

21120141

GEOMETRICAL AND MECHANICAL DRAWING

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 the question from **Section A** and all questions ***EITHER*** from **Section B** ***OR*** **Section C**.
5. All dimensions are in millimetres.
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.

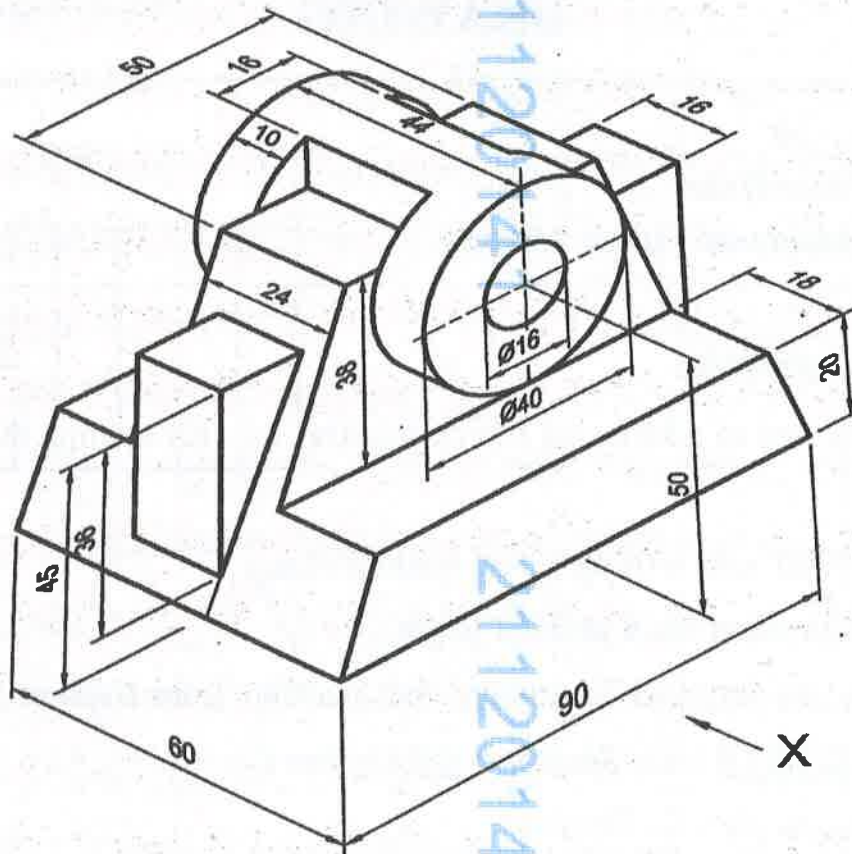


Figure 1

SECTION B - 55 MARKS

Question 2

Figure 2 shows the details of the components of a Tool Post used for clamping any tool for carrying out an operation.

The ring (part 2, qty. 1) is inserted through the main body, that is, the Tool Post (part 1, qty. 1). It is placed on the base of the main body. The ring has an inner spherical groove on which the wedge (part 4, qty. 1) is rested. Once a tool is placed on the wedge (not shown in the drawing), it is tightened by rotating the screw (part 3, qty. 1) inserted through the top of the Tool Post.

- (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]

