# GEOMETRICAL AND MECHANICAL DRAWING

*Maximum Marks: 80*
*Time Allowed: Three hours*

Candidates are allowed **additional 15 minutes** for **only** reading the paper.

They must **NOT** start writing during this time.

All dimensions are in millimeters.
Arcs of circles less than 4mm radius may be drawn freehand.

Candidates are required to attempt all questions from **Section A** and all questions
**EITHER** from **Section B OR** Section C.

The intended marks for questions or parts of questions are given in brackets [ ].

## 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
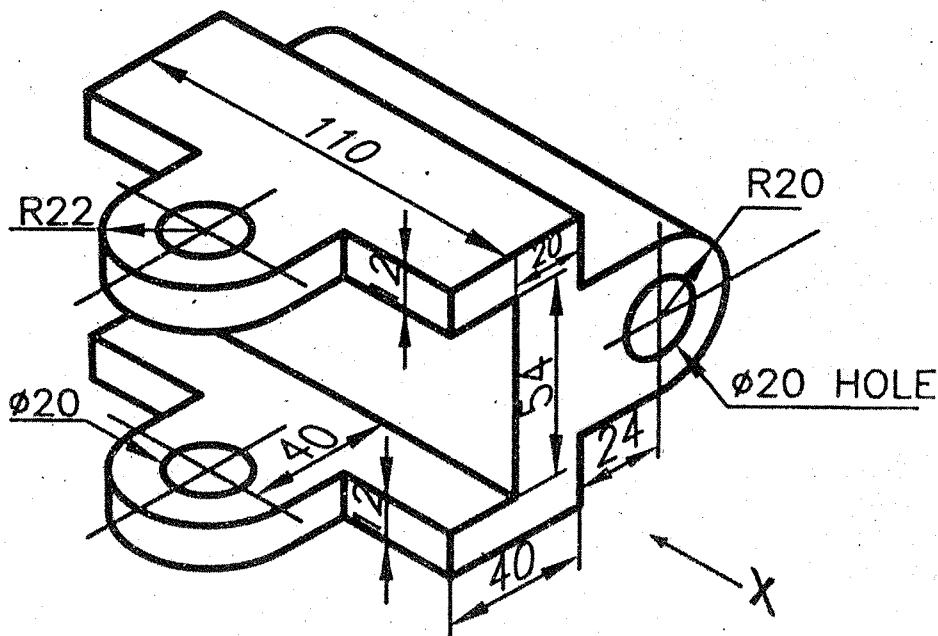symbol of method of projection which you have chosen.



*Figure 1*

## Question 2

(i)   *Figure 2* given below shows the details of the components of a C-clamp assembly used for holding a wood or a metal workpiece.

The screw (part 2, qty. 1) is passed through the hole in the main body (part 1, qty. 1). The moveable jaw (part 3, qty. 1) is fastened at the lower end of the screw (part 2, qty. 1). The screw (part 2, qty. 1) can be moved upwards or downwards by using the handlebar given at the top of the screw.

(a)   Draw full size sectional elevation along A-B of the assembled components.   **[25]**

(b)   Draw the plan (Top View) of the complete assembly omitting all hidden details.   **[10]**

(c)   Draw the Left-hand Side View of the assembly omitting all hidden details.   **[10]**

