LEAVING CERTIFICATE EXAMINATION, 1981

TECHNICAL DRAWING - COMMON LEVEL - PAPER I

(Plane and Solid Geometry)

TUESDAY, 16 JUNE - AFTERNOON 2 to 4.30

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.

1. Fig. 1 shows the elevation and plan of an object.

(a) Draw the given views and project an auxiliary elevation on X_1Y_1.

(b) From the auxiliary elevation project a second plan on X_2Y_2.

Note: Hidden details need not be shown on the second plan.

Scale 1 : 1

2. In Fig. 2 the centre for the arc of radius R lies on the straight line PQ.

(a) Draw the given figure showing all the construction clearly.

(b) Draw a similar figure which will have 1·8 times the area of the given figure.

Scale 1 : 1

3. Fig. 3 shows the plan and elevation of a solid which is cut by the oblique plane VTH.

(a) Draw the elevation and plan of the cut solid.

(b) Determine the true angle between the surface A and the oblique plane VTH.

Scale 1 : 1

4. Fig. 4 shows the incomplete projections of two solids which penetrate each other. Draw the plan and elevation of these solids showing all lines of interpenetration.

Scale 1 : 1

5. (a) In Fig. 5 the circle N rolls along the line PP_1 for one complete revolution and the point P reaches P_1. Draw the locus of the point P during this movement.

(b) If the line PP_1 rolls on the circle M until the point P_1 touches the line AB, draw the locus of P_1 for this movement.

(c) If the movements at (a) and (b) above occur at the same time and at constant speed draw the locus of P for the combined movement.

Scale 1 : 1

6. (a) In Fig. 6 two parabolas can be drawn with axis AB, focus F and having the point P on both curves. Find the directrices and draw both curves.

(b) An ellipse has an eccentricity of 0·75 and a major axis of 210 mm. Find the foci, minor axis and directrix and draw the ellipse.

Scale 1 : 1

7. The projections of a triangle ABC are given in Fig. 7.

(a) Draw the given projections and find the true shape of the triangle ABC.

(b) Find the inclination of the side AB to the horizontal plane.

(c) Draw the projections of a square inscribed in the triangle ABC and which will have two of its vertices on AC and one vertex on each of the sides AB and BC.

Scale 1 : 1

AN ROINN OIDEACHAIS — LÍNÍOCHT TEICNIÚIL CUID 1 — Scrúdú Ardteistimeireachta 1981
DEPT OF EDUCATION — TECHNICAL DRAWING PART 1 — Leaving Certificate Examination