OPTION 3*		D	*OPTION 4*

(xv)   *From the four institutional projects mentioned below, select the option that indicates the projects designed by Architect B. V. Doshi.*

1.   *IIM Ahmedabad*

2.   *IIM Bangalore*

3.   *NIFT New Delhi*

4.   *NIFT Hyderabad*

A	*1 & 2*		B	*1 & 4*
C	*2 & 3*		D	*3 & 4*

Q.2   *Match the representative diagrams of Indian Temples provided in **Column I** with their corresponding names and locations provided in **Column II**.*
      *Write the correct **alphabets from Column II** in the **box spaces given in Column I**.*

(5 × 2 = 10 Marks)

Column I	Column II
(A) ☐	(P) Kandariya Mahadeva Temple, Khajuraho, Madhya Pradesh
(B) ☐	(Q) Temple of Lalji, Bishnupur, West Bengal
(C) ☐	(R) Hidimba Temple, Manali, Himachal Pradesh
(D) ☐	(S) Jambukesvara Temple, Tiruchirappalli, Tamil Nadu
(E) ☐	(T) Badrinath Temple, Uttarakhand
	(U) Sun Temple, Konark, Odisha

Q.3   *Match the forts mentioned in **Column I** with their location from **Column II**.*
       *Write the correct **alphabets from Column II** in the **box spaces given in Column I**.*

                                                                                          (5 × 2 = 10 Marks)

Column I		Column II
(A) Amer Fort	☐	(P) Jaipur, Rajasthan
(B) Fort William	☐	(Q) Chennai, Tamil Nadu
(C) Golconda Fort	☐	(R) near Aurangabad, Maharashtra
(D) Fort St. George	☐	(S) Kolkata, West Bengal
(E) Daulatabad Fort	☐	(T) Visakhapatnam, Andhra Pradesh
		(U) Hyderabad, Telangana

Q.4   *Match the folk art forms mentioned in **Column I** with their native States from **Column II**.*
       *Write the correct **alphabets from Column II** in the **box spaces given in Column I**.*

   **(5 × 2 = 10 Marks)**

| Column I		Column II
(A) Kalamkari painting	☐	(P) Odisha & West Bengal
(B) Phad painting	☐	(Q) Bihar
(C) Pattachitra painting	☐	(R) Maharashtra
(D) Warli painting	☐	(S) Jammu & Kashmir
(E) Basholi miniature painting	☐	(T) Andhra Pradesh & Telangana
		(U) Rajasthan

SECTION B: Geometrical Drawing (Maximum Marks: 60)

- This section contains **THREE (03)** questions. Each question carries **20** marks.

Q.5   *A grey-coloured blank paper of size* 20 cm x 20 cm *is folded in half, thrice, cut with a scissor, and opened to get the following pattern.*
In the blank grid provided below, each unit measures 1cm x 1cm. *In this grid, draw the shape of the folded paper and hatch the pattern of cutouts.*
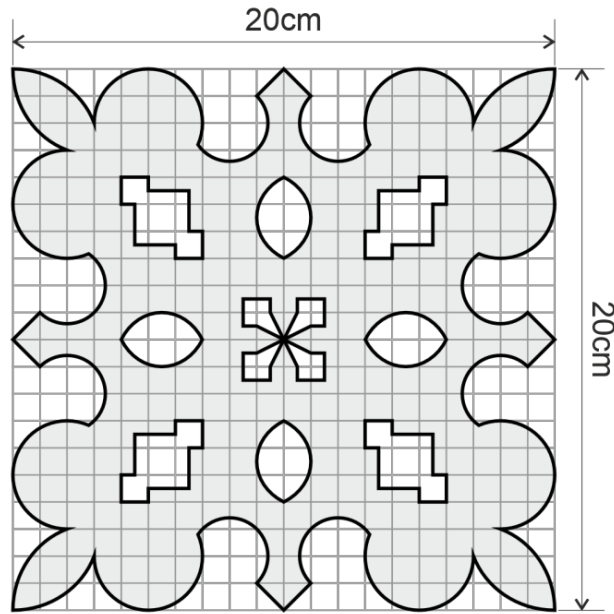

PATTERN
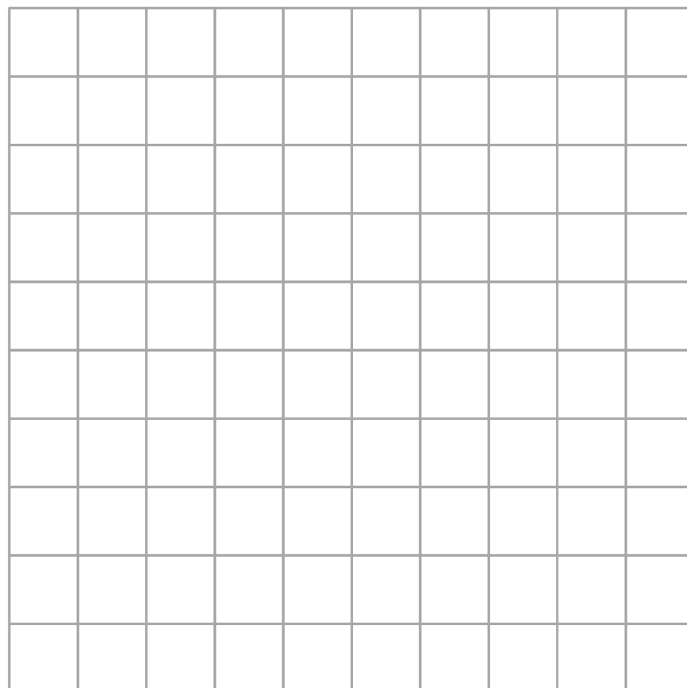
Q.6   *A silhouette of an object is a dark shape showing only the outline of the object. The details of form within the outline shape are not visible.*
       Given below are the silhouettes of an object viewed from top, front and right side, respectively, in orthographic projection. Draw the isometric view of the solid in the given grid.

