

## BUILDING APPLICATIONS

TUESDAY, 26 JUNE, MORNING 9.30 to 12.30

(200 MARKS)

## INSTRUCTIONS

- Answer four questions.
- All questions carry equal marks.
- Construction lines must be shown on all solutions.
- Write the number of the question, distinctly, on the answer paper.
- First or third angle projection may be used.
- All measurements are given in metres or millimetres.

1. Fig. 1 shows the plan, elevation and end view of the outline of a building. Draw a perspective view of the building when the spectator point is as shown, the picture plane 9 m from the spectator and the horizon line 2 m above the ground line.

Scale 1 : 100

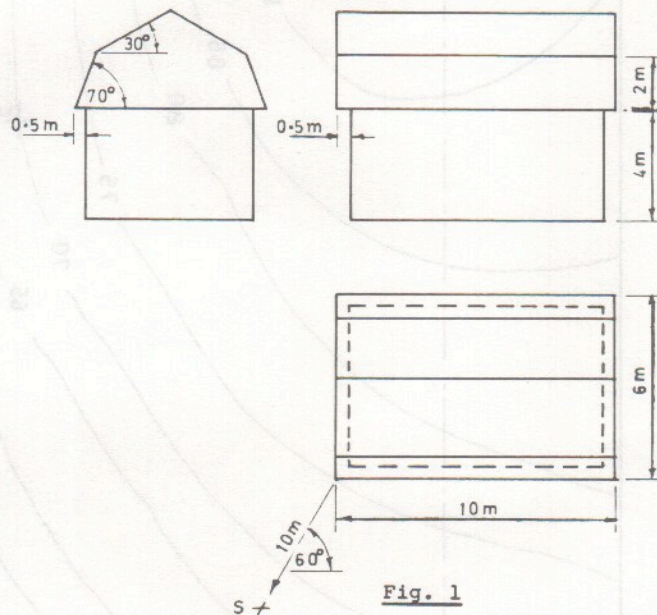


Fig. 1

2. Fig. 2 shows the plan of a building whose outside perimeter is in the form of a regular pentagon. All the lean-to roof surfaces have a pitch of  $30^\circ$ .

- Draw the plan and elevation of the building.
- Develop the roof surfaces A and B.
- Find the dihedral angle between the roof surfaces A and B.

Scale 1 : 100

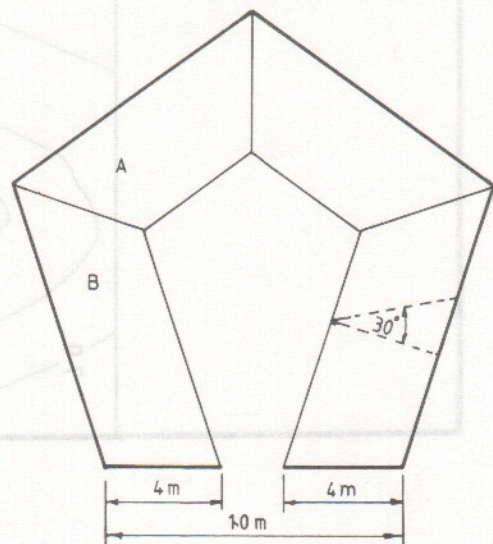
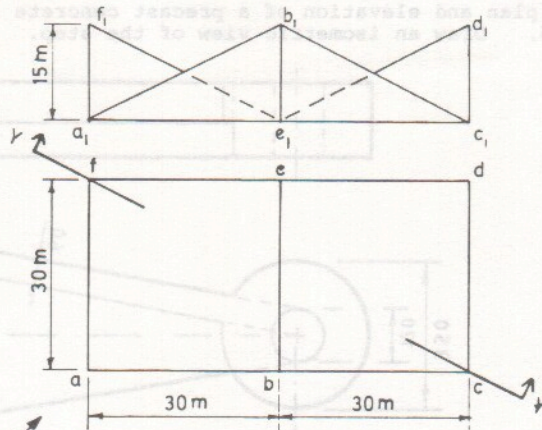


Fig. 2

3. Fig. 3 shows the outline plan and elevation of two adjoining hyperbolic paraboloid roof surfaces.

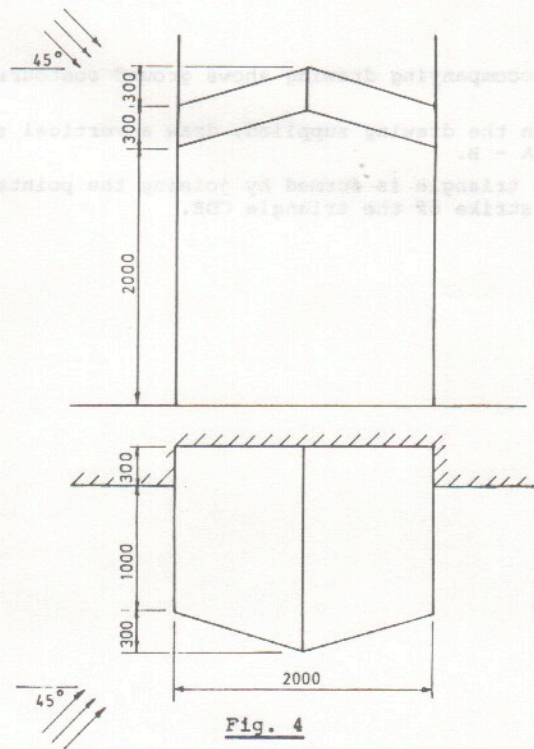


- (a) Draw an elevation of the roof surfaces looking in the direction of the arrow X.
- (b) Draw the cross-section Y - Y of the roof surfaces.

