

TECHNICAL DRAWING - ORDINARY LEVEL - PAPER II (B)

BUILDING APPLICATIONS

THURSDAY, 22 JUNE, MORNING 9.30 to 12.30

(200 marks)

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 metres or millimetres.

1. Fig. 1 shows the outline plan and elevation of a building. Draw a perspective view of the building when the position of the spectator is 35 m from the corner A, the picture plane touching the corner A and the horizon line 10 m above the ground line.

Scale 1 : 500

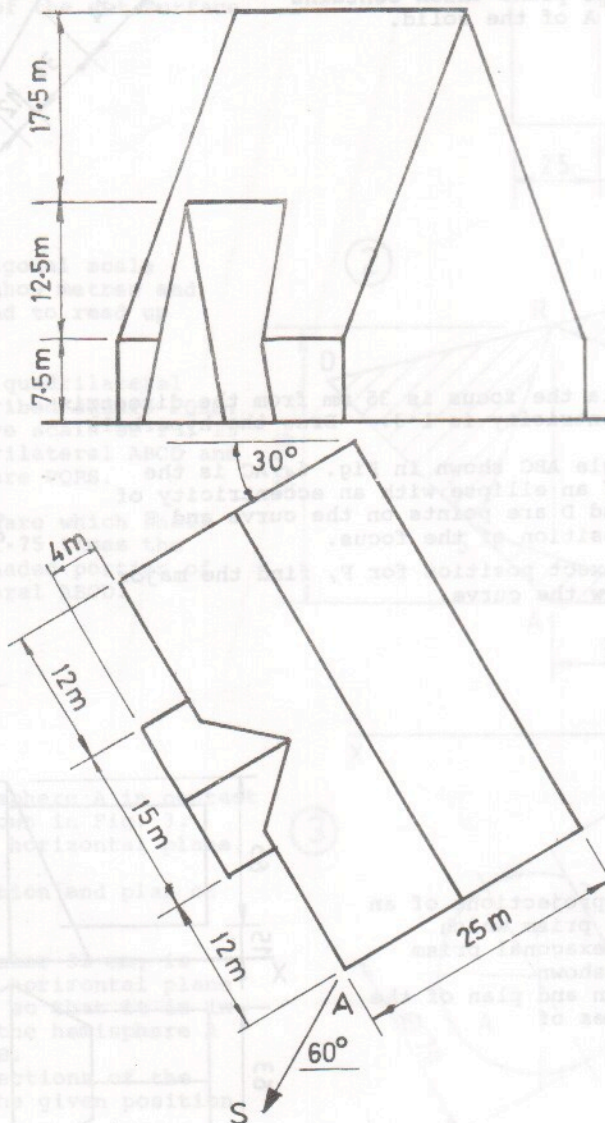


Fig. 1

2. Fig. 2 shows the outline plan of a lean-to roof. The surfaces A and B have a pitch of 35° . The surface C has a pitch of 40° .

(a) Draw the plan and elevation of the roof.

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

Scale 1 : 50

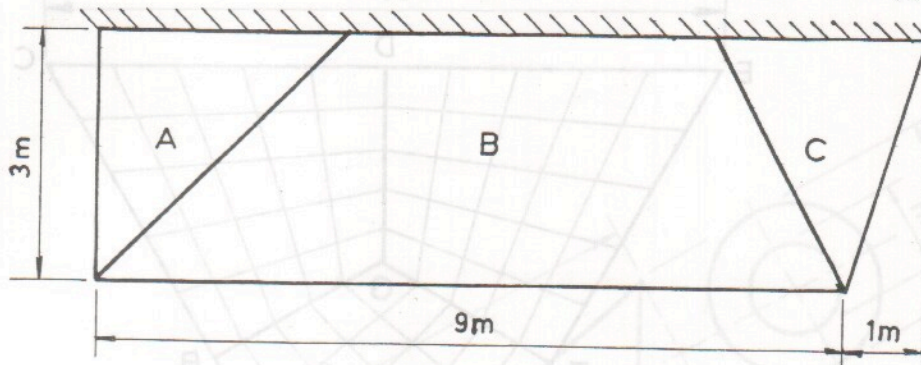


Fig. 2

3. Fig. 3 shows the plan and elevation of a gate pier.

Draw the given views and determine the shadows cast in plan and elevation when the direction of the light is as shown.