TOP
SILHOUETTE

FRONT
SILHOUETTE

RIGHT SIDE
SILHOUETTE
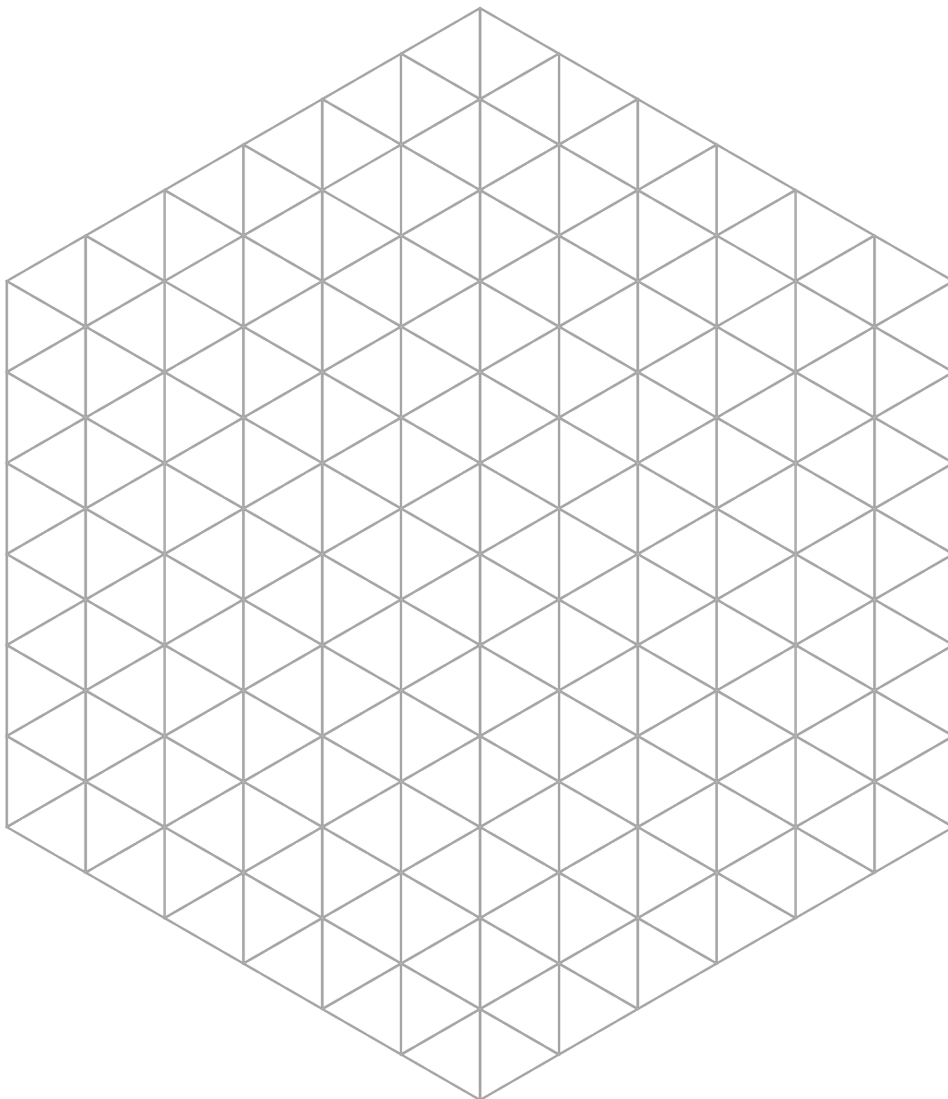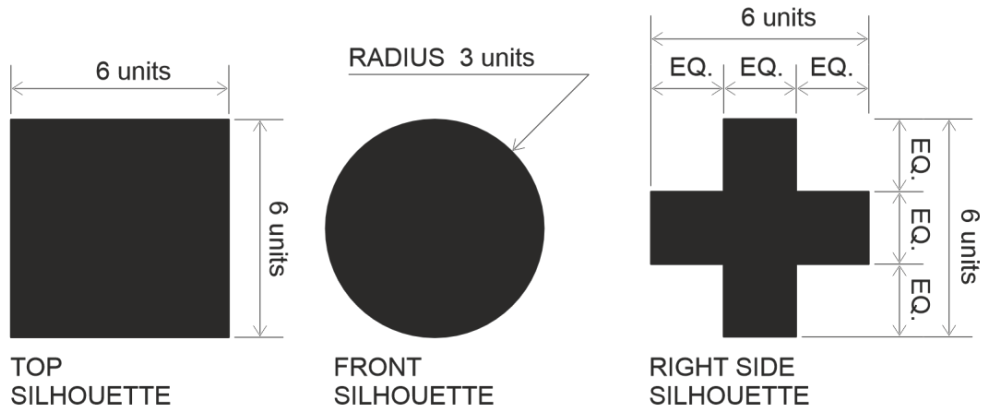
Q.7   *The 'example' figure shows the direction of light and the resultant shadow of a thin, solid, vertical metal plate 'M' cast on the horizontal plane.*
   *Below that, the figure shows a star-shaped, solid metal plate, fixed with iron wires to a vertical, hollow, metal frame. The direction of light is also indicated. Using the projection principle shown in the 'example', draw the shadow of this object on a similar horizontal plane.*
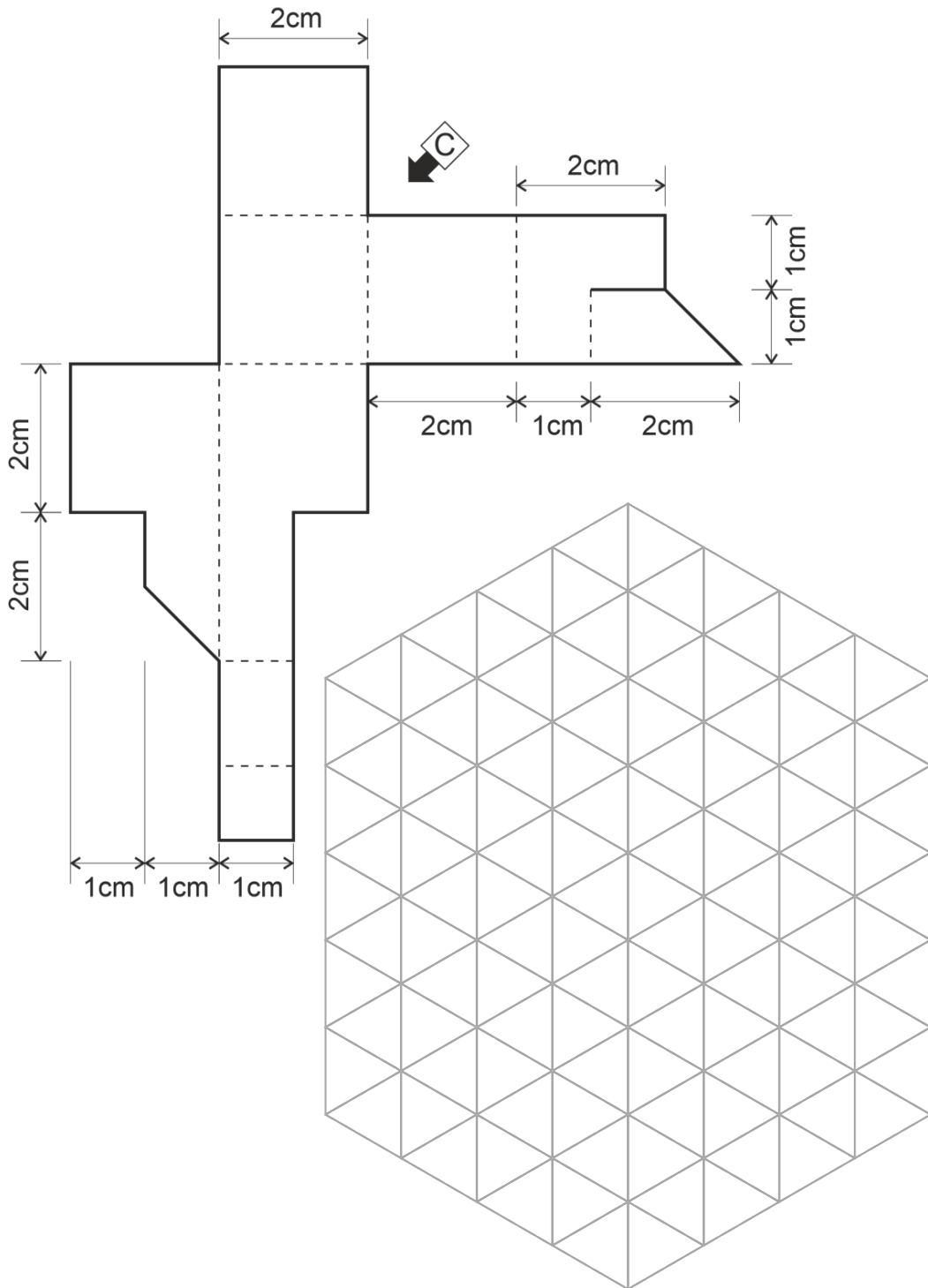

