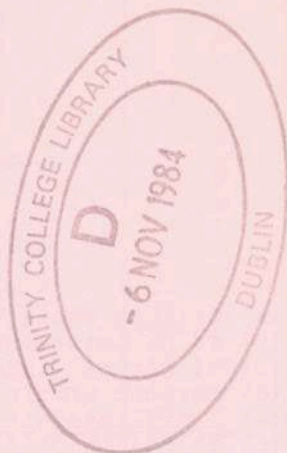


TECHNICAL DRAWING - COMMON LEVEL - PAPER I
(Plane and Solid Geometry)

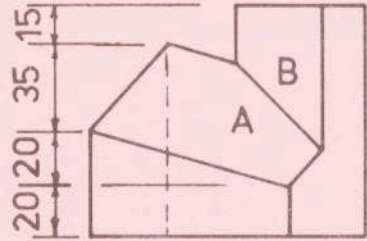
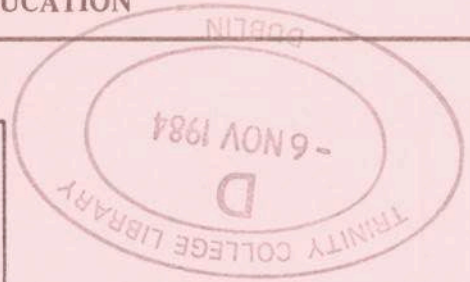
TUESDAY, 21 JUNE - MORNING, 9.30 to 12.00

INSTRUCTIONS

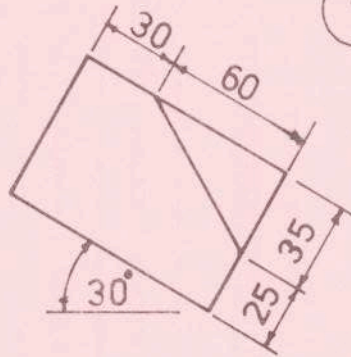
- (a) Answer four questions.
- (b) All questions carry equal marks.
- (c) Construction lines must be shown on all solutions.
- (d) Write the number of the question distinctly on the answer paper.
- (e) All dimensions on the question paper are given in millimetres.
- (f) First or third angle projection may be used.



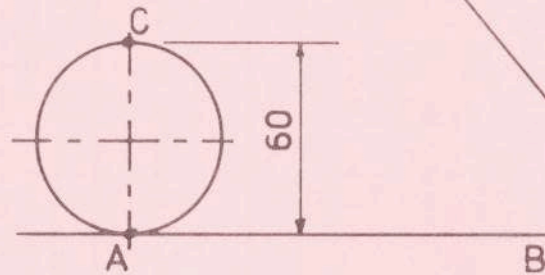
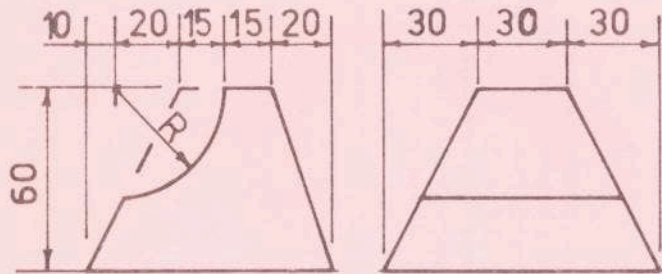
1. Fig. 1 shows the elevation and plan of a shaped solid.
 - (a) Draw the given views and project a new elevation which will show the true length of the edge between the surfaces A and B.
 - (b) From the new elevation project a plan which will show the true angle between the surfaces A and B.Scale 1 : 1
2. (a) In Fig. 2 the circle rolls along the line AB until the point C touches the line AB. Draw the locus of A for this movement.
 - (b) Draw the involute of the circle shown in Fig. 2 starting at A and finishing at C.
 - (c) If the movements at (a) and (b) above occur at the same time and at constant speed, draw the locus of A for the combined movement.Scale 1 : 1
3. Fig. 3 shows the elevation of a line AB which lies on the oblique plane shown by its traces VTH.
 - (a) Draw the given figure and show the plan of the line AB.
 - (b) Draw the projections of an equilateral triangle which has AB as one of its sides and which rests on the oblique plane.
 - (c) Determine the traces of an oblique plane which shall be inclined at 105° to the given oblique plane VTH and which shall contain the line AB.Scale 1 : 1
4. (a) Draw a parabola in which the distance from the focus to the directrix will be 50 mm.
 - (b) In Fig. 4 the line AB shows the direction of the major axis of an ellipse and F is one of the focal points. The lines AC and BC are tangents to the curve. Draw the ellipse.Scale 1 : 1
5. Fig. 5 shows the elevation and end view of a shaped solid. Draw a development of all the surfaces of the solid. Scale 1 : 1
6. Fig. 6 shows a quadrilateral ABCD in which the line AC is 120 mm long. The perimeter of the triangle ABC is 280 mm long. The lengths of the sides AD and CD are in the ratio 2 : 3.
 - (a) Draw the quadrilateral ABCD.
 - (b) From the point A draw a line which shall divide the area of the quadrilateral into two equal parts.Scale 1 : 1
7. Fig. 7 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