Scale 1 : 20

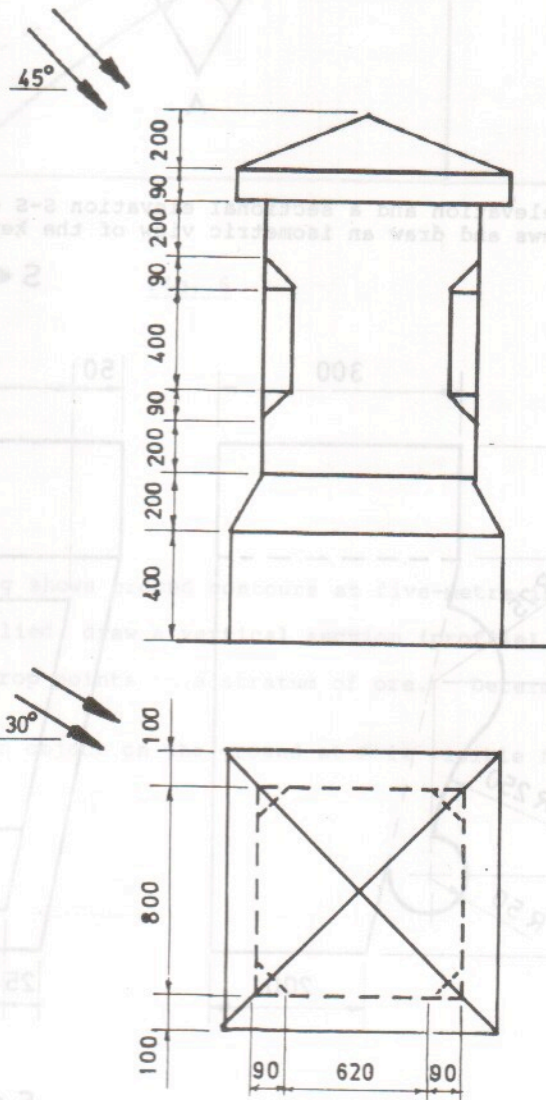


Fig. 3

4. Fig. 4 shows the outline plan of three adjoining hyperbolic paraboloid roof surfaces. The roof perimeter is an equilateral triangle in plan. The corners A, C, E and G are 15 m above ground level and the corners B, D and F are 5 m above ground level.

- Draw the plan of the roof and project the elevation.
- Show the curvature of the roof along the line EG.

Scale 1 : 200.

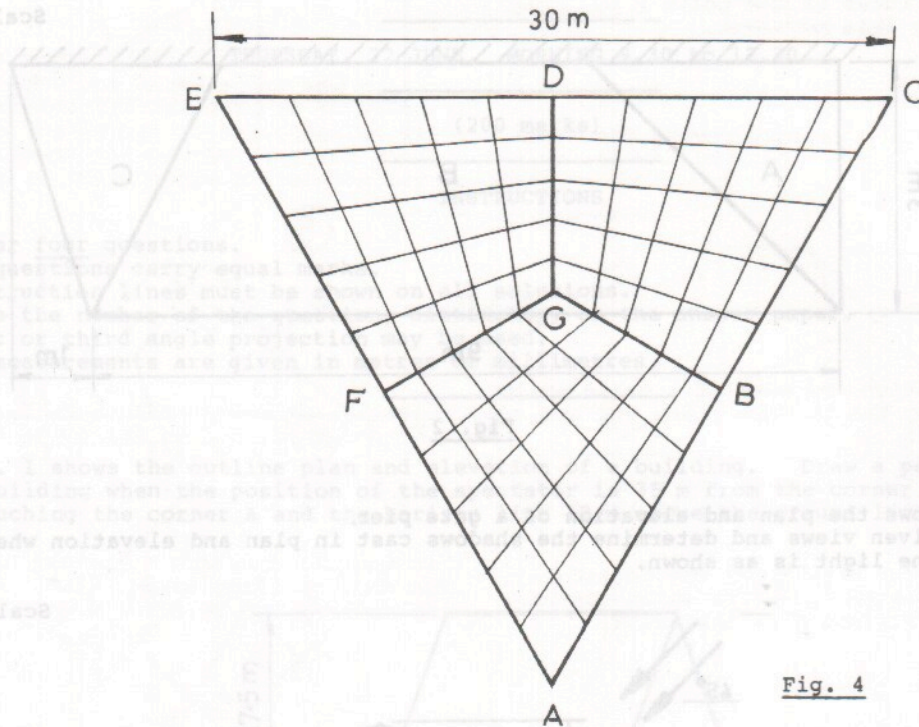


Fig. 4

5. Fig. 5 shows the elevation and a sectional elevation S-S of a keystone for an arch. Draw the given views and draw an isometric view of the keystone.

Scale 1 : 5.

