AN ROINN OIDEACHAIS M.118

LEAVING CERTIFICATE EXAMINATION, 1983

TECHNICAL DRAWING - COMMON LEVEL - PAPER II

THURSDAY, 23 JUNE - MORNING, 9.30 - 12.00

N.B. ANSWER EITHER SECTION A OR SECTION B

SECTION A (ENGINEERING)

INSTRUCTIONS

(a) All questions to be attempted.
(b) Drawings and sketches should be in pencil unless otherwise stated.
(c) Where dimensions are omitted they may be estimated.
(d) Credit will be given for neat orderly presentation of work.
(e) Candidates should work on one side of the paper only.
(f) The Examination Number should be written on each drawing sheet used.
(g) All dimensions are in millimetres.

1. Details of a ratchet mechanism assembly are given in Fig. 1, with the parts list tabulated below.

Index	Part	Required
1	Body	1
2	Ratchet Wheel	1
3	Shaft	1
4	Pawl	1
5	Pivot Pin	1
6	Set Screw	2
7	Spring	1
8	Washer	1
9	Circlip	1

Make the following drawings of the assembled parts in first or third angle projection:-

(i) An elevation viewed in the direction of arrow X.
(ii) A sectional elevation as indicated by plane A - A.

The solution should include the title RATCHET MECHANISM, the ISO symbol for the type of projection used and four leading dimensions. (110 marks)

2. Figure 2 shows two views of a machine component.

(i) Sketch freehand in isometric projection and in good proportion a sectioned pictorial view of the component.
The sketch should be drawn on the isometric grid paper provided and be approximately full size. The section should be taken on the plane B - B and the sectioned face shown.

(ii) Title the sketch MACHINE COMPONENT IN SECTION. (40 marks)

3. (a) Two views of a machine part are shown in Fig. 3. Using the tracing paper supplied, trace in ink, directly from Fig. 3, a sectional elevation of the machine part. The section should be taken at the cutting plane C - C as viewed in the direction of the arrows.

OR

(b) An assembly drawing of a clamp for a machine table is shown in Fig. 4.
Make a full size, fully dimensioned working drawing of Part A; dimensions should be taken from the scale provided.
The drawing should be in orthographic projection and should include all necessary information.

(50 marks)

SECTION B (BUILDING)

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) First or third angle projection may be used.
(f) All measurements are given in millimetres.

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1. Fig. 1 shows the outline plan and elevation of the roof for a house. All the surfaces have the same pitch.

   (a) Draw the given views and determine the true shape of all the surfaces.

   (b) Determine the dihedral angle between the surfaces A and B.

Scale 1 : 100

2. The louvred ventilator shown in Fig. 2 has a pointed parabolic frame.

   (a) Draw the given elevation and vertical cross-section.

   (b) Develop the top surface of the louvre marked A.

Scale 1 : 5

3. Make an isometric drawing of the platform and steps whose plan and vertical cross-section are shown in Fig. 3.

Scale 1 : 20

4. Fig. 4 shows the plan and elevation of the outline of a building. Make a perspective drawing of the building when the station point (spectator) is as shown, the picture plane 7500 mm from the station point and the horizon line 6000 mm above the ground.

Scale 1 : 100

5. Fig. 5 shows the elevation and vertical cross-section of a precast concrete unit. All the sides have the same slope.

   (a) Draw the given views and project a plan of the unit.

   (b) Find the true shape of the surfaces A and B.

Scale 1 : 5

6. Fig. 6 shows the plan and elevation of the keystone for an oblique arch. The surface A is inclined at 75° to the horizontal plane.

   (a) Draw the given views.

   (b) From the given elevation project a new plan which will show the true angle between the surfaces A and B.

Scale 1 : 10

7. The elevation and end-view of the outline of a building are shown in Fig. 7. Draw the given views, project the plan and show the shadows cast when the direction of the light is 45° in elevation (as shown) and 30° in plan.