Scale 1 : 500

Fig. 3

4. Fig. 4 shows the plan and elevation of a canopy to a wall. Draw the given views and show the shadows cast when the direction of the light is as shown.



Scale 1 : 20

Fig. 4

5. Fig. 5 shows the outline plan and elevation of a cooling tower in the form of a hyperboloid of revolution.

Draw the given plan and elevation and show the true shape of section A - A.

Scale 1 : 200

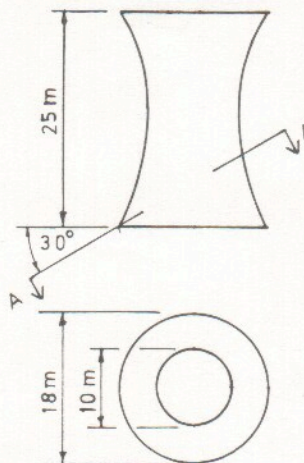


Fig. 5

6. The plan and elevation of a precast concrete step for a spiral stairs are shown in Fig. 6. Draw an isometric view of the step.

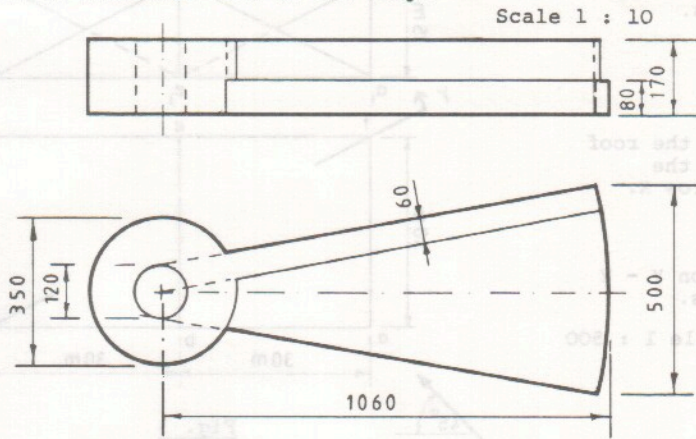
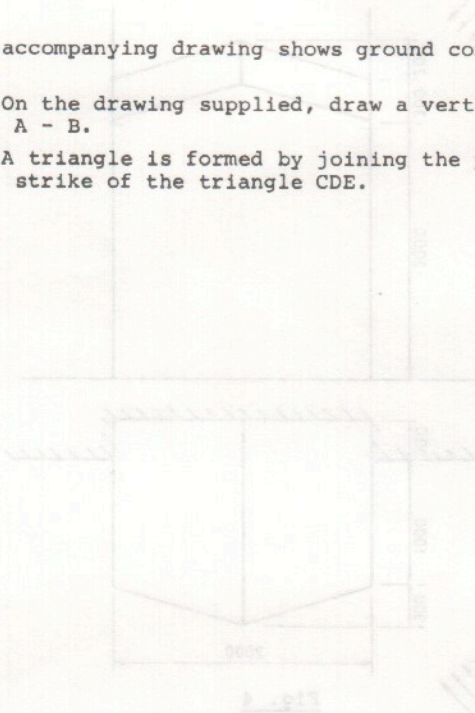


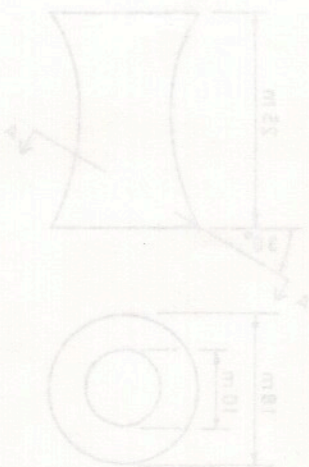
Fig. 6

7. The accompanying drawing shows ground contours at two-metre vertical intervals on a map.

- (a) On the drawing supplied, draw a vertical section (profile) on the line A - B.
- (b) A triangle is formed by joining the points C, D and E. Find the dip and strike of the triangle CDE.



4. Fig. 4 shows the plan and elevation of a canopy for a wall. Draw the given view and show the shadow cast when the direction of the light is as shown.  
Scale 1 : 50



5. Fig. 5 shows the outline plan and elevation of a cooling tower in the form of a hyperboloid of revolution. Draw the given plan and elevation and show the true shape of section A - A.  
Scale 1 : 100

Fig. 5

Examination No.

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