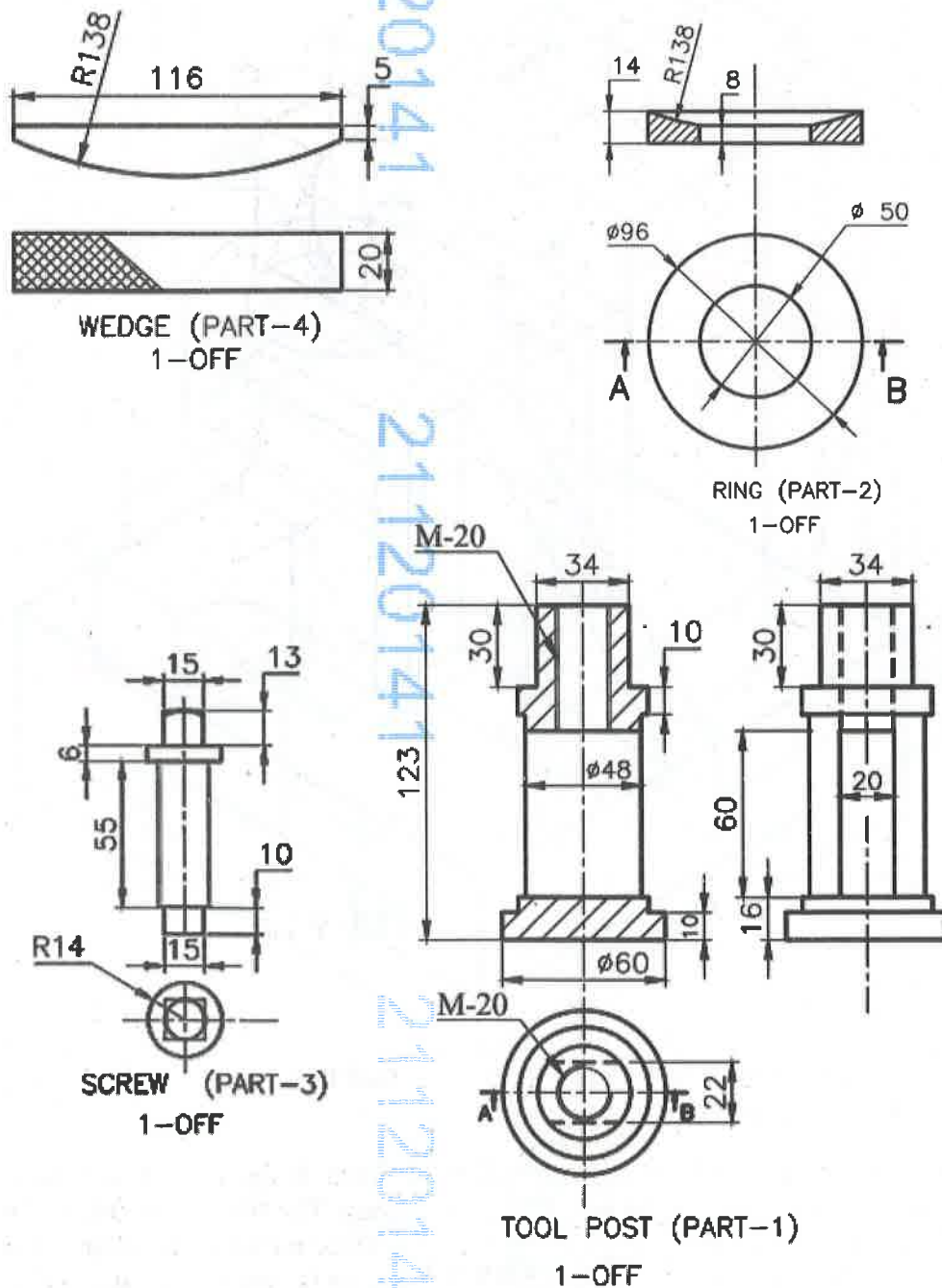


Figure 2

SECTION C – 55 MARKS

Question 3

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

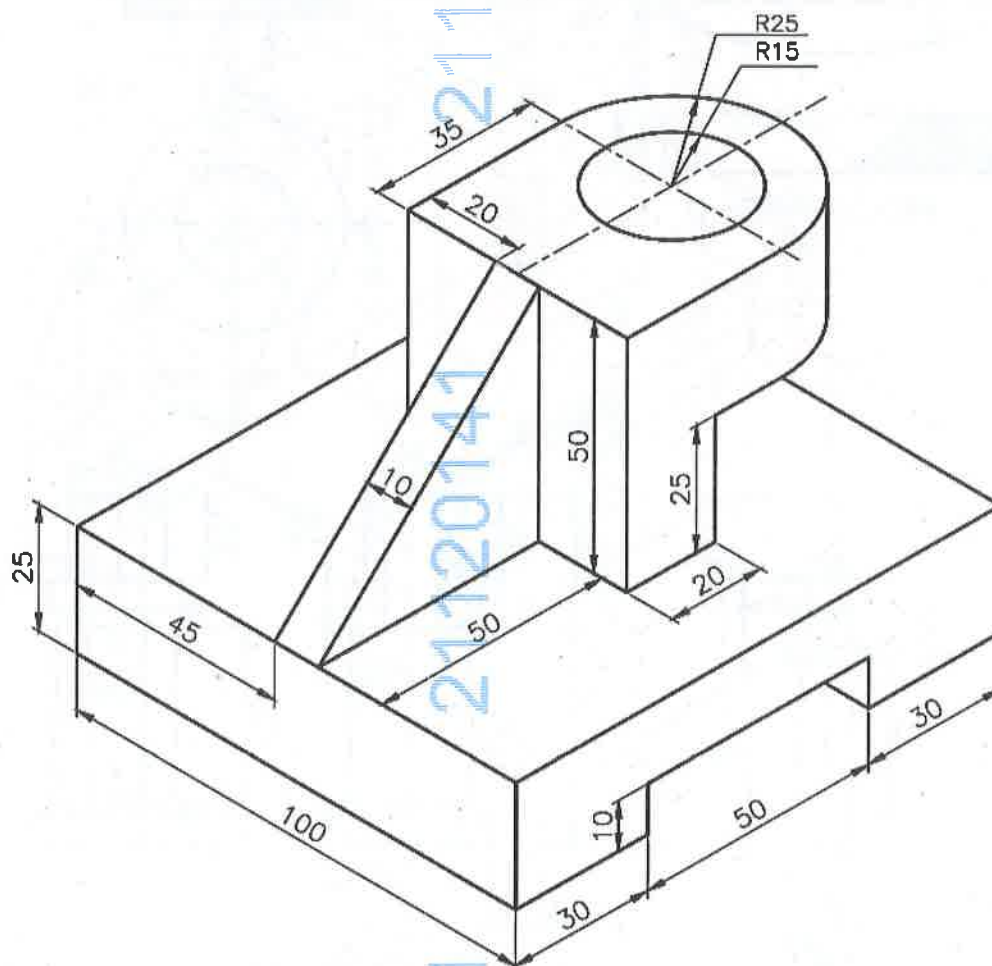


Figure 3