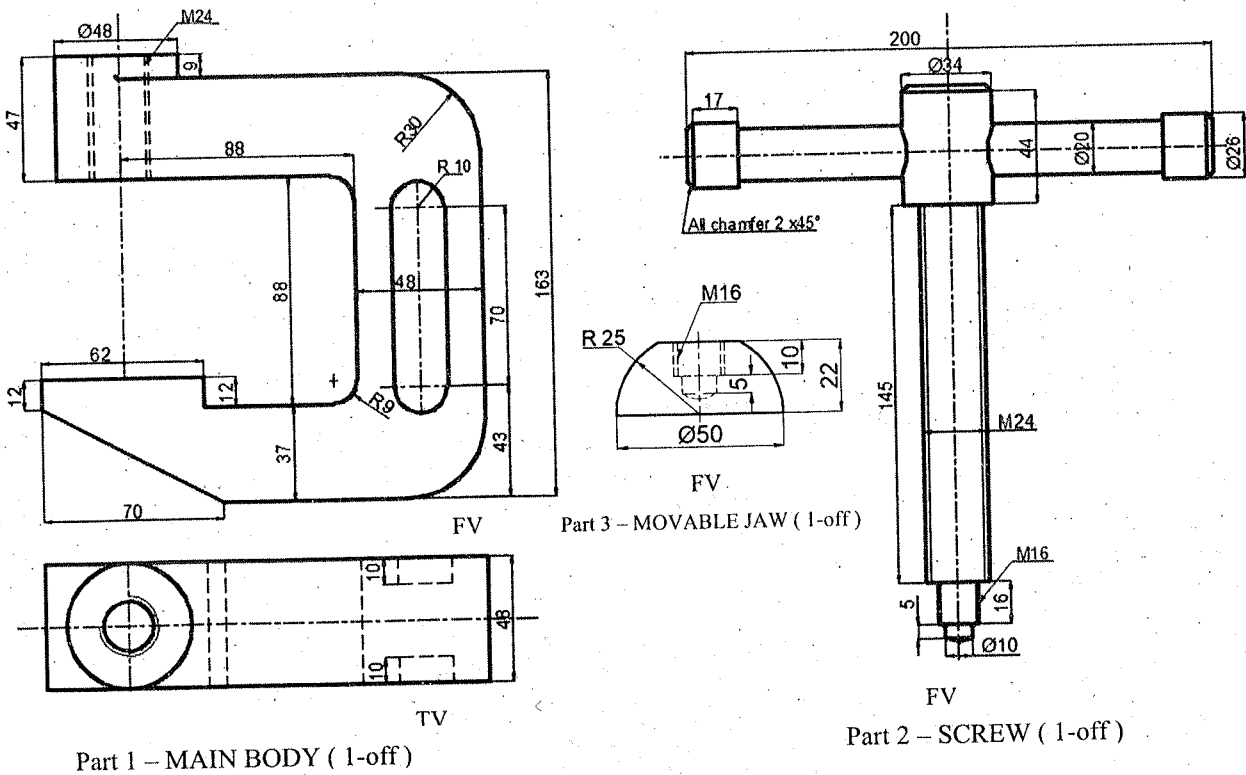(d)   Make a neat parts list for all the components on your drawing sheet.   **[10]**



Part 1 – MAIN BODY ( 1-off )

Part 3 – MOVABLE JAW ( 1-off )

Part 2 – SCREW ( 1-off )

*Figure 2*

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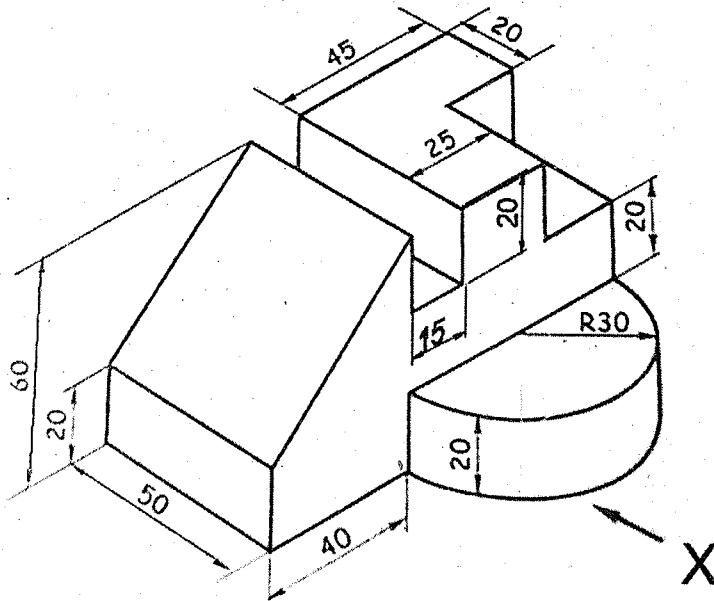the isometric view.



