INTERMEDIATE   CERTIFICATE   EXAMINATION,   1979

MECHANICAL DRAWING

MONDAY, 18 JUNE - AFTERNOON, 2.00 to 5.00

400 marks

INSTRUCTIONS

(a) Five questions to be answered; one of these must be question No. 1, Section A.   Two
    must be selected from Section B and two must be selected from Section C.

(b) All questions carry equal marks.   A maximum of 12 marks will be awarded for draughts-
    manship 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 question.

(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.

(g) All measurements are in millimetres.

SECTION A

(This question must be attempted)

1. A shaped solid is shown in fig. 1.   Make a full-size orthographic projection of this
solid showing:

    (a) an elevation looking in the direction of arrow X,

    (b) an end view looking in the direction of arrow Y,

    (c) a plan projected from (a).

SECTION B

(Two questions to be attempted from this section)

2. The elevation of a cut square based prism of side 55 mm is given in fig. 2.   The prism
rests with its base on the Horizontal Plane with its sides at 45° to the XY line.

    (a) Draw the elevation and plan of the cut prism

    (b) Project any end view of the cut prism.

3. Fig. 3 shows in THIRD ANGLE PROJECTION the front view (elevation), top view (plan) and
right-hand end view of a shaped solid.
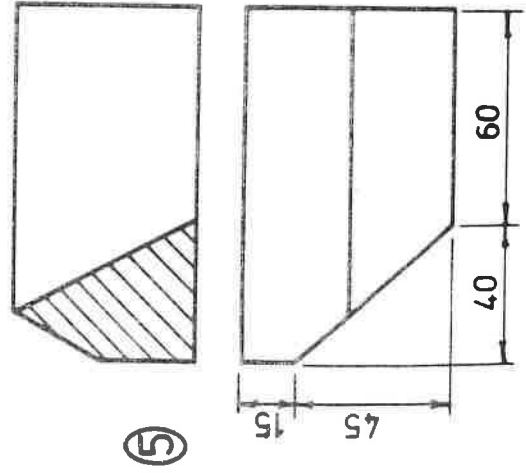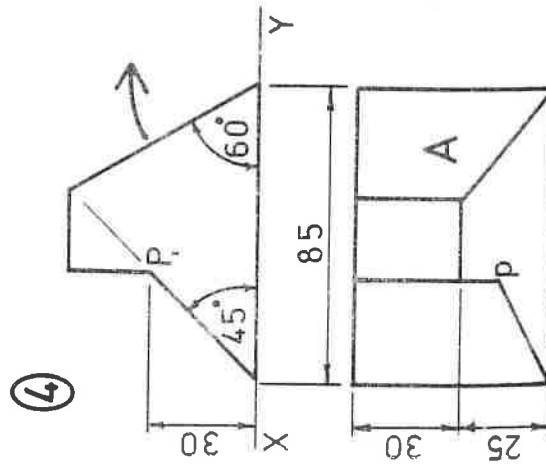
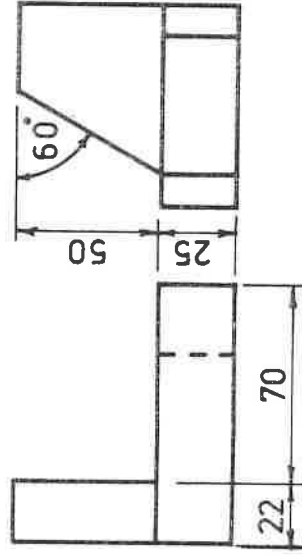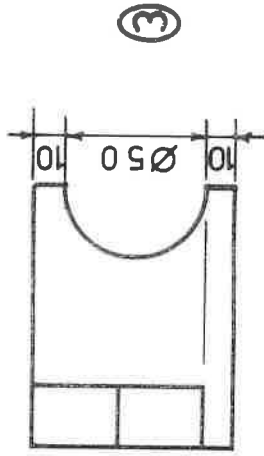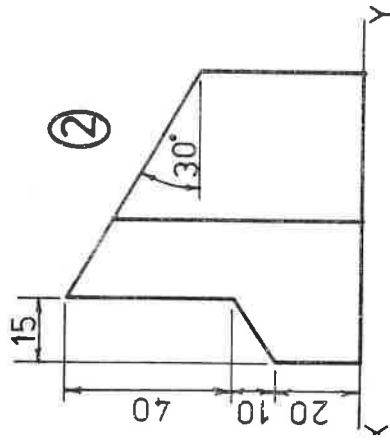   (a) Draw a full-size isometric view of the solid.

OR

    (b) Using the isometric grid-paper provided make a neat well-proportioned FREEHAND sketch
        of this solid.   Insert all necessary dimensions on the sketch.

4. The elevation and plan of a shaped solid are shown in fig. 4.

    (a) Draw the elevation and plan of this solid in full size showing clearly how you locate
        point P in plan

    (b) This solid is rotated as indicated by the arrow until surface A rests on the
        Horizontal Plane.   Draw a new elevation and plan of the solid in this position.

5. Fig. 5 shows the elevation and plan of an equilateral triangular prism of side 60 mm.
The prism is cut by a vertical plane as shown.
    Draw full size and in one piece the development of all the surfaces of the cut prism.

SECTION C

(Two questions to be attempted from this section)

6. Fig. 6 shows a piece of plastic pierced by holes in the shape of a square, a regular
hexagon and a regular pentagon.
    Draw this piece of plastic, full size, showing clearly all construction lines.

7. Fig. 7 shows a triangle ABC described about a square.

    (a) Draw, full size, the square and triangle ABC.

    (b) Draw another triangle DEF which will have its sides in the ratio of 3 : 2 : 2 and
        have a perimeter equal to triangle ABC.

8. Reproduce, full size, the shape shown in fig. 8.
    All construction lines and points of contact must be clearly shown.

9. Fig. 9 represents a line diagram of an entrance gateway.   The arch is in the shape of
a semi-ellipse.
    Draw this diagram in full size showing clearly all construction lines.   The spacings
between the 15 mm vertical members are to be equal.

ROINN **A** ——— SECTION **A**

THALL
OVER

F2

X

Y

①

ROINN C — SECTION C

ROINN B — SECTION B

⑥

⑦

⑧

⑨

②

③

④

⑤

45 75 75 45

R

R

10 48 10

95°

35°

35

A

B

C

46 46 60

10

150

10

10

10

10

15 15 15 15 15 15 15

R24

R40

R30

R50

60°

45°

15

120

30°

15

70

22

Ø50

10   10

60°

50

25

Y

20 10 20

40

15

60

40

15 45

X

Y

25 30

30

85

60°

45°

P

P

A

Y