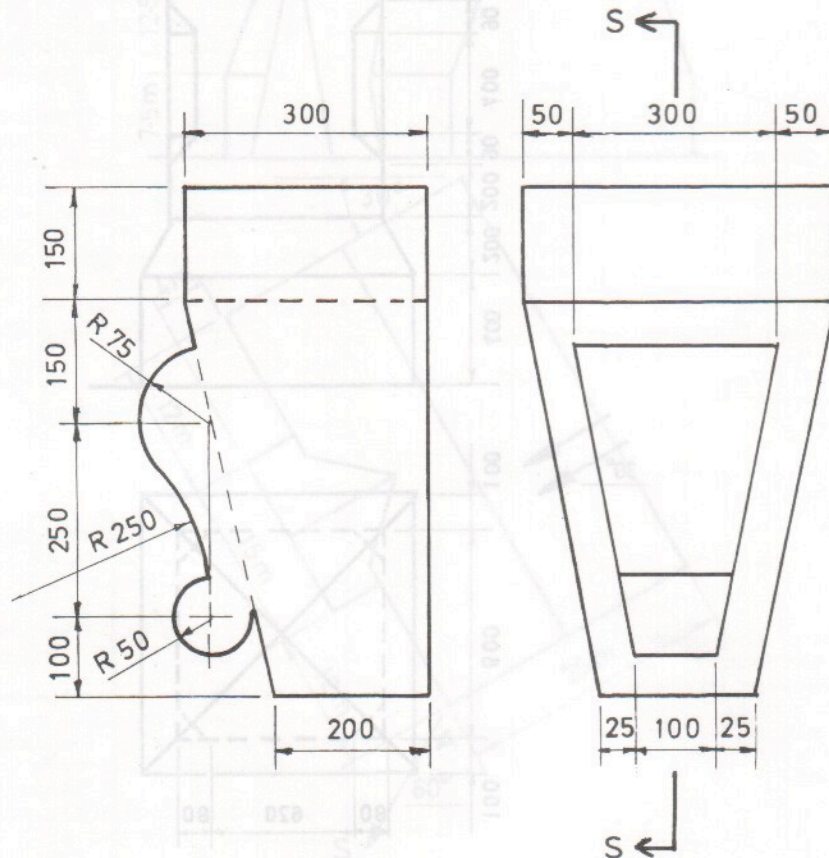


Fig. 5

6. Fig. 6 shows the outline elevation of a tunnel in the form of a hyperboloid of revolution in a children's playground. Also shown are the two circles which determine the main cross-sections of the hyperboloid.

Draw the given elevation and show the true shape of the curve at the end of the tunnel.

Scale 1 : 50.

