AN ROINN OIDEACHAIS

LEAVING CERTIFICATE EXAMINATION, 1975
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TECHNICAL DRAWING - COMMON LEVEL - PAPER I
(Plane and Solid Geometry)
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MONDAY, 16 JUNE - AFTERNOON, 2 to 4.30
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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.
(f) First or third angle projection may be used.

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1. The plan and elevation of a casting are shown in Fig. 1. Draw the given plan and
elevation and make an isometric drawing of the casting. Scale 1 : 1.

2. (a) The elevation of a cylinder is shown in Fig. 2. Draw the elevation of the cylinder
        showing a helix which moves from the point A to the top of the cylinder in one
        complete revolution.

   (b) Show, also, another helix which moves from the bottom to the top of the cylinder in
        two complete revolutions and which passes through the point B. Scale 1 : 1.

3. Fig. 3 shows the plan and elevation of a solid which is cut by the oblique plane VTH.
Draw the plan and elevation of the intersection of the solid and the oblique plane. Also
show the true shape of the section of the solid by the oblique plane. Scale 1 : 1.

4. Fig. 4 shows the incomplete plan of a regular pentagonal prism of 35 mm side which
penetrates a right cone whose height is 100 mm. Both solids rest on the horizontal plane.
Draw the plan and elevation of these solids showing the lines of interpenetration.
Scale 1 : 1.

5. Fig. 5 shows a quadrilateral ABCD in which is contained a regular hexagon.

   (a) Draw the given figure.

   (b) Construct a rectangle having one side 150 mm long equal in area to the quadrilateral.

   (c) From the point B draw a line which shall divide the area of the quadrilateral into
        two equal parts. Scale 1 : 1.

6. (a) A cam rotating in a clockwise direction operates a knife edge follower to give it
        the following motion:-

                    0° - 60° dwell

              60° - 180° lift 40 mm with uniform velocity

            180° - 240° dwell

            240° - 360° fall 40 mm with uniform velocity.

      The nearest approach of the follower to the cam centre is 50 mm.
      Draw the profile of the cam. Scale 1 : 1.

   (b) The profile of a cam which operates a knife edge follower is shown in Fig. 6.
        Determine the displacement diagram (cam graph) for the follower, using a scale of
        10 mm to 30°.

7. (a) Draw a hyperbola whose eccentricity is 1·25 when the distance between the focus and
        the directrix is 50 mm.

   (b) Draw a straight line AFB where AF = 40 mm and FB = 50 mm. If A and B be two points
        on the curve of a hyperbola those focus is F and whose eccentricity is 1·2, draw
        the curve. Scale 1 : 1.

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LÍNÍOCHT TEICNIÚIL
Cuid 1 Plánchéimseata agus Dlúthchéimseata
Part 1 Plane and Solid Geometry

Scrúdú Ardteistiméireachta 1975
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