

# GEOMETRICAL AND MECHANICAL DRAWING

U5000148

**Maximum Marks: 80**

**Time Allotted: Three Hours**

**Reading Time: Additional Fifteen minutes**

## **Instructions to Candidates**

1. You are allowed an **additional fifteen minutes** for **only** reading the question paper.
2. You must **NOT** start writing during reading time.
3. This question paper has **6 printed pages**.
4. Candidates are required to attempt all questions from **Section A** and all questions **EITHER** from **Section B OR Section C**.
5. All dimensions are in millimeters.
6. Arcs of circles less than 4mm radius may be drawn freehand.
7. The intended marks for questions are given in brackets [ ].

## **Instruction to Supervising Examiner**

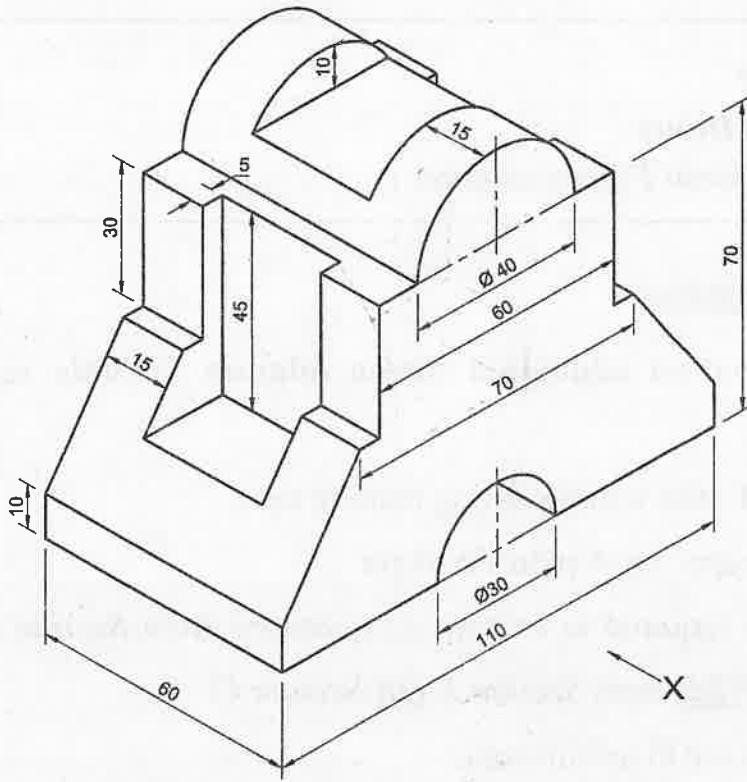
1. Kindly read **aloud** the Instructions given above to all the candidates present in the examination hall.

## SECTION A – 25 MARKS

### Question 1

[25]

**Figure 1** given below shows a machine block. Draw the Front View, Top View and Side View by using first or third angle method of projection. Also, draw the symbol of method of projection which you have chosen.



**Figure 1**

## SECTION B – 55 MARKS

### Question 2

**Figure 2** shows the details of the components of a drill jig used for mass production of any object with a circular hole in it, having diameter 22mm.

The centre plate (part 2, qty. 1) is placed above the base plate (part 1, qty. 1) after aligning their mid points symmetrically. The end brackets (part 3, qty. 2) are placed from left and right ends of the centre plate (part 2, qty. 1).

The hexagonal nut (part 4, qty. 2) and bolt (part 5, qty. 2) are used to fit both the end brackets and the centre plate (part 2, qty. 1) from left and right ends. The screw (part 6, qty. 2) is fitted through the cavities of the base plate (part 1, qty. 1) and the two end brackets (part 3, qty. 2)

(i) Draw full size sectional elevation along A-B of the assembled components. [25]  
 (ii) Draw the plan (Top View) of the complete assembly omitting all hidden details. [10]  
 (iii) Draw the Left-hand Side View of the assembly omitting all hidden details. [10]  
 (iv) Make a neat parts list for all the components on your drawing sheet. [10]