EXAMPLE
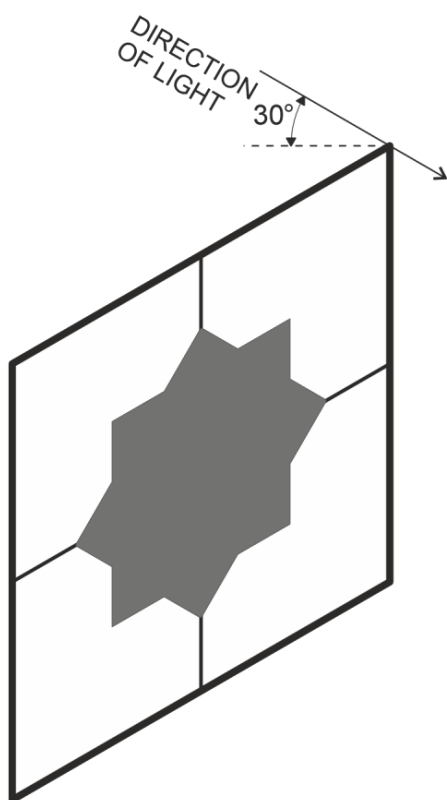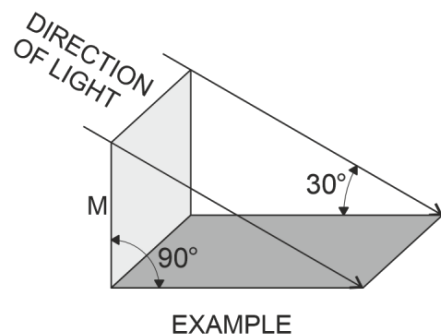
SECTION C: 3D Perception (Maximum Marks: 60)

- This section contains **THREE (03)** questions. Each question carries **20** marks.