Scale 1 : 100

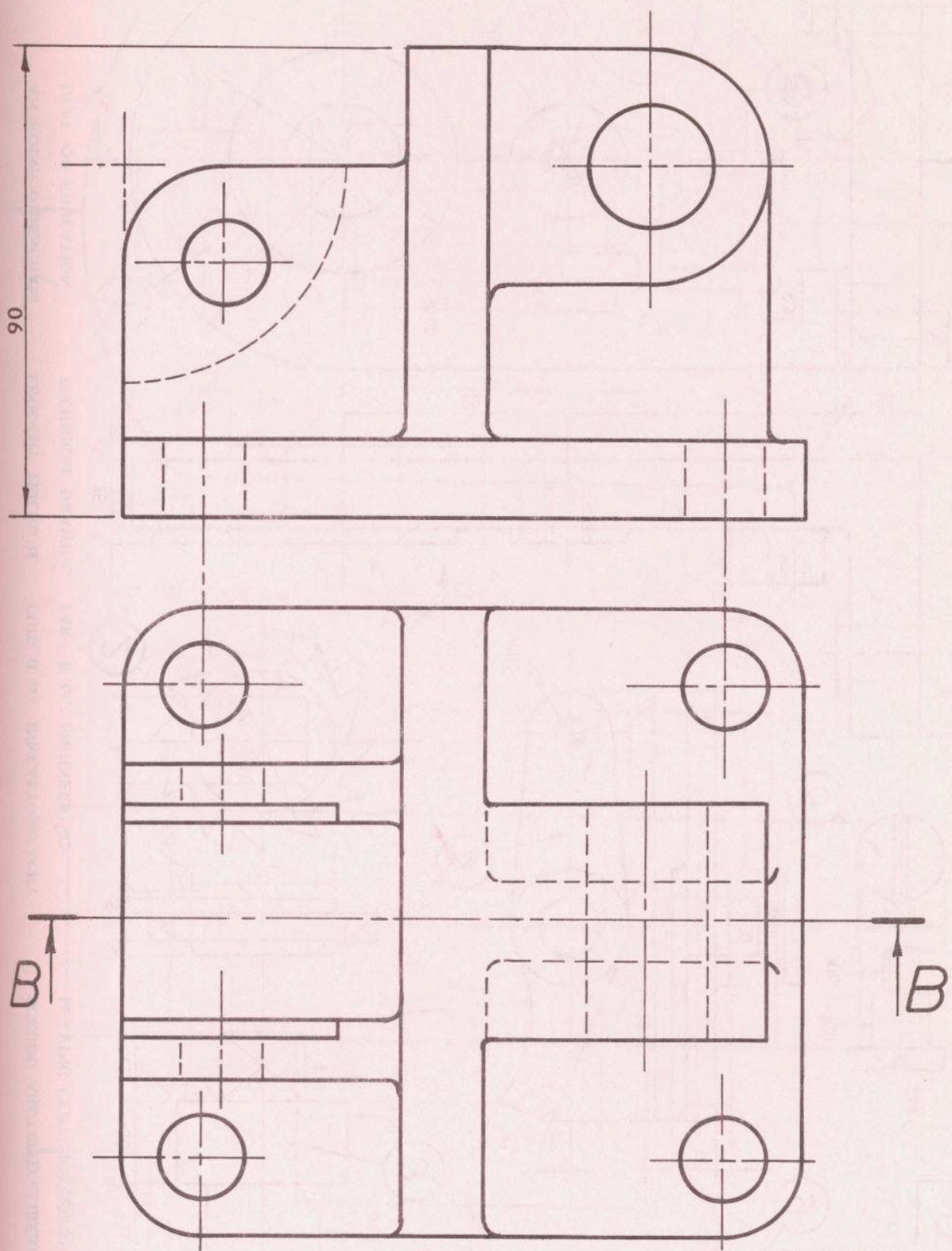
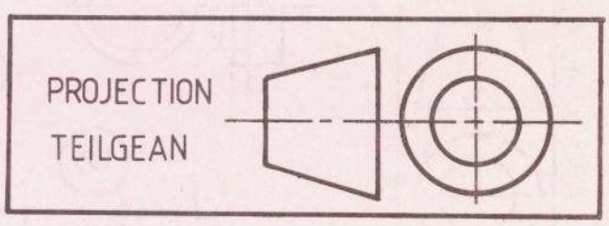


FIG. 2.
FÍOR. 2.