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

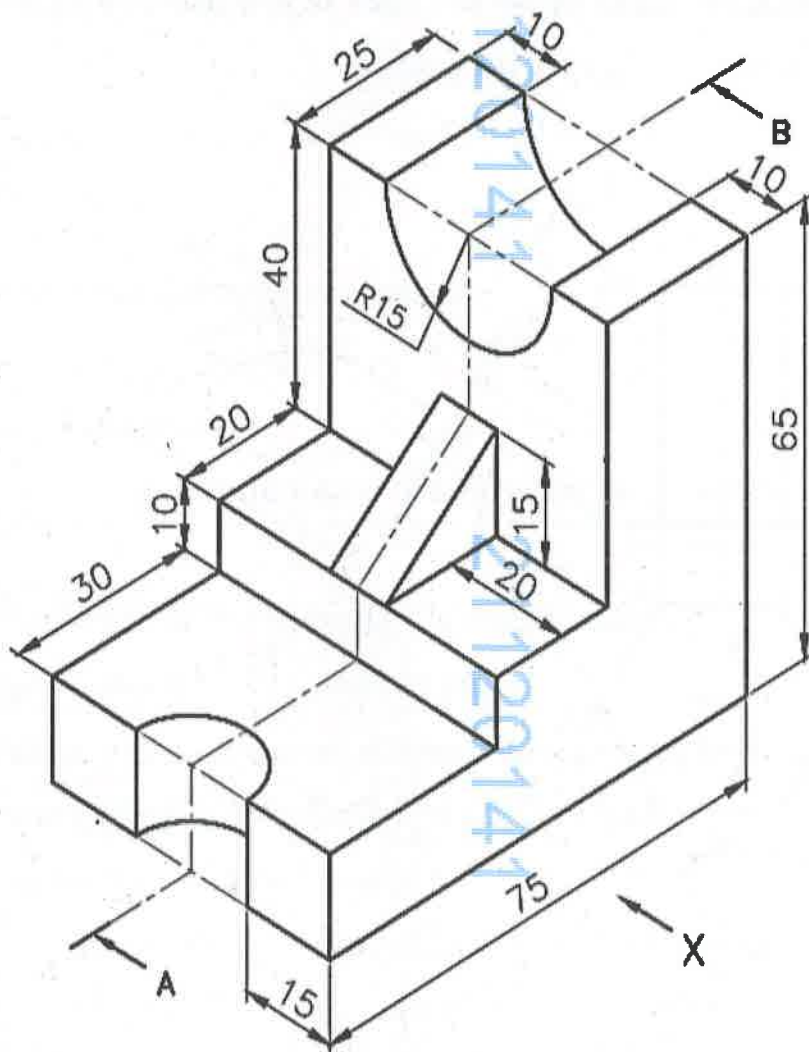


Figure 4

- (iii) **Figure 5** given below shows the Front view and Top View of a hexagonal base prism in first angle method of projection. Copy the