Q.8   *The following figures show the plan of an object, and its isometric views from front (view from A) and rear (view from B). Draw the sectional elevation as viewed from the section plane X-X' in the grid provided below (consider each unit of the grid measures 1cm x 1cm).*

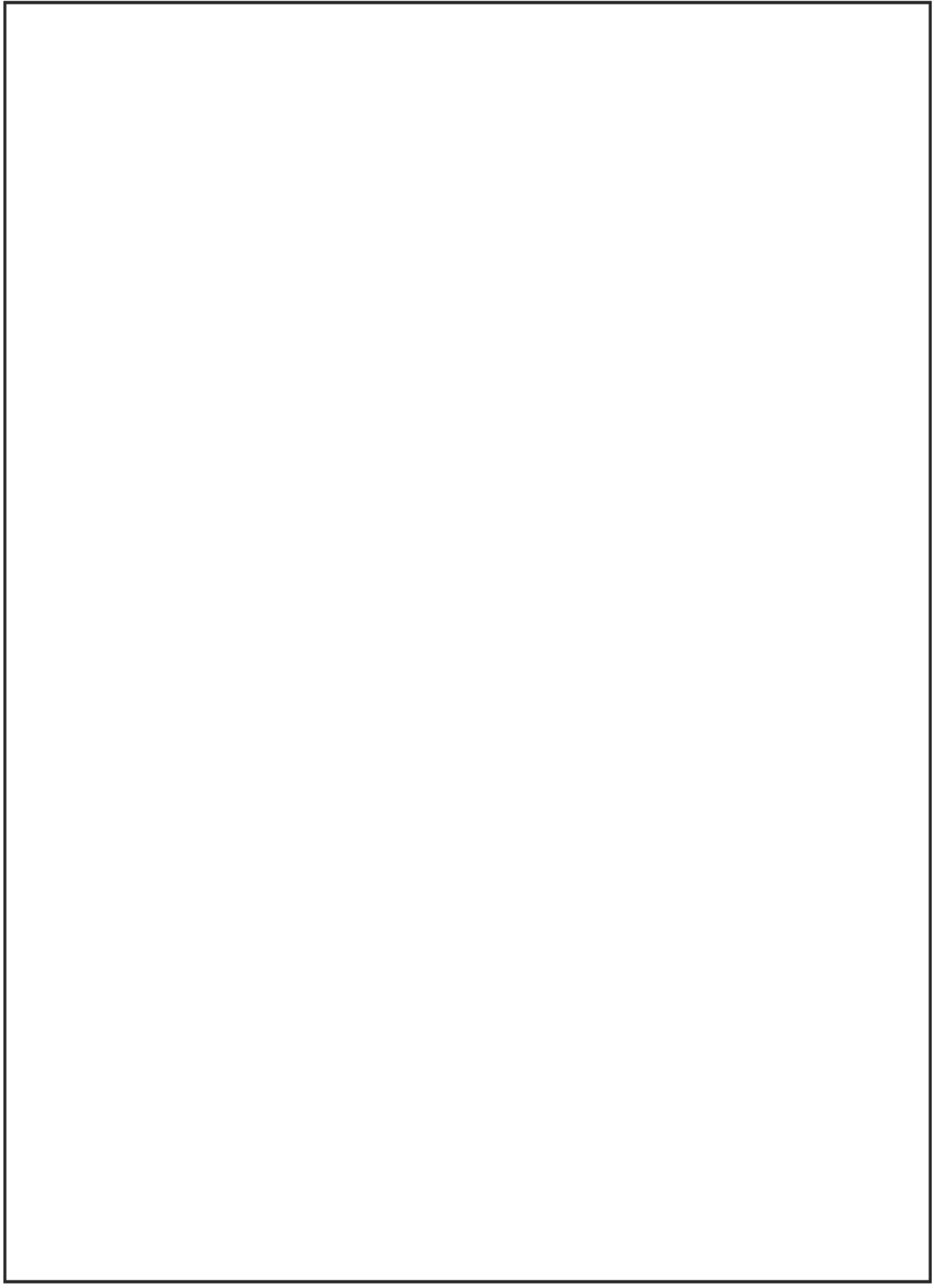PLAN   VIEW FROM A   VIEW FROM B
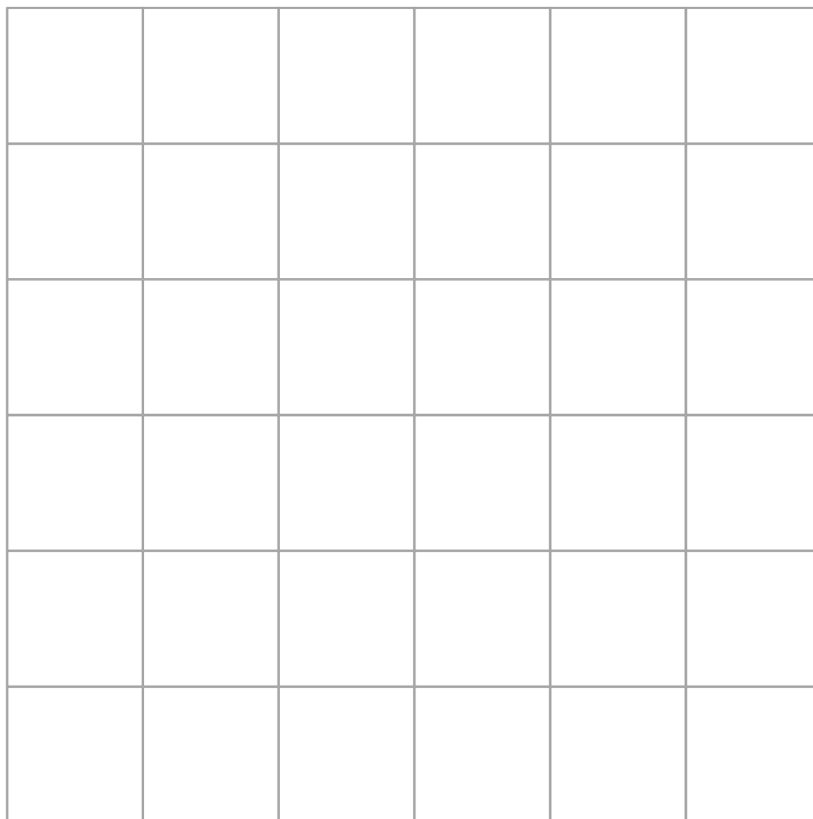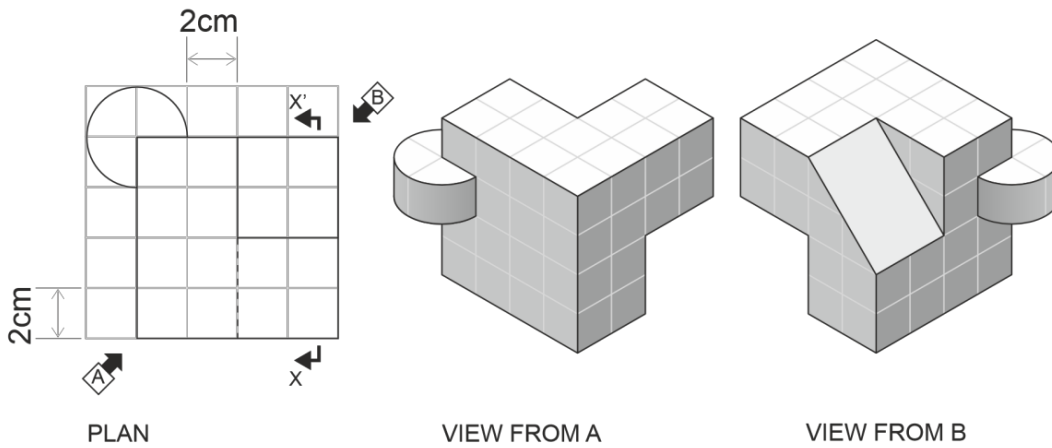
Q.9   *The surface development of a three dimensional object is given in the figure below. The dashed lines represent folds, while the firm lines represent cuts. Draw the isometric view of the object as viewed from 'C' in the isometric grid given below.*
       (*Consider each unit of the grid measures* 1cm x 1cm.)