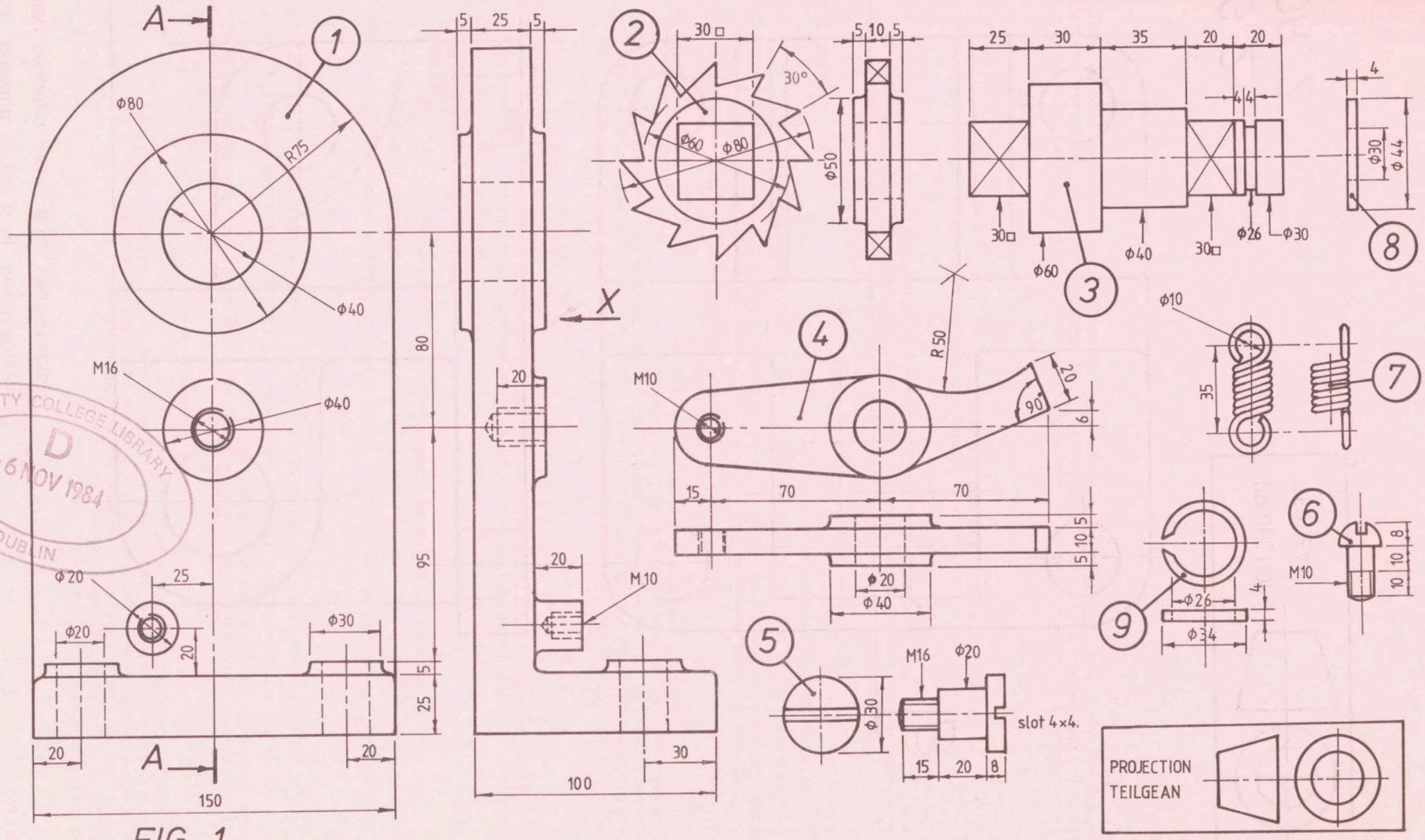


FIG. 1.
FÍOR. 1.

