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LEAVING CERTIFICATE EXAMINATION, 1973

TECHNICAL DRAWING - COMMON LEVEL - PAPER I

(Plane and Solid Geometry

THURSDAY, 14th JUNE - AFTERNOON, 2.30 to 5

INSTRUCTIONS

(a) Answer four questions.
(b) All questions carry equal marks.
(c) Construction lines must be shown on all solutions.
(d) Write the number of the question distinctly on the answer paper.
(e) All dimensions on the question paper are given in millimetres.

1. Fig. 1 shows the plan and elevation of a machine part. Make a full-size drawing of the plan and elevation and project an end elevation looking in the direction of the arrow A.

2. (a) Fig. 2(a) shows the traces of an oblique plane VTH. Also shown is the plan of a right rectangular prism which is resting on the horizontal plane and which passes up through the oblique plane. Draw the elevation of the intersection of the prism and the oblique plane. Scale 1 : 1.

(b) Fig. 2(b) shows the plan of an equilateral triangle of 80 mm side with the side AB resting on the horizontal plane. Draw the elevation of the triangle and determine the traces of the plane on which it lies. Scale 1 : 1.

3. Fig. 3 shows a rod AB pivoted at A. The end B swings from B to C and back at constant speed. During this movement, a slide with initial position D moves from D to B at constant speed. Draw the locus of this slide during the movement of the rod. Scale 1 : 1.
Name the curves.

4. Fig. 4 shows the elevation of a right cone which is cut by the two inclined planes as shown. Draw the plan and the true shape of the cut surfaces. Scale 1 : 1.

5. The elevation of a cylinder of diameter 76 mm and height 100 mm is shown in Fig. 5. Also shown is a label ABCD which when wrapped around the cylinder has points A and B coinciding. Draw the elevation of the cylinder showing the label in position. Scale 1 : 1.

6. Fig. 6 shows the plan of a thin metal plate whose surface area is divided into three equal parts, D, E and F, by the lines AB and AC. Draw the plan, indicating clearly the method used to determine the lines AB and AC.
Project an elevation on XY when the sheet has been bent along AB until part D makes an angle of 60° to the horizontal plane. Scale 1 : 1.

7. A cam rotating in a clockwise direction operates a knife-edged follower to give it the following motion:-

0° - 90° lift 35 mm with uniform velocity;
90° - 180° dwell; and
180° - 360° fall 35 mm with simple harmonic motion.

The nearest approach of the follower to the cam centre is 25 mm.
Draw the cam profile. Scale 1 : 1.

An Roinn Oideachais

# LÍNÍOCHT TEICNIÚIL

## Cuid I Plánchéimseata agus Dlúthchéimseata

## Part I Plane and Solid Geometry

Scrúdú Ardteistiméireachta 1973