AN ROINN OIDEACHAIS

INTERMEDIATE CERTIFICATE EXAMINATION. 1973

MECHANICAL DRAWING

FRIDAY, 22nd JUNE - MORNING, 9.30 to 12.30

400 marks

INSTRUCTIONS

(a) Not more than five questions may be attempted; one of these must be Question No. 1, Part I. Two must be selected from Section A, Part II, and two must be selected from Section B, Part II.
(b) All questions carry equal marks; a maximum of 12 marks will be awarded for draughtsmanship in respect of each question and a maximum of 20 marks will be awarded for neatness, arrangement and presentation of answer sheets.
(c) The number of the question must be distinctly marked by the side of each answer.
(d) Work on one side of the paper only.
(e) Examination Number must be distinctly marked on each sheet of paper used.
(f) All construction lines must be clearly shown.
(g) All measurements are in millimetres.

PART I

(This question must be attempted)

1. A shaped solid is shown in fig. 1. Make a full size orthographic projection of the solid showing:

(a) an elevation looking in the direction of arrow A,
(b) an end elevation looking in the direction of arrow B,
(c) a plan projected from (a).

PART II

SECTION A

(Answer two questions from this section)

2. A regular pentagonal prism is cut as shown in fig. 2.

(a) Draw the elevation and end elevation full size.
(b) Project a plan from the elevation.
(c) Show the true shape of the sectioned surface A.

3. The elevation, plan and end elevation of a shaped solid are shown in fig. 3.
Draw a full size isometric view of this solid.

OR

3. Using the isometric grid paper provided, make a neat, well-proportioned freehand drawing of the solid shown in fig. 3.

4. Figure 4 shows the elevation and plan of a solid.

(a) Draw the elevation and plan full size.
(b) Project a new elevation on to the new ground line X_1Y_1.
(c) Index the corners of all three views.

5. The elevation, plan and end elevation of a container are shown in fig. 5. The container is open only at the bottom.
Draw a full size development of the container.

SECTION B

(Answer two questions from this section)

6. The design shown in fig. 6 is based on three semi-circles enclosed in a circle. Draw this design full size showing all construction lines.

7. The outline of a lever arm is shown in fig. 7.

(a) Reproduce the outline to the given dimensions.
(b) Show the position of the lever arm when it has been rotated through an angle of 70° in a clockwise direction about the point O.

8. The design shown in fig. 8 contains two semi-ellipses.
Reproduce this design full size, given that the measurements for the lower outline are in the same proportion to the measurements for the upper outline.

9. Two circles with common tangential arcs are shown in fig. 9. The area of circle B is twice the area of circle A.
Construct this figure full size, showing all construction lines.

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AN ROINN OIDEACHAIS

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LÍNÍOCHT MHEICNIÚIL CUID 1 MECHANICAL DRAWING PART 1

FÍOR 1 FIGURE

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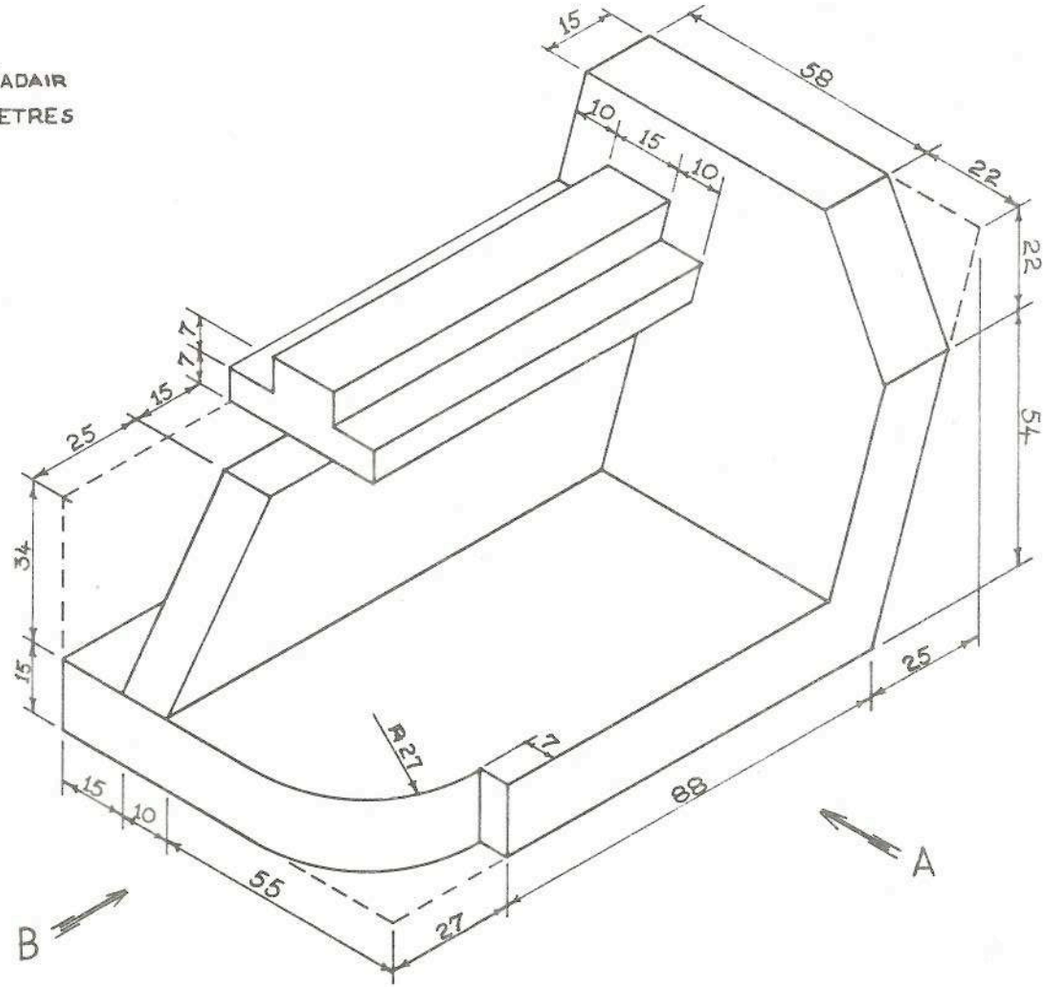
ALL DIMENSIONS IN MILLIMETRES