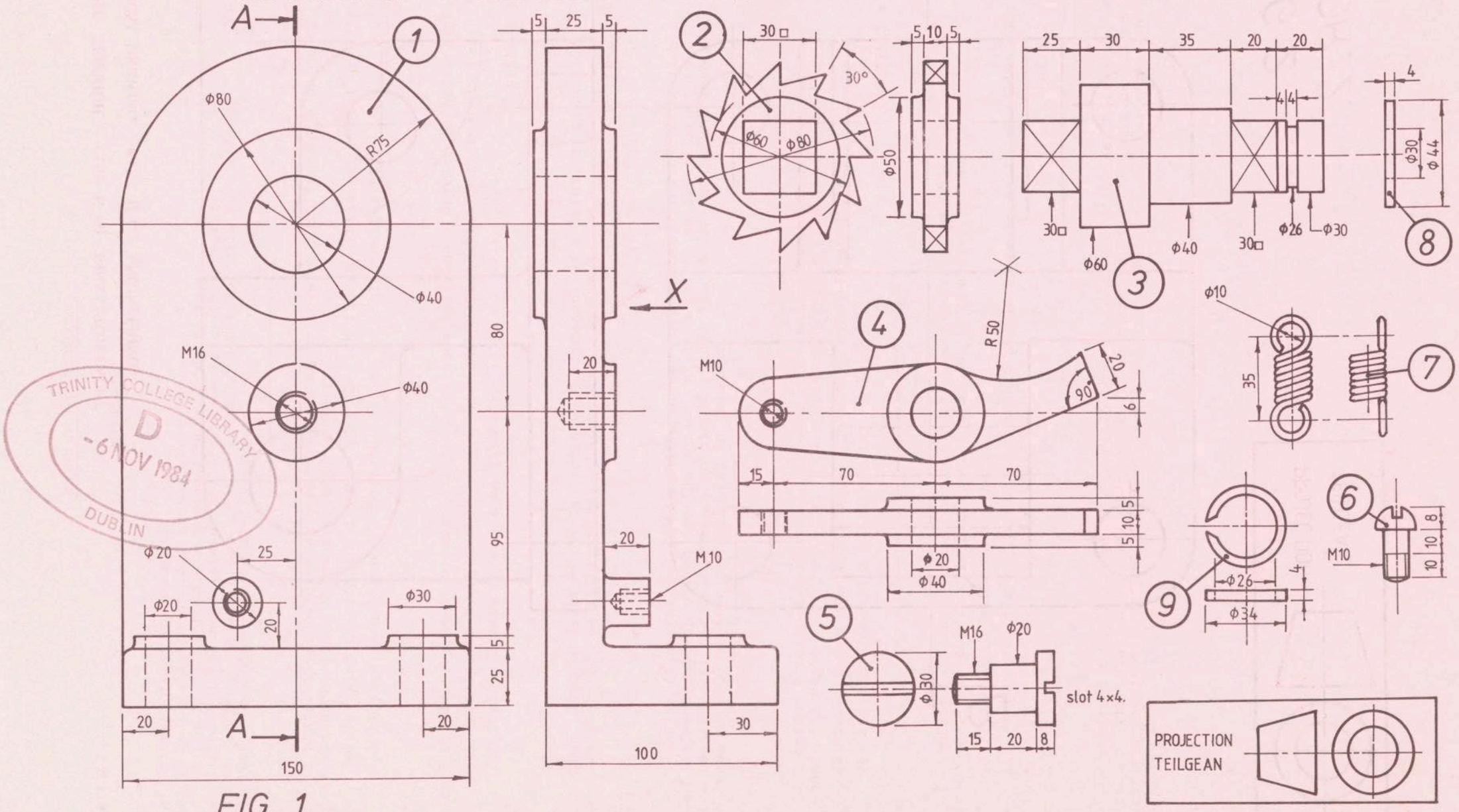


FIG. 1.
FÍOR. 1.

