TECHNICAL DRAWING - COMMON LEVEL - PAPER I
(Plane and Solid Geometry)

WEDNESDAY, 23 JUNE - MORNING 9.30 to 12.00

INSTRUCTIONS

(a) Answer <u>four</u> 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) <u>All dimensions on the question paper are given in millimetres</u>.
(f) First or third angle projection may be used.

1. An isometric view of a shaped solid is shown in Fig. 1.

    (a) Draw a plan, elevation and end-view of the solid.

    (b) Draw a new elevation which will show the true length of the edge CD.

    (c) From the new elevation project a plan which will show the true angle
        between the plane surfaces ABCD and CDEF.

                                                      Scale 1 : 1

2. (a) In Fig. 2 the segment of the circle M rolls along the line AO until the
        point B reaches O. Draw the locus of B for this movement.

    (b) The segment N rolls from C along the line CO until the point D reaches O.
        Draw the locus of D for this movement.

                                                      Scale 1 : 1

3. (a) Fig. 3 shows the plan and elevation of a regular hexagonal prism of 28 mm
        side which is cut by the oblique plane VTH. Draw the elevation and plan
        of the cut prism.

    (b) Draw the plan and elevation of a line AB, 100 mm long, which is inclined at
        30° to the vertical plane and 45° to the horizontal plane. The point A
        lies in the horizontal plane and the point B lies in the vertical plane.

                                                         Scale 1 : 1

4. (a) Construct a diagonal scale of 1 : 250 to show metres and tenths of a metre
        and to read up to 50 m.

    (b) Using the above scale construct the triangle PQR and the inscribed square
        ABCD shown in Fig. 4.

    (c) Draw another triangle on the base PQ which shall have a perimeter of 100 m
        and shall have the same area as the triangle PQR.

5. Fig. 5 shows the projections of two solids which penetrate each other.
   Draw the plan and elevation of the solids showing clearly all lines of
   interpenetration.

                                                        Scale 1 : 1

6. The directrix DD of an ellipse and a point P on the curve are shown in Fig. 6.
   The focus of the ellipse is 35 mm from the directrix and the eccentricity is
   0.75.

    (a) Construct the ellipse and draw a tangent to the curve at point P.

    (b) Draw another tangent to the curve which shall be inclined at 105° to
        the tangent at P.

                                                         Scale 1 : 1

7. Fig. 7 shows the development of the surfaces of a container made from thin metal
   plate. The surfaces are folded along the dotted lines in order to form the container.
   Draw the given development and draw the elevation and plan of the container in
   its folded position.

                                                        Scale 1 : 1

AN ROINN OIDEACHAIS

DEPT. OF EDUCATION

LÉIRIOCHT TEICNIÚIL CUID 1

TECHNICAL DRAWING PART 1

M.117(L)

Scrúdú Ardteistiméireachta 1982

Leaving Certificate Examination 1982

2

①

70
50
30°
20°
60°
40
80
A
D
E
B
C
F
60°
07

②

60°
B
A
M
Ø60
O
120
C
D
N
Ø50

③

28 | 33
90
H
V
30°
4.5°
T

④

20.7m
P
A
D
R 70°
B
C
37.2m
Q

⑤

50
70
22
160
30°
35
15°
25 | 30 | 25

⑥

P
4.0
D — D

⑦

35
85
35
35
A
D₁
75°
D
A₁
110
130
20
B
C₁
60°
80°
C
B₁
25

1 : 1

1 : 1

1 : 1

1 : 1

1 : 1