Q.10   *The figure below shows a structure that has identical elevation on all 4 sides. The typical elevation of the structure and its sectional plan at 'X' is given in the figure.*
Draw the perspective view of the structure from an observer's location as marked in elevation and plan. Draw your solution in the space provided in page 17.

ELEVATION

OBSERVER

SECTIONAL PLAN AT X

OBSERVER
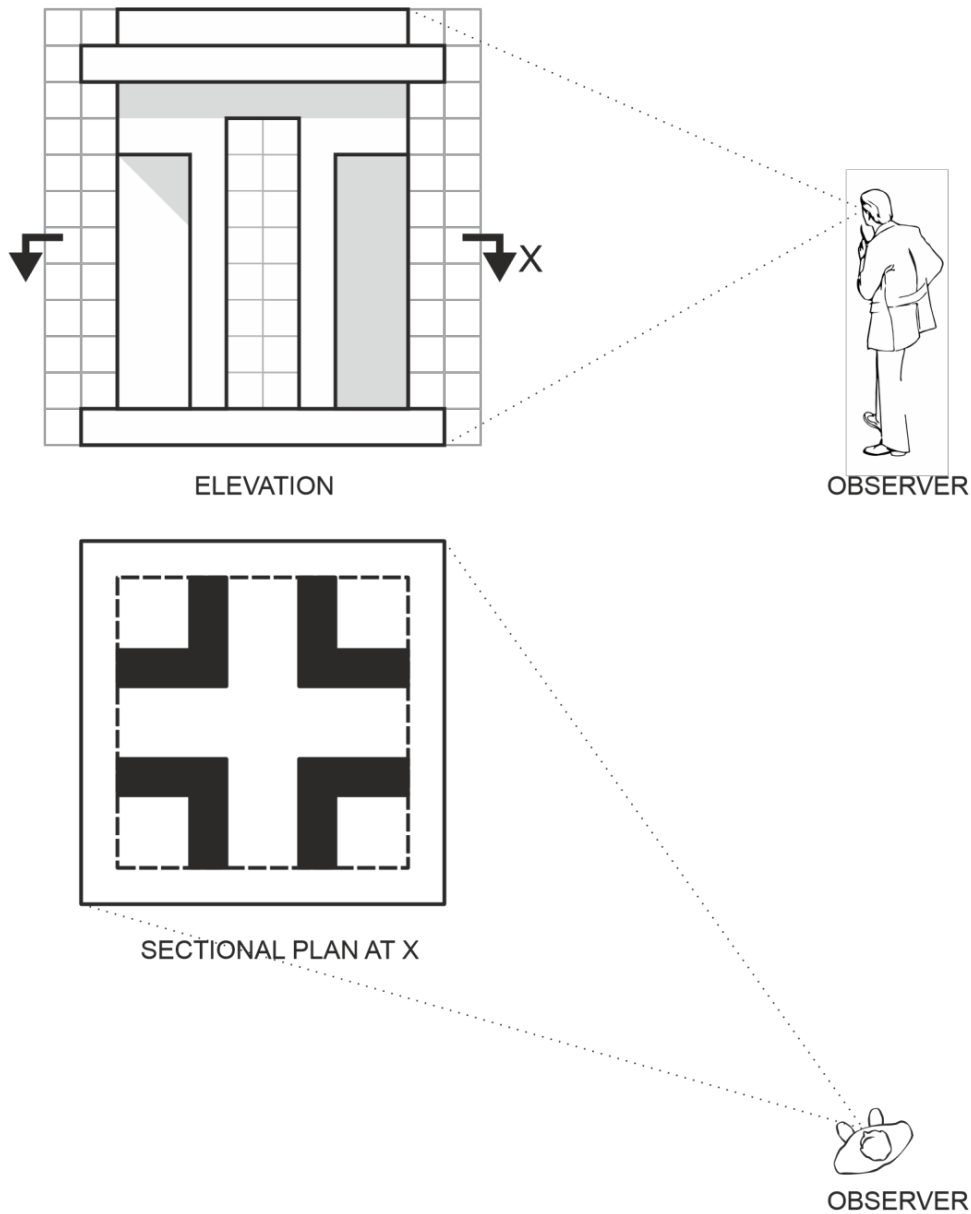
Space for solution of Q.10

SECTION D: Imagination and Aesthetic Sensitivity (Maximum Marks: 60)

- This section contains **THREE (03)** questions. Each question carries **20** marks.