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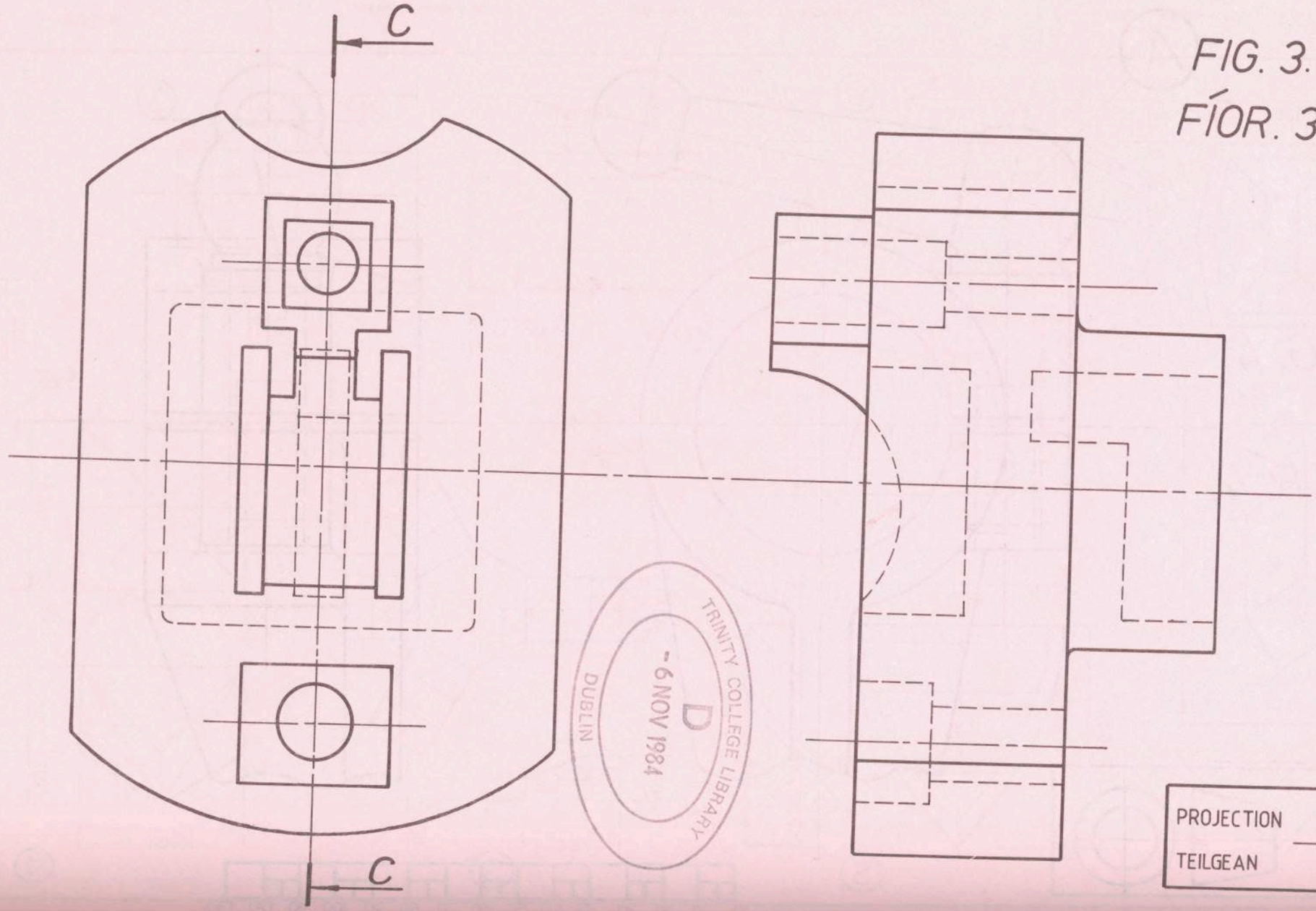
FIG. 3.
FÍOR. 3.