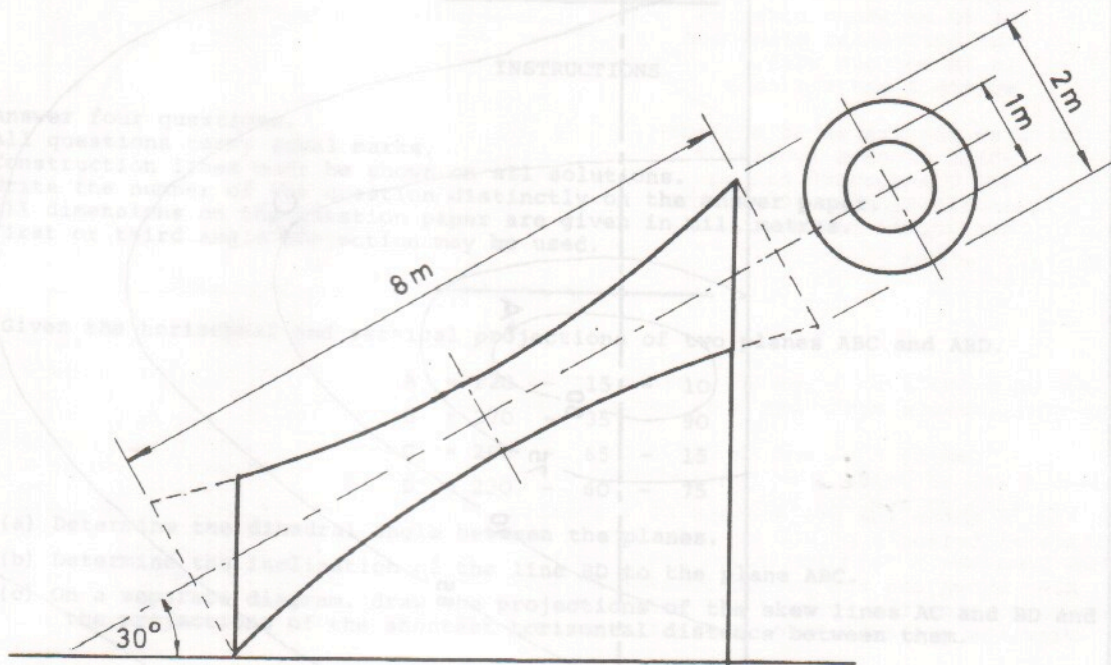
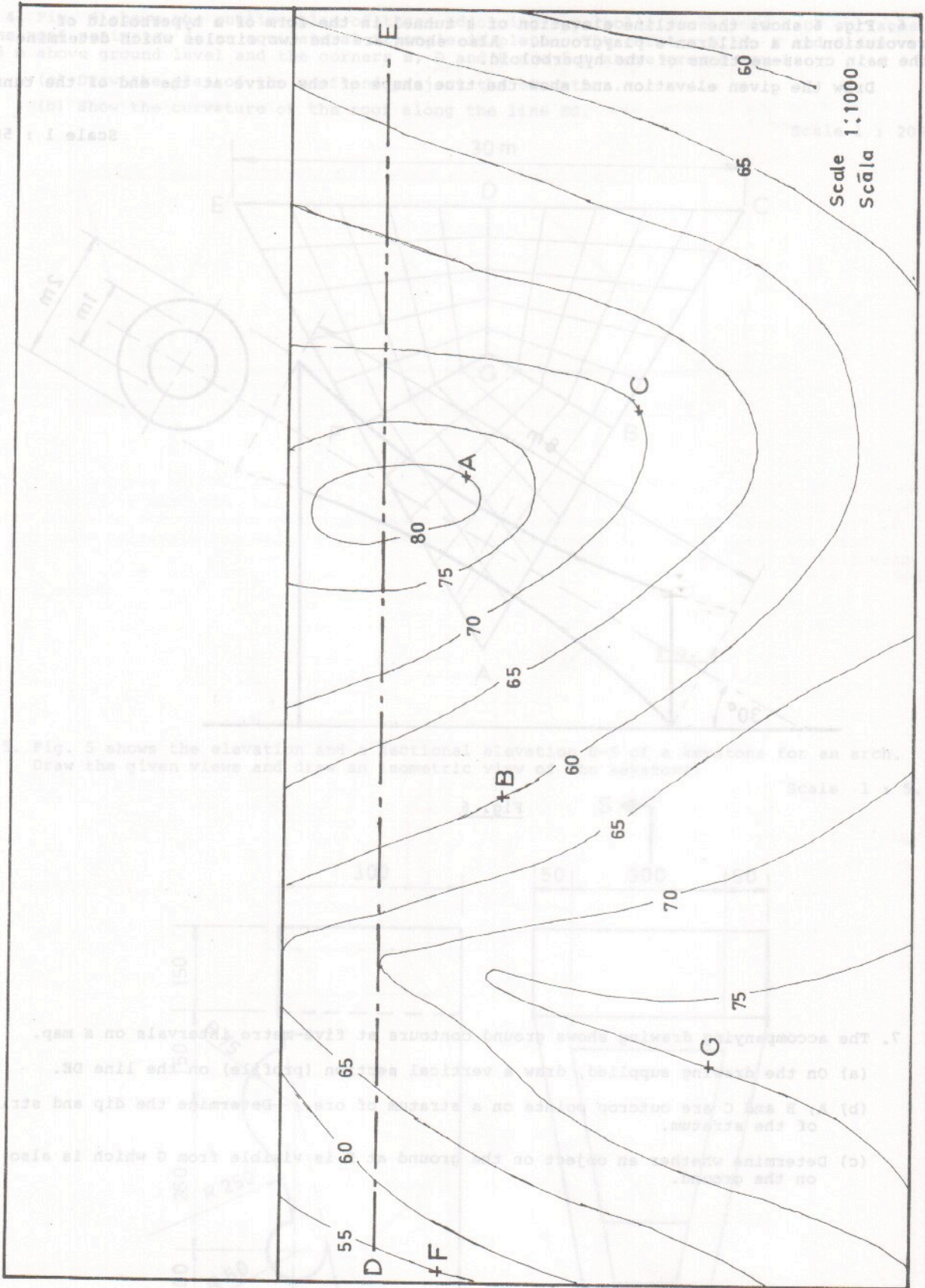


Fig. 6

7. The accompanying drawing shows ground contours at five-metre intervals on a map.
- On the drawing supplied, draw a vertical section (profile) on the line DE.
 - A, B and C are outcrop points on a stratum of ore. Determine the dip and strike of the stratum.
 - Determine whether an object on the ground at F is visible from G which is also on the ground.



Scale 1:1000

Scale 1:1000
Scala

Fig. 3 shows the elevation and sectional elevation of a hill. Draw the given views and show the true shape of the hill. Scale 1:1000

7. The accompanying drawing shows ground contours of a hill. (a) On the drawing supplied, draw vertical section (profile) on the line DE. Determine the dip and strike of the section. (b) A line C-C is drawn on a straight line on the ground. Determine whether an object on the ground is visible from C which is also on the section.