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CUID 2 —— PART 2

ROINN A —— SECTION A

FIGURE 2 FÍOR

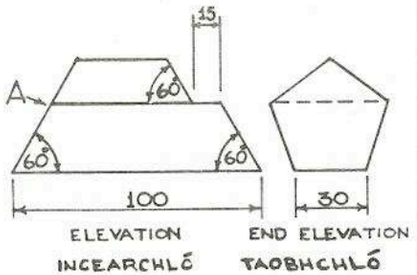


FIGURE 3 FÍOR

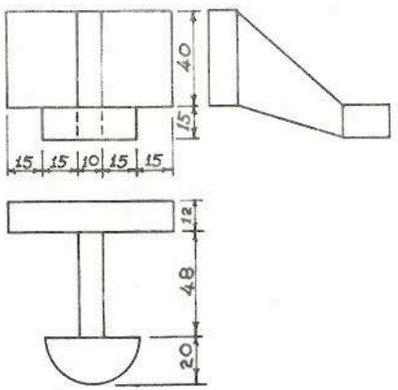


FIGURE 4 FÍOR

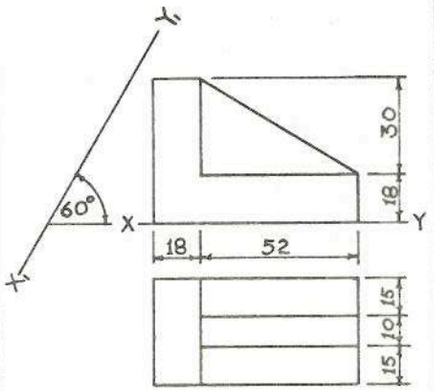
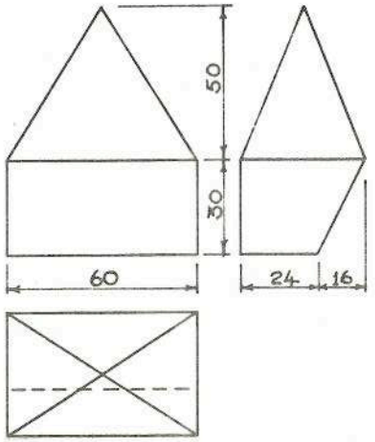


FIGURE 5 FÍOR



ROINN B —— SECTION B

FIGURE 6 FÍOR

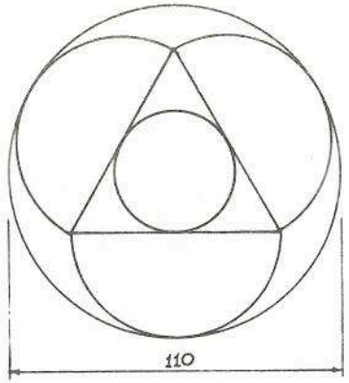


FIGURE 7 FÍOR

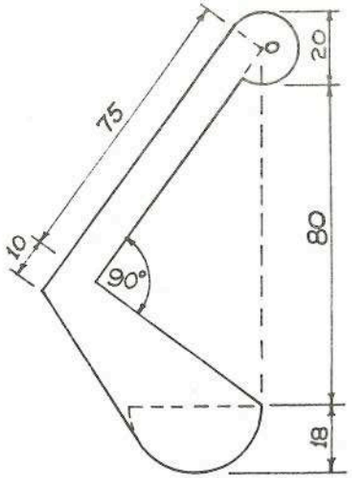


FIGURE 8 FÍOR

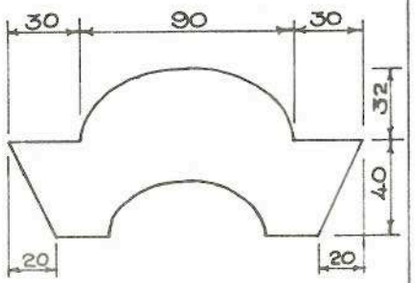


FIGURE 9 FÍOR