Q.11   *The diagram provided below depicts the elevation of a bag to be given as a memento for the participants attending an event. The title of the event is:*

"Janajaati Gaurav Divas, 2023: Empowering tribal communities"

Considering the theme of the event, compose an artwork on the conference memento bag, to depict tribal lives and their spaces. Use pencil or pen to develop your artwork. Colouring is optional.

Janajaati Gaurav Divas 2023
Empowering tribal communities

Q.12   *The figure below is a floral, decorative pattern traditionally called Kolam/Rangoli that is often used during festive seasons across India. You are required to colour the given pattern using appropriate festive colours.*
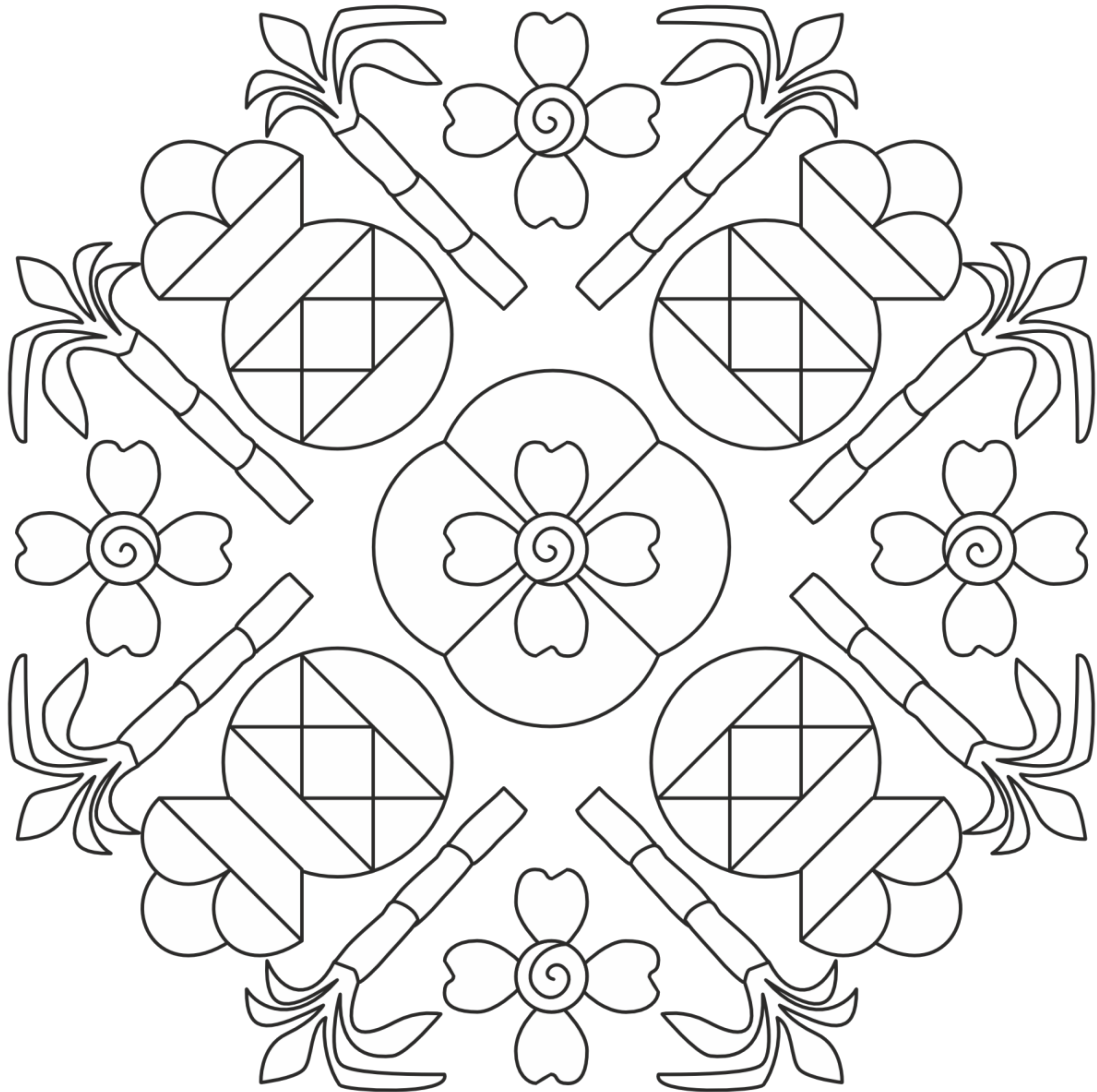
Q.13   *A tech startup is launching new solar panels to be marketed under the brand name 'SOLARIS'.*
        Design a graphic for their logo in the grid given below. Develop the logo based on simple
   *geometric shapes and use appropriate colours.*
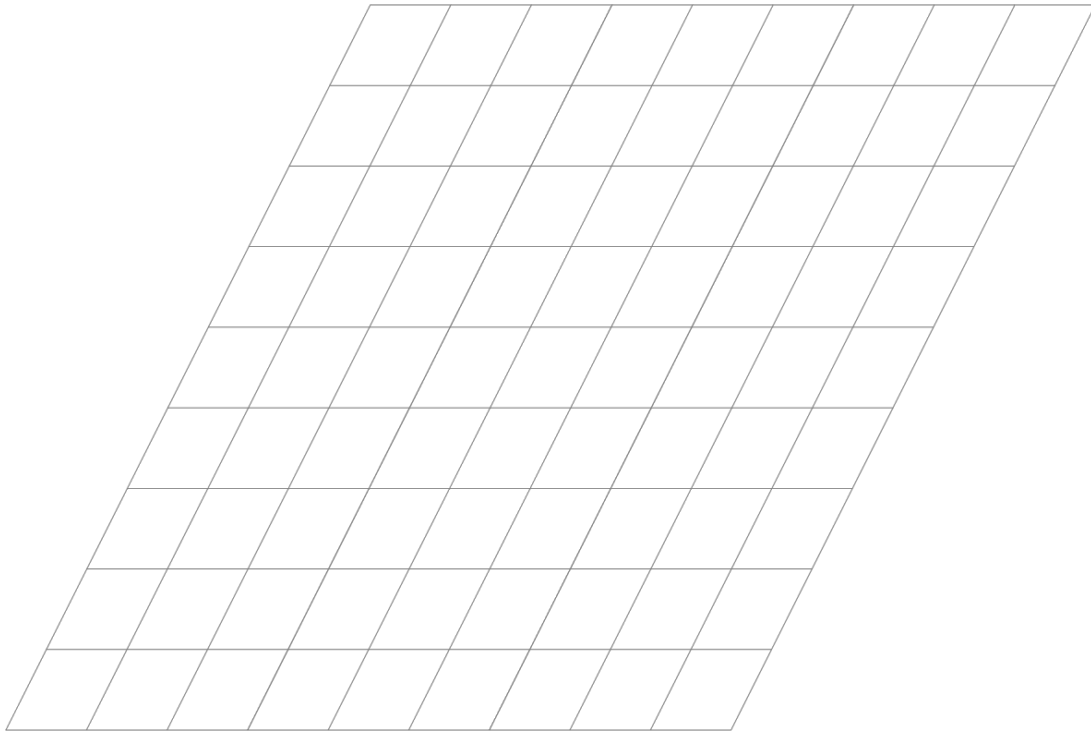
SECTION E: Freehand Drawing (Maximum Marks: 60)

