AN ROINN OIDEACHAIS

INTERMEDIATE CERTIFICATE EXAMINATION, 1971

MECHANICAL DRAWING

Wednesday, 23rd June—Afternoon, 2 to 5

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 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 direction of arrow Y,
   (c) a plan view projected from (a).
   Insert five main dimensions.

PART II

Section A

(Answer *two* questions from this Section)

2. Figure 2 shows an elevation and incomplete plan of a solid.
   (a) Reproduce the given elevation full size and draw the complete plan.
   (b) Draw an auxiliary elevation on the new ground line X_1 Y_1. The new ground line is drawn perpendicular to the direction of the arrow A.
   Index the points in each view.
3. Figure 3 represents a metal plate. Reproduce the given shape full size using geometrical constructions.
4. Figure 4 shows the elevation and plan of a solid. Draw full size an isometric view of the solid with surface A nearest to you.
   Hidden detail need not be shown.

OR

4. Using the isometric grid paper provided, make a neat, well proportioned, freehand drawing of the solid shown in Figure 4 with surface A nearest to you.
   Hidden detail need not be shown.
5. Figure 5 shows the projections of a container which is open at the top. Draw full size and in one piece the development of all the surfaces.

Section B

(Answer *two* questions from this Section)

6. Figure 6 represents three lines which are chords of the same circle. Their length is 175 mm and AB:AC:CD = 3:2:1. Using a geometrical construction draw the circle.
   Having located the point D, draw a second circle which shall be tangential to the first circle at that point and shall have a diameter of 56 mm.
7. The design in Figure 7 is based on a regular pentagon and two equal circles. Reproduce the design to the given dimensions, showing clearly all geometrical constructions.
8. In Figure 8 the line AB represents the major axis of an ellipse and P is a point on the curve.
   (a) Using geometrical constructions, determine the length of the minor axis.
   (b) Draw the ellipse using the concentric circles method.
9. In Figure 9, the line AB is tangential to the semi-circle at point C.
   Reproduce the figure to the given dimensions and then rotate it clockwise through an angle of 55 degrees about the point P.