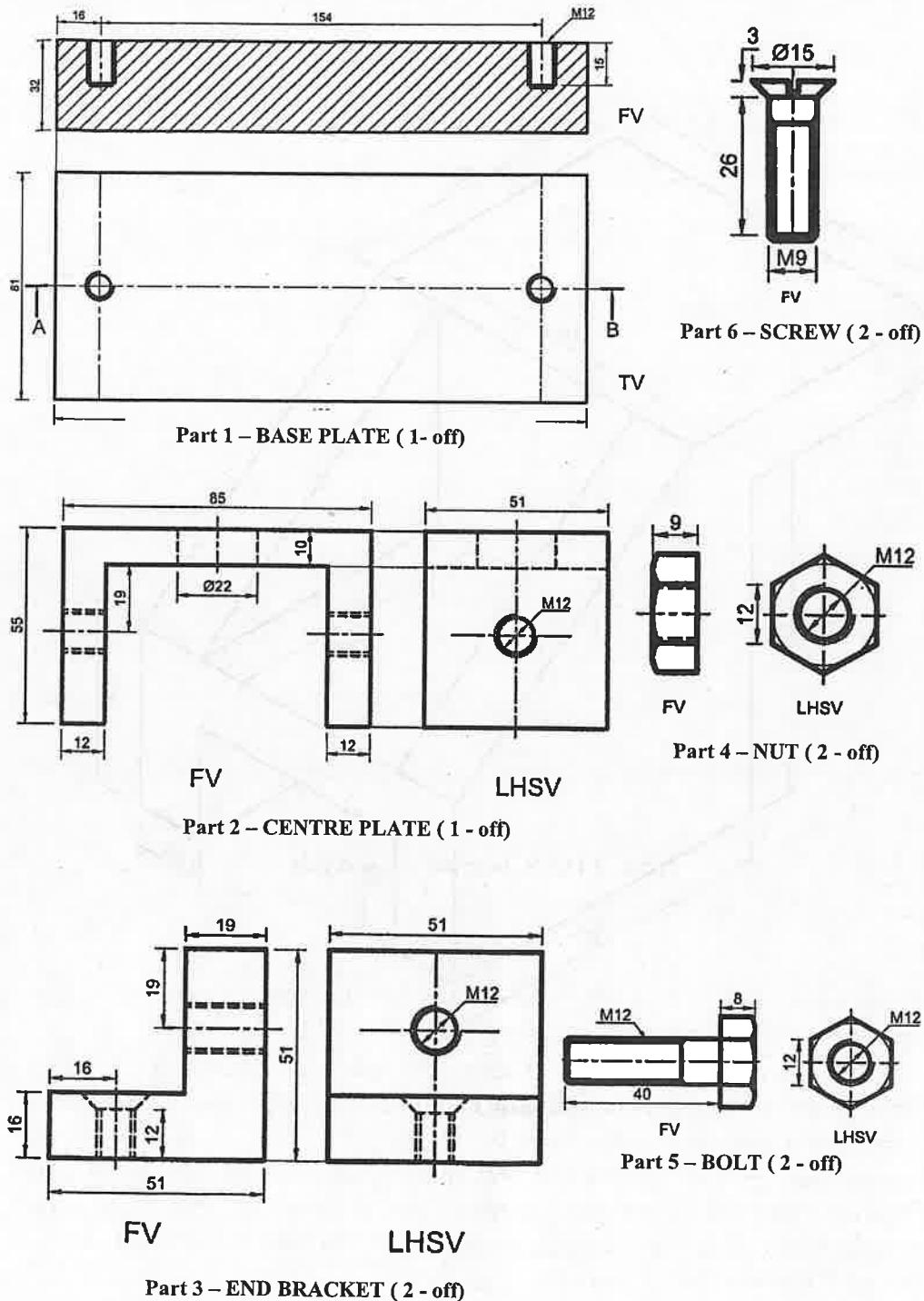