- This section contains **THREE (03)** questions. Each question carries **20** marks.

Q.14   *In the space provided below, make a pencil sketch of an Electric Kettle, in its appropriate form and proportion, showing various parts, materials and textures, using shades and shadows.*

Q.15   *In the space provided below, use the reference lines to make a pencil sketch of an interior perspective view of a kitchen. Include various components relevant to a kitchen, in appropriate scale and proportion.*
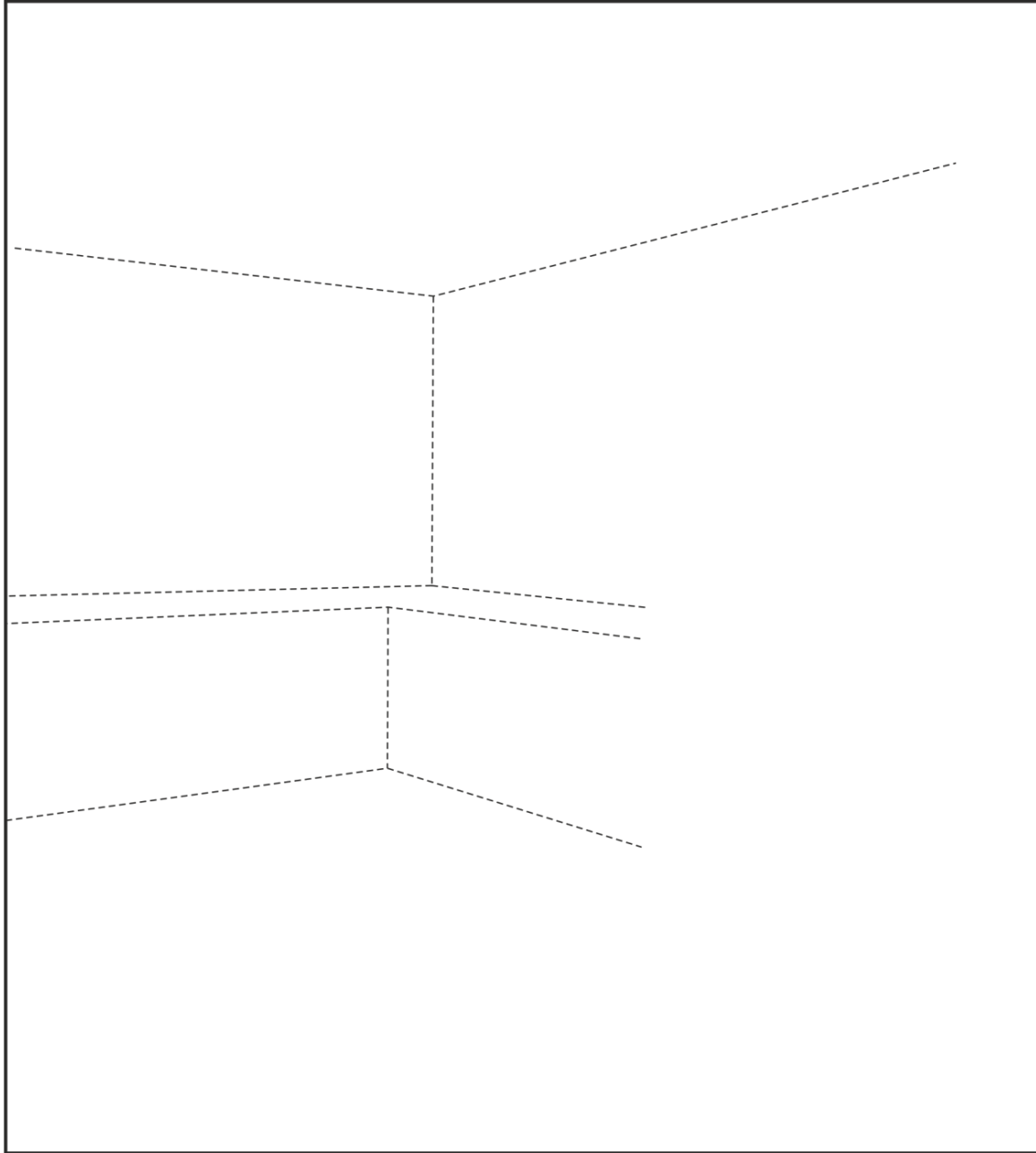
Q.16   *In the space provided below, draw a freehand pencil sketch of a children's playground, depicting various play equipment being used by children, in appropriate scale and proportion.*
