AN ROINN OIDEACHAIS

INTERMEDIATE CERTIFICATE EXAMINATION, 1972

MECHANICAL DRAWING

Wednesday, 21st 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.

PART I
(This question must be attempted)

1. Figure 1 represents a shaped solid. Make a full-size orthographic projection of the solid, showing—
   (a) an elevation looking in the direction of arrow X,
   (b) an end elevation looking in the direcrion of arrow Y,
   (c) a plan view projected from (a).

PART II
Section A
(Answer *two* questions from this Section)

2. Figure 2 shows the elevation and plan of a solid.
   (a) Draw full size the given plan and elevation.
   (b) Draw an auxiliary elevation on the new ground-line X₁Y₁.
   The new ground-line is drawn perpendicular to the direction of the arrow A. Marks will be allotted for the correct indexing of the corners in all three views.

3. The elevation and end elevation of a shaped solid are shown in Figure 3. Draw full size an isometric view of the solid with the corner A the lowest corner of your drawing.
   Hidden details need not be shown.

OR

3. Using the isometric grid paper provided, make a neat, well-proportioned, freehand drawing of the solid shown in Figure 3, with corner A the lowest corner of your drawing.
   Hidden details need not be shown.

4. Figure 4 represents the plan and elevation of a sheet-metal duct. It is comprised of a square-based prism, a truncated cone and a cylinder which has been cut by two inclined planes as indicated in the drawing.
   (a) Draw full size the plan and elevation,
   (b) Draw full size a development of the surfaces A and B.

5. Figure 5 shows the elevation of a shaped metal plate. Reproduce the figure to the given dimensions and then rotate it in a clockwise direction through an angle of 50° about the point O.
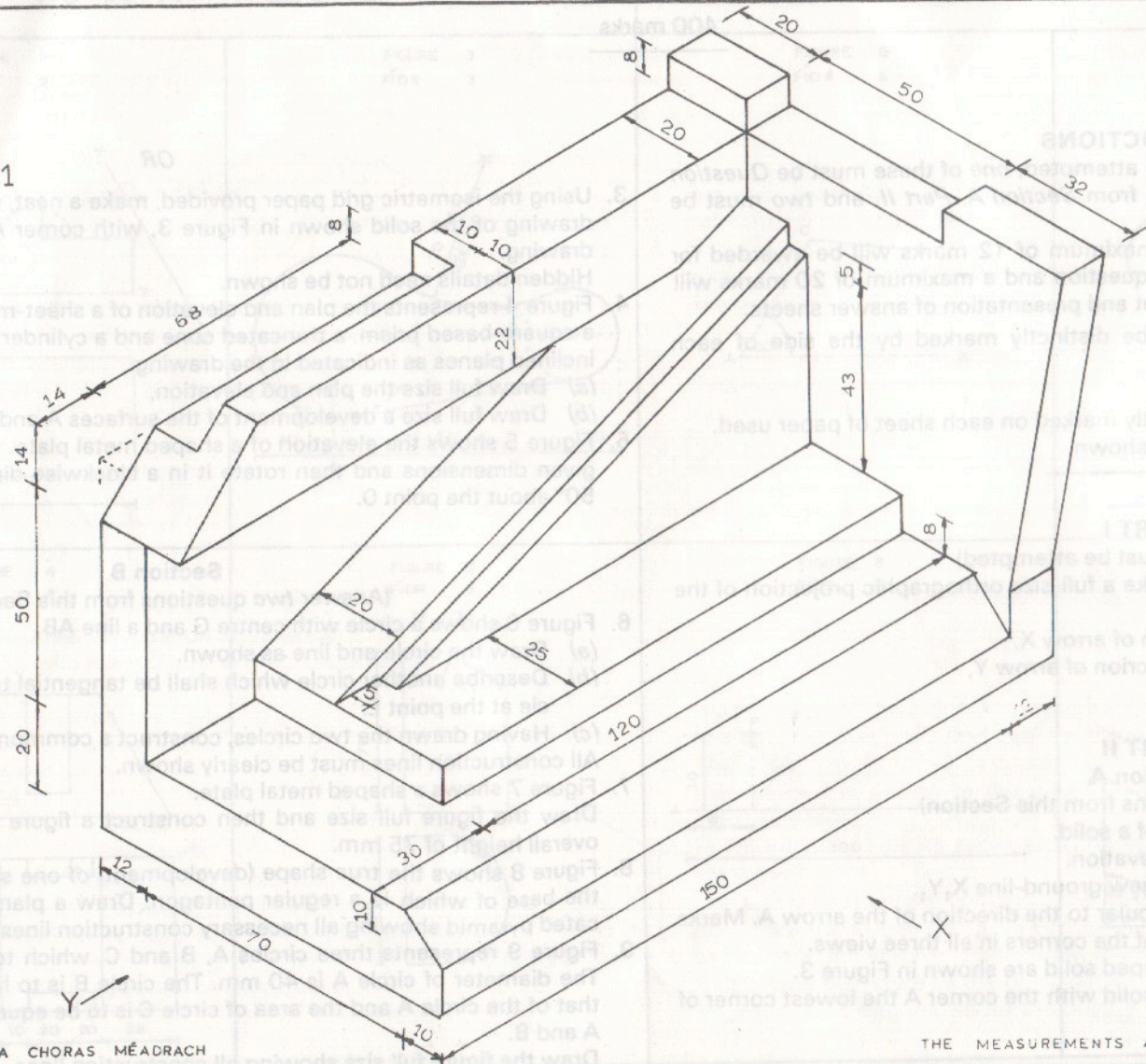
Section B
(Answer *two* questions from this Section)

6. Figure 6 shows a circle with centre G and a line AB.
   (a) Draw the circle and line as shown.
   (b) Describe another circle which shall be tangential to the line AB and to the circle at the point E.
   (c) Having drawn the two circles, construct a common external tangent to them.
   All construction lines must be clearly shown.