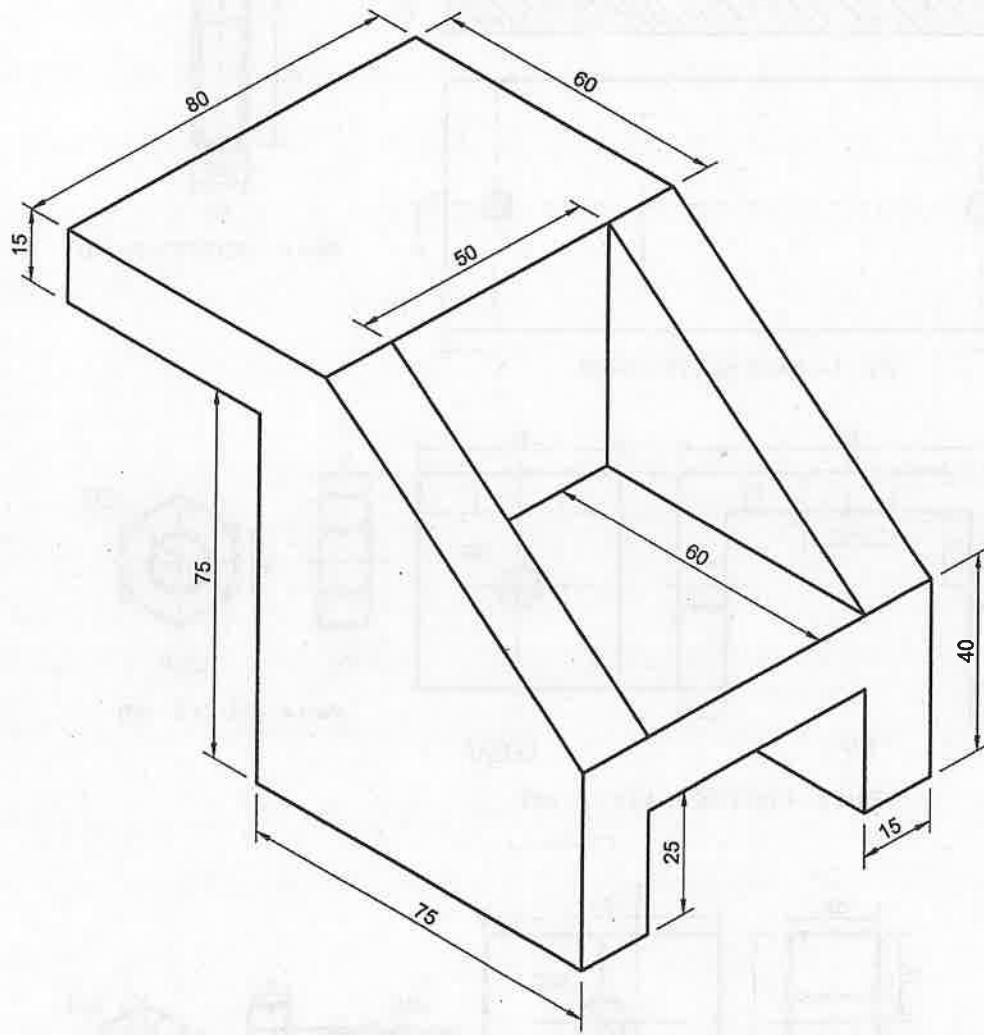