PROJECTION
TEILGEAN

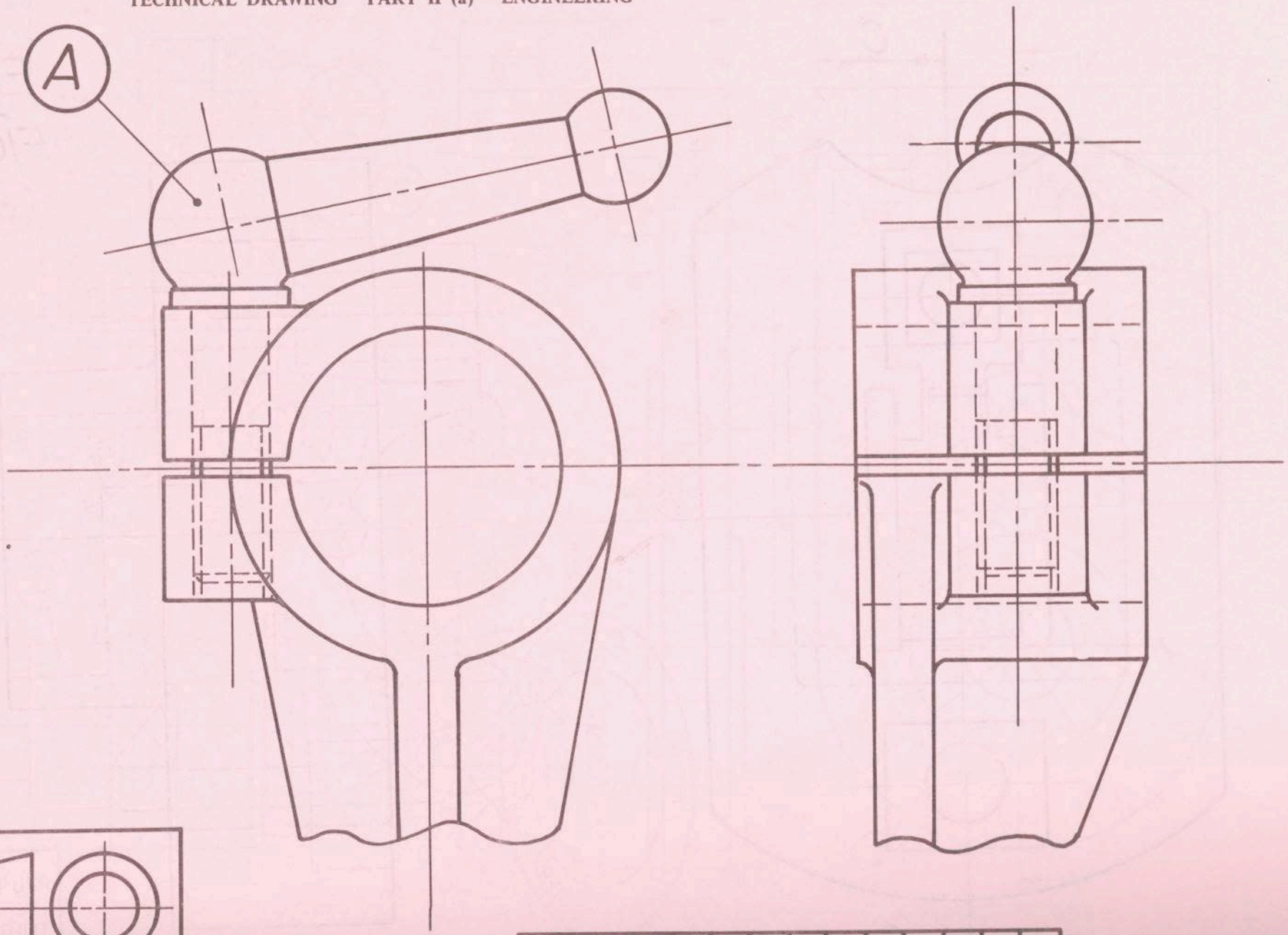


FIG. 4.

FÍOR. 4.