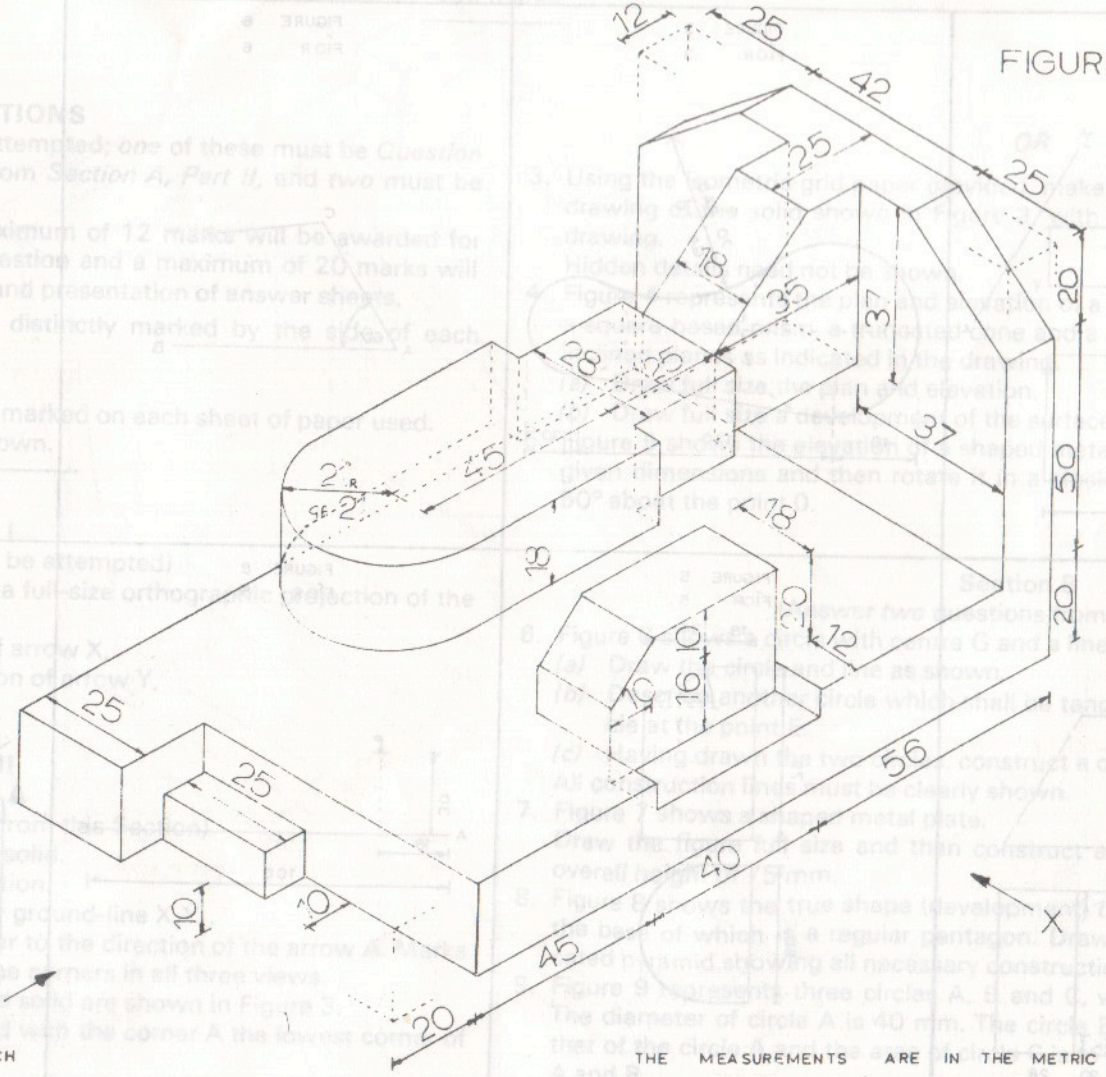
AN ROINN OIDEACHAIS

SCRÚDÚ NA MEÁNTEISTIMÉIREACHTA 1971 INTERMEDIATE CERTIFICATE EXAMINATION

LÍNÍOCHT MHEICNIÚIL CUID I MECHANICAL DRAWING PART I

FÍOR 1

FIGURE 1.



TÁ NA TOISÍ SA CHÓRAS MÉADRACH

THE MEASUREMENTS ARE IN THE METRIC SYSTEM

see over ►

CUID II PART II

TÁ NA TOISÍ SA CHÓRAS MÉADRACH

THE MEASUREMENTS ARE – IN THE METRIC SYSTEM

ROINN A - SECTION A

FIGURE 2
FÍOR 2

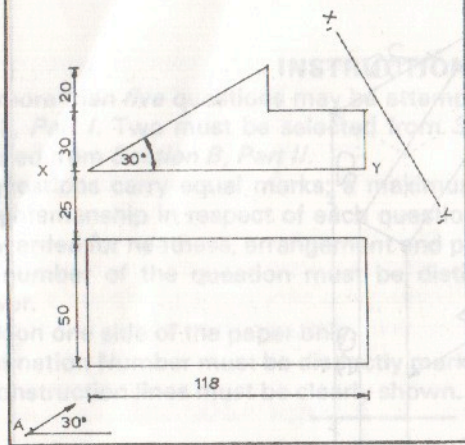


FIGURE 3
FÍOR 3

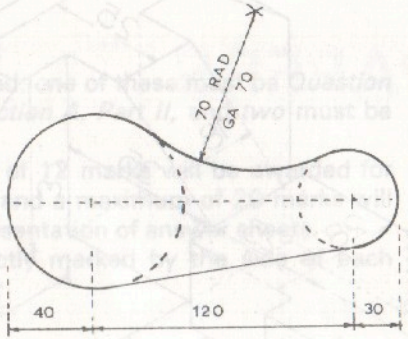


FIGURE 4
FÍOR 4

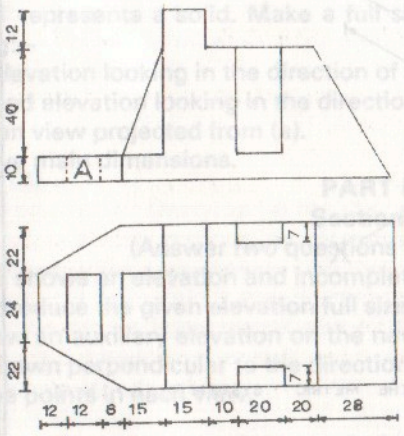
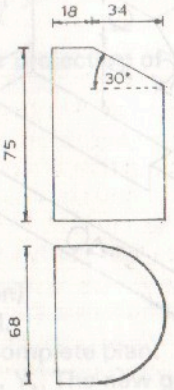


FIGURE 5
FÍOR 5



ROINN B - SECTION B

FIGURE 6
FÍOR 6

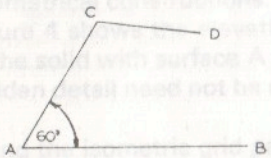


FIGURE 7
FÍOR 7

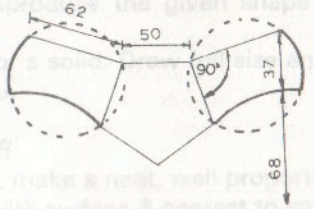


FIGURE 8
FÍOR 8

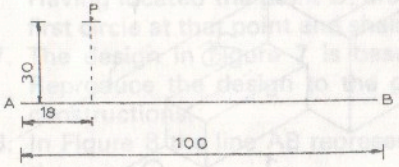


FIGURE 9
FÍOR 9