Figure 2

## SECTION C – 55 MARKS

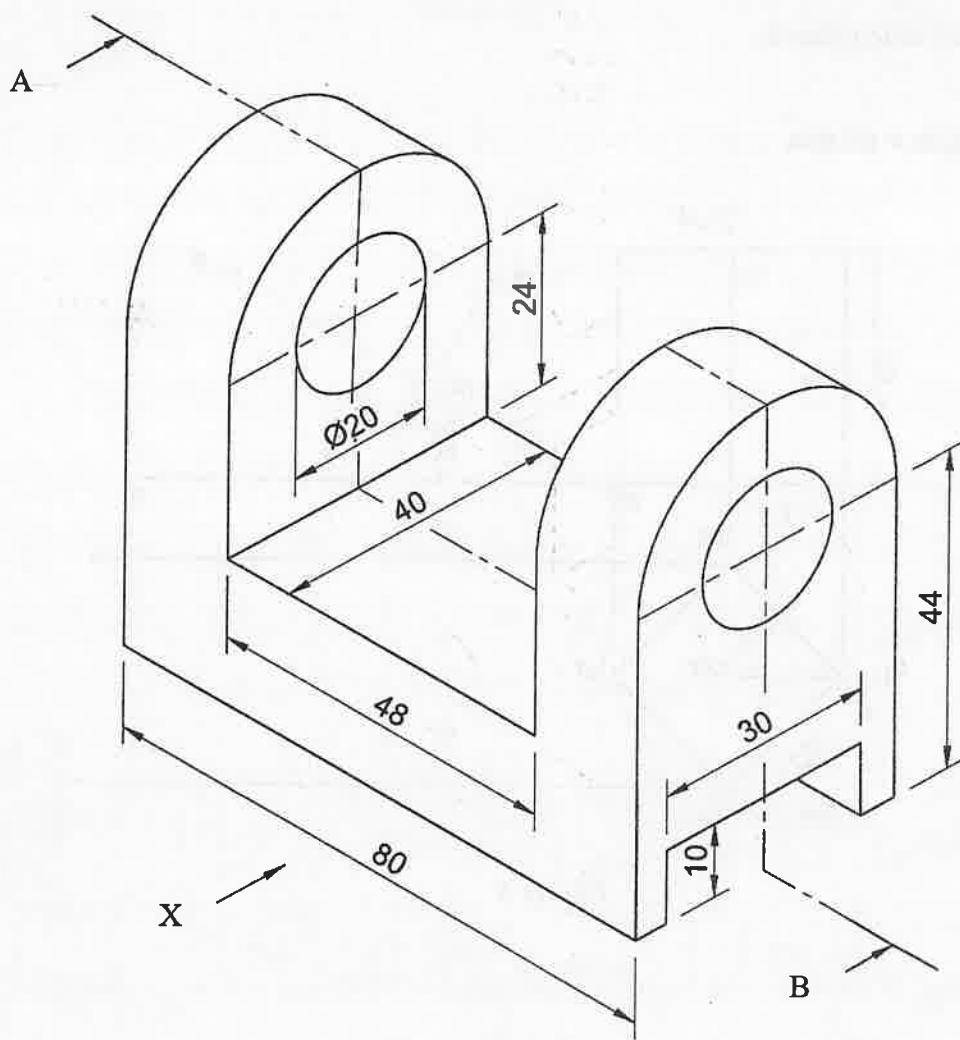
### Question 3

(i) **Figure 3** given below shows the isometric view of a machine block. Copy the [20] isometric view.



*Figure 3*

(ii) **Figure 4** given below shows the machine block. Draw Sectional Front View [20] (along A-B) and Top View by using first or third angle method of projection.



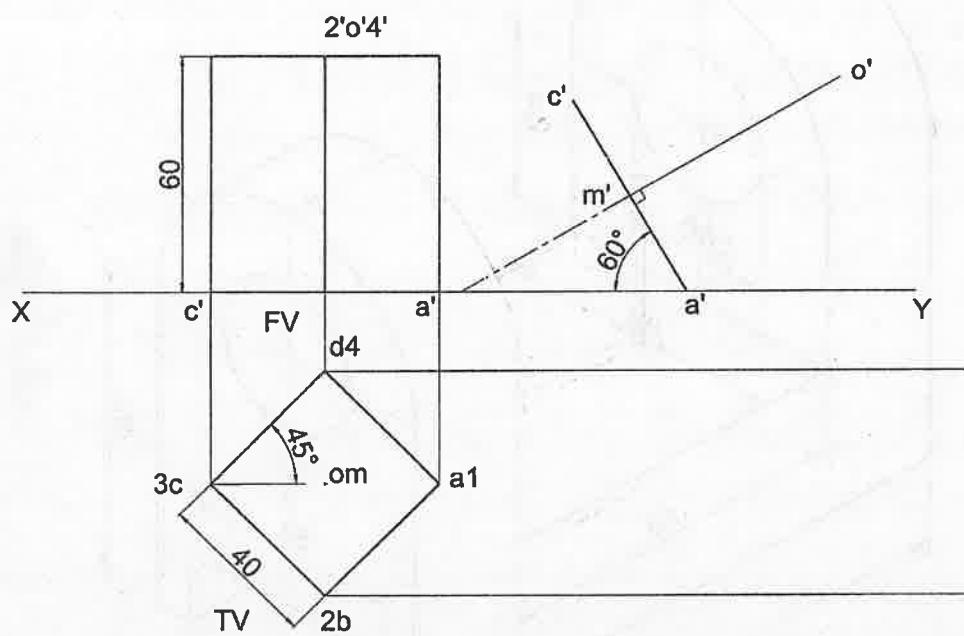
**Figure 4**

(iii) **Figure 5** given below shows the Top View of a square base prism in first angle, [15] method of projection. Copy the given figure. Draw the Front View and Top View if the axis of the prism is inclined at  $30^\circ$  to Horizontal Plane and Top View of the axis is inclined at  $45^\circ$  to Vertical Plane.

Omit the hidden details.

Given:

Axis height = 60 mm



*Figure 5*