*Figure 3*

**Turn over**

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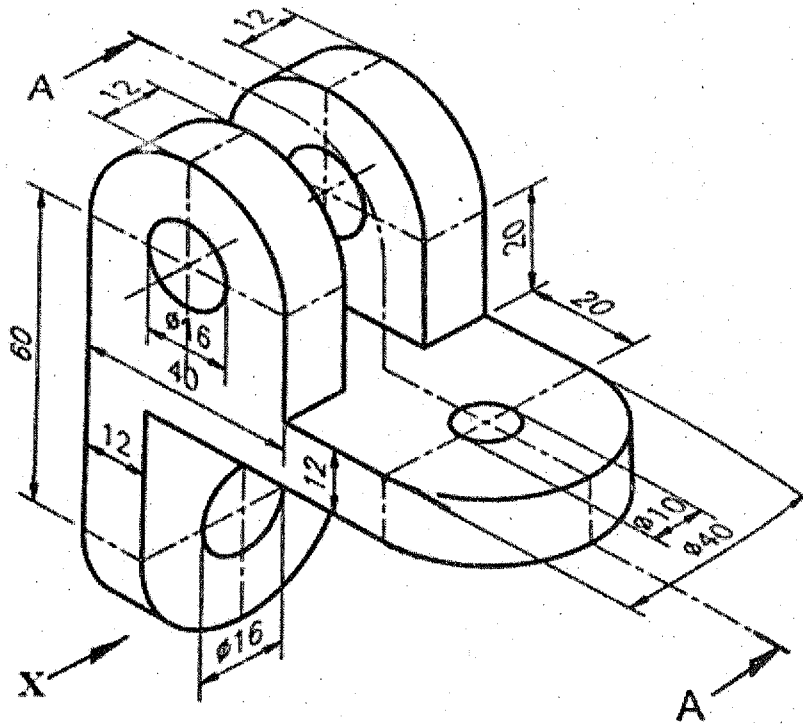


*Figure 4*

(iii)   *Figure 5* given below shows the Top View of a square base pyramid in first **[15]** angle method of projection. Copy the given figure. Complete the Front View and draw the Front View and Top View if the axis of the pyramid is inclined at 30° to Horizontal Plane and Top View of the axis is inclined at 45° to Vertical Plane.
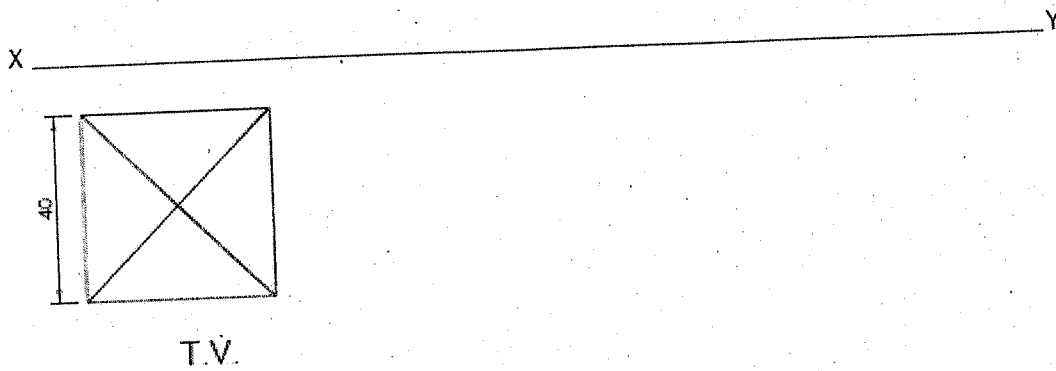
Given:

Axis height = 75mm



Figure 5

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