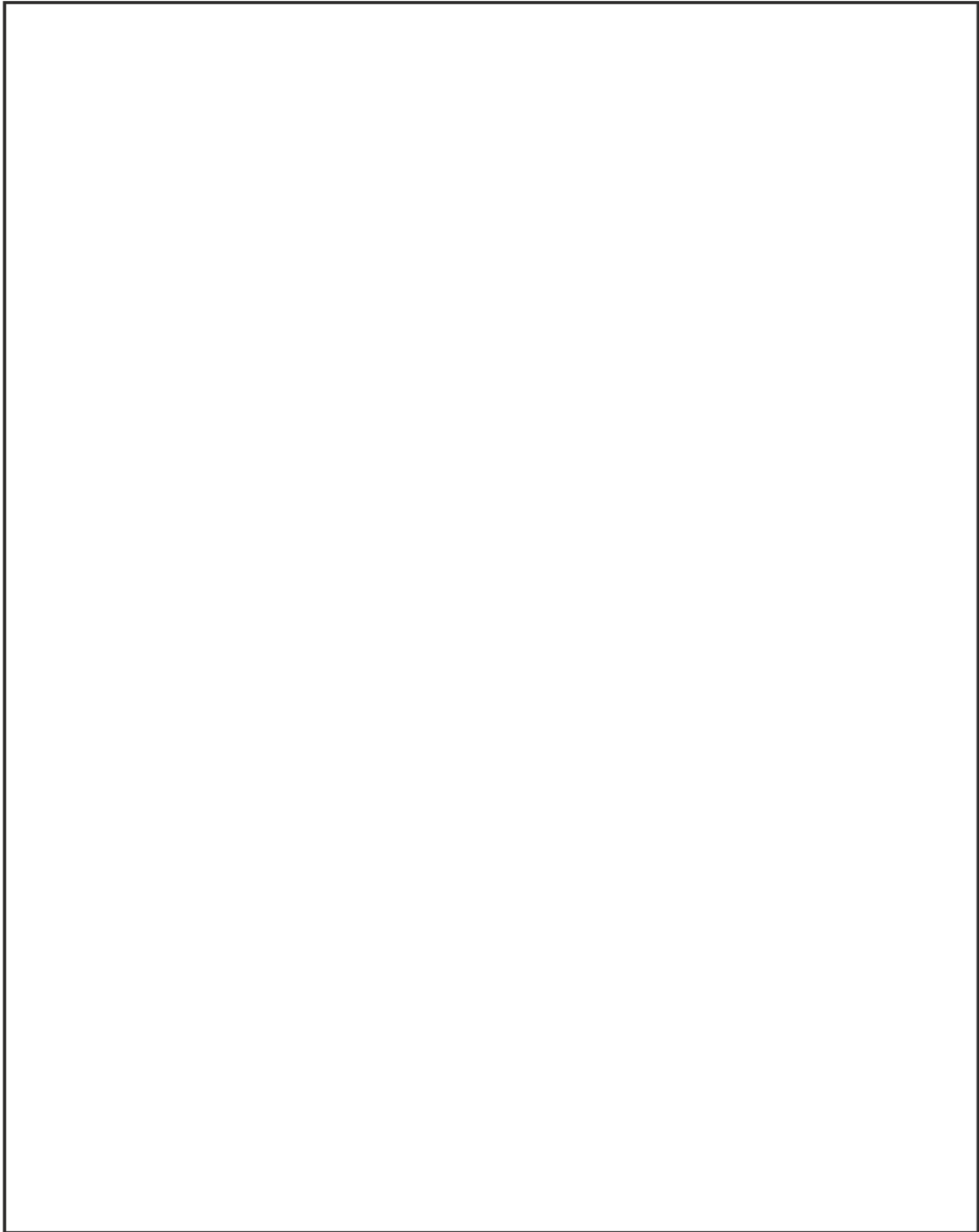
END OF THE QUESTION PAPER

ROUGH WORK

ROUGH WORK

ROUGH WORK

ROUGH WORK

DO NOT WRITE ON THIS PAGE

Section-wise Distribution of Marks

Sections	Question No.	Page No.	Maximum Marks	Marks Obtained
Section A (Architectural Awareness)	Q. 1	03-08	30	
	Q. 2	09	10	
	Q.3	10	10	
	Q.4	10	10	
Section B (Geometrical Drawing)	Q.5	11	20	
	Q.6	12	20	
	Q.7	13	20	
Section C (Three Dimensional Perception)	Q.8	14	20	
	Q.9	15	20	
	Q.10	16-17	20	
Section D (Imagination and Aesthetic Sensitivity)	Q.11	18	20	
	Q.12	19	20	
	Q.13	20	20	
Section E (Freehand Drawing)	Q.14	21	20	
	Q.15	22	20	
	Q.16	23	20	
TOTAL MARKS			**300**	