given figure. Draw the Front View and Top View if the axis of the prism is inclined at 30° to Horizontal Plane. [15]

Omit the hidden details.

Given:

Axis height = 60 mm

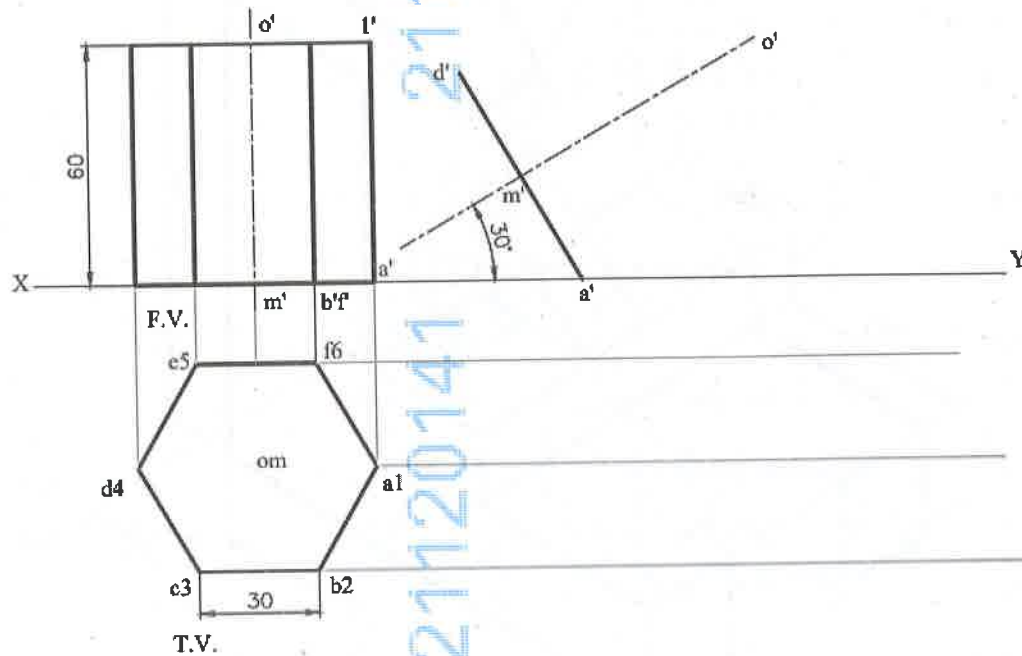


Figure 5