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(Confidential)

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B.Arch. Part I-1st Semester Final Examination, 2008-09

DESCRIPTIVE GEOMETRY (AR 103)

Time: 3 hours

Full Marks: 70

1. A straight line **PQ**, 90 mm long, is inclined at 30° to the H.P. Its end **P** is 12 mm above the H.P and 20 mm in front of the V.P. Its front view measures 65 mm. Draw the projections (top view, front view and side view) of the straight line **PQ** and determine its true inclination with the V.P. and apparent inclination with the H.P.

OR

A straight line **AB**, 65 mm long, has its end **A** at 20 mm above the H.P. and 25 mm in front of the V.P. The projections of the end **B** is 40 mm above the H.P. and 65 mm in front of the V.P. Draw the projections of **AB** (top view, front view and side view) and determine its true inclinations with the H.P. and the V.P.

[14]

2. The top view of a plate, the surface of which is perpendicular to the V.P. and inclined at 60° to the H.P., is a circle of 60mm diameter. Draw its plan, front view and side view

OR

A square lamina **ABCD** of 50 mm side has its corner **A** in the H.P. Its diagonal **AC** is inclined at 30° to the H.P. and the diagonal **BD** is inclined at 45° to the V.P. and parallel to the H.P. Draw its plan, front view and side view.

[14]

3. A hexagonal pyramid, base 25 mm side and axis 55 mm long, has one of its slant edges on the ground. A plane containing that edge and the axis is perpendicular to the ground and inclined at 45° to the V.P. Draw its plan elevation and side view when the apex is nearer to the V.P. than the base

OR

A pentagonal pyramid, base 25 mm side and axis 55 mm long, has one of its triangular faces in the V.P. and the edge of the base contained by that face makes an angle of 30° with the H.P. Draw its plan, elevation and side view.

[14]

4. A hexagonal pyramid, base 30mm side and axis 75 mm long, resting on its base on the ground with two of its edges parallel to the V.P. A horizontal section plane cuts the axis at a point 35 mm from the apex. Another plane, which makes an angle of 45° with the H.P., also intersects the axis at the same point. Draw the front view, sectional top view and true shape of the section.

OR

A hollow square prism, base 50 mm side (outside), length 75mm and thickness 9mm, is lying on the ground on one of its rectangular faces, with the axis inclined at 30° to the V.P. A section plane, parallel to the V.P. cuts the prism, intersecting the axis at a point 25 mm from one of its ends. Draw the top view and sectional front view of the prism.

[14]

5. A pentagonal prism, base 30 mm side and axis 75 mm long is resting on the ground with one of its side parallel to the V.P. It is cut by a section plane, which is perpendicular to the V.P., inclined at an angle of with the 45° H.P., and bisects the axis of the prism. Develop the surface of the prism assuming the portion above the section plane is removed.

OR

Develop the surface of the solid indicated by its orthographic projections in Figure 1.

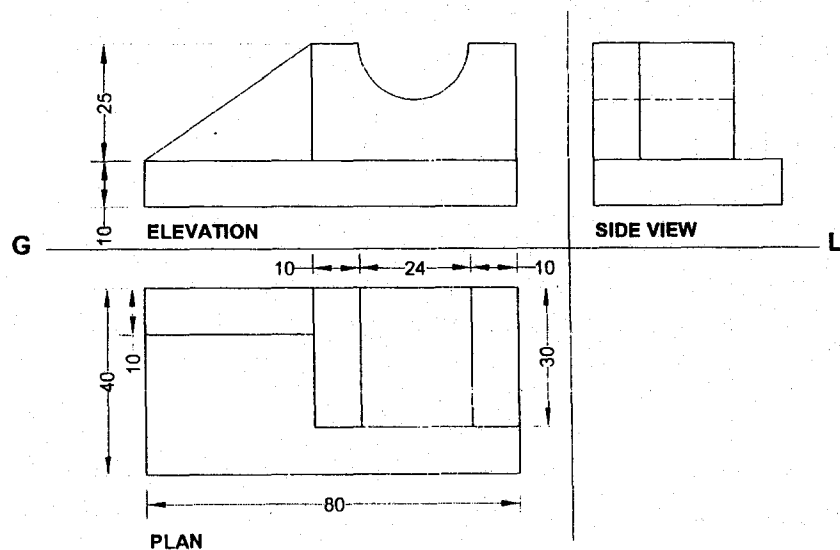


Figure 1

[14]