PROJECTION
TEILGEAN

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130

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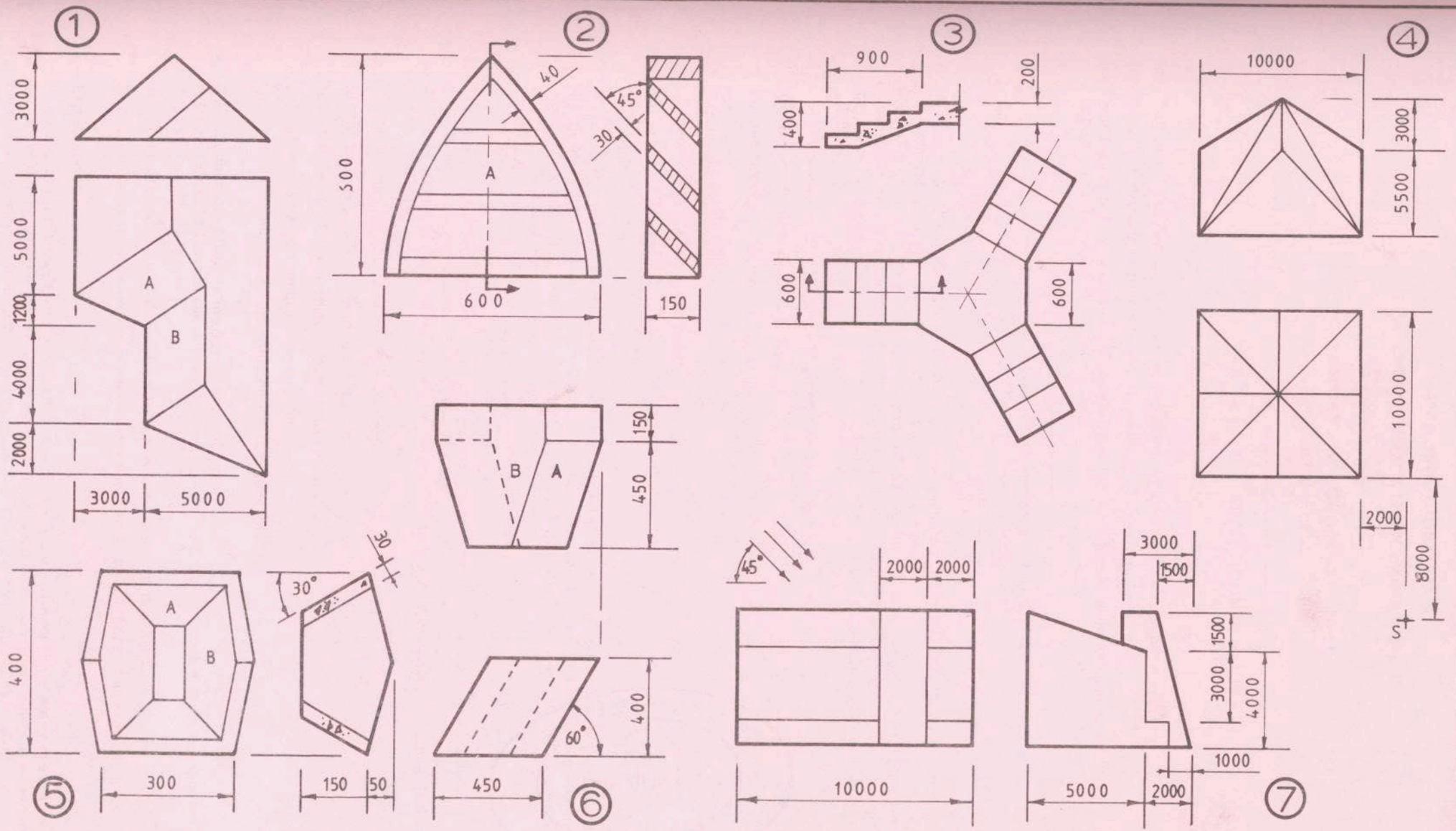

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DEPT. OF EDUCATION

LÍNÍOCHT TEICNIÚIL CUID II(b)
TECHNICAL DRAWING PART II(b)

Scrúdú Ardteistiméireachta 1983
Leaving Certificate Examination 1983

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