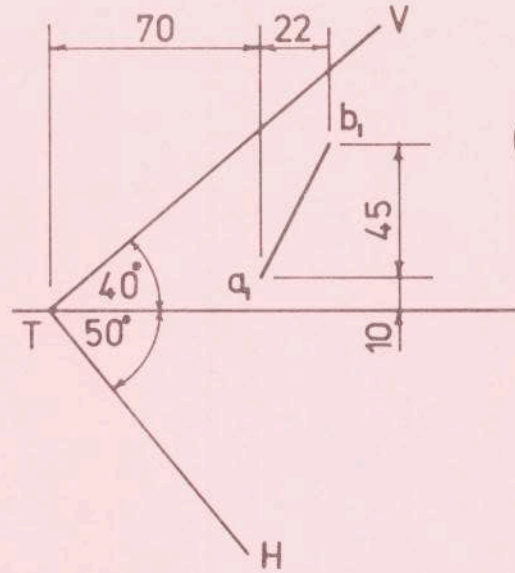
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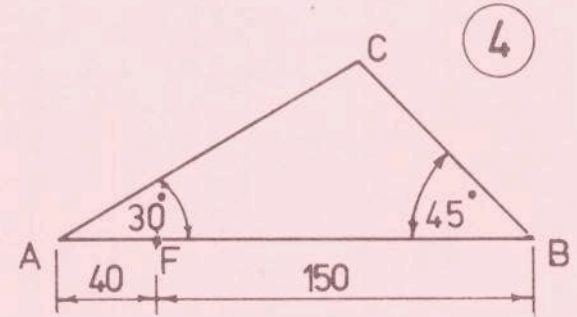
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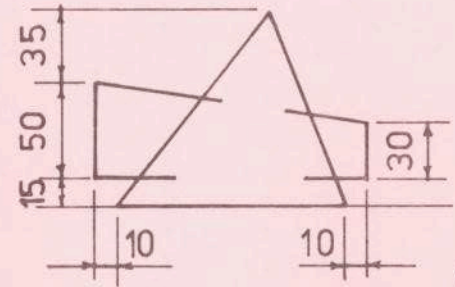
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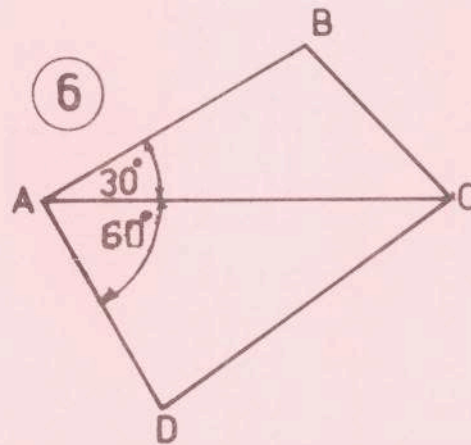
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