7. Figure 7 shows a shaped metal plate.
   Draw the figure full size and then construct a figure similar to it, but having an overall height of 75 mm.

8. Figure 8 shows the true shape (development) of one side of a truncated pyramid, the base of which is a regular pentagon. Draw a plan and elevation of the truncated pyramid showing all necessary construction lines.

9. Figure 9 represents three circles A, B and C, which touch each other externally. The diameter of circle A is 40 mm. The circle B is to have an area equal to twice that of the circle A and the area of circle C is to be equal to the sum of the areas of A and B.
   Draw the figure full size showing all construction lines.

SCRÚDÚ NA MEÁNTEISTIMÉIREACHTA 1972 INTERMEDIATE CERTIFICATE EXAMINATION

LÍNÍOCHT MHEICNIÚIL CUID 1   MECHANICAL DRAWING PART 1

FIGURE 1   FÍOR 1

TÁ NA TOISÍ SA CHORAS MÉADRACH   THE MEASUREMENTS ARE IN THE METRIC SYSTEM

CUID 2 — PART 2

TÁ NA TOISÍ SA CHÓRAS MÉADRACH

THE MEASUREMENTS ARE IN THE METRIC SYSTEM

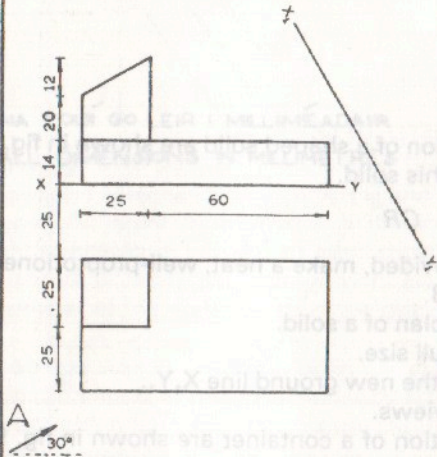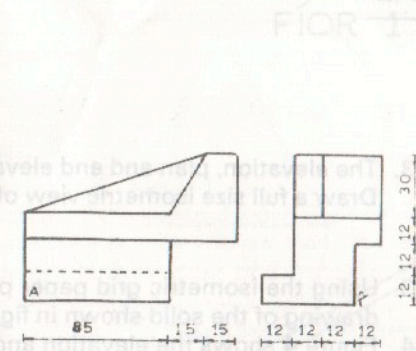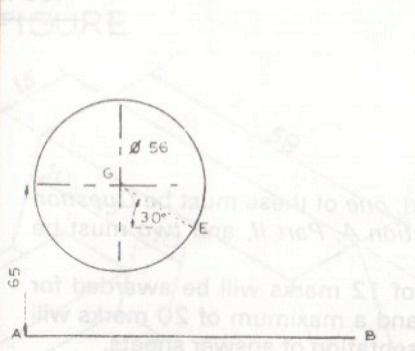### ROINN A — CUID 1 — SECTION A   ROINN B — SECTION B
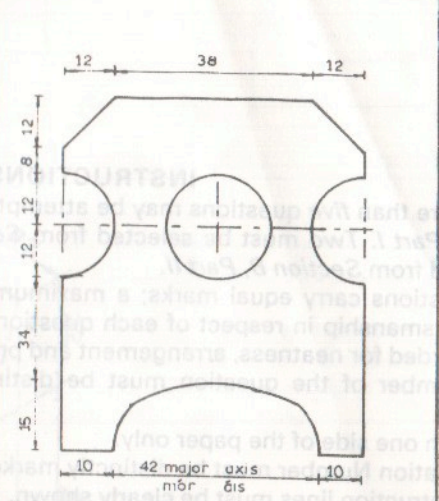
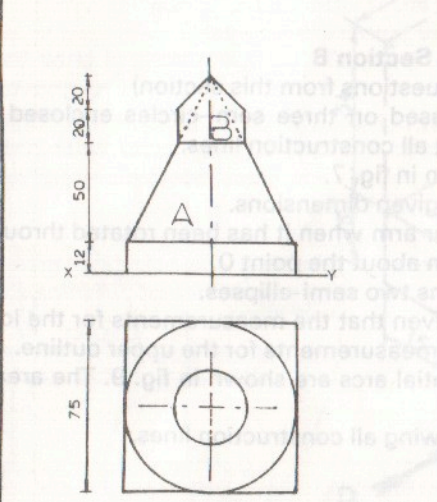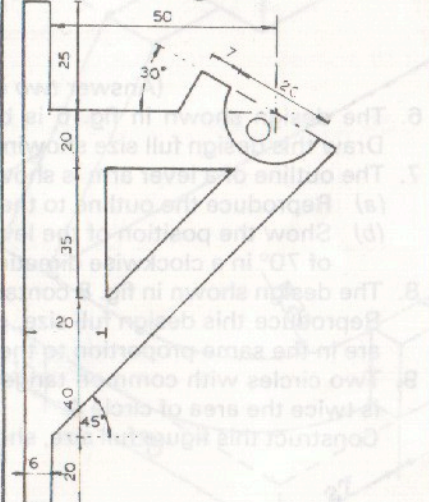| FIGURE 2 FÍOR	FIGURE 3 FÍOR	FIGURE 6 FÍOR	FIGURE 7 FÍOR

FIGURE 4 FÍOR	FIGURE 5 FÍOR	FIGURE 8 FÍOR	FIGURE 9 FÍOR