

B. Arch. Part 11st Semester Final Examination 2009-10
AR 103: DESCRIPTIVE GEOMETRY

Time: 3hours

Full Marks: 50

1. On a map the distance between two points is 14 cm. The real distance between them is 20 Km. Draw a diagonal scale for this map to measure upto 25 Km. Show a distance of 17.65 Km on this scale.

OR

The foci of an ellipse are 90 mm apart and the minor axis is 65 mm long. Graphically determine the length of the major axis and draw the ellipse. [10]

2. A square lamina of 75 mm side has a circular hole of 60 mm diameter at its center. The lamina is resting on the H.P. on one of its corners, which is 20 mm in front of the V.P., and all the sides of the square are equally inclined to the H.P. The plane of the lamina is perpendicular to the H.P. and inclined at an angle of 30° with the V.P. Draw the top view, front view and side view.

OR

Two straight lines AB and AC make an angle of 120° between them in their front view and top view. AB is parallel to both the H.P. and the V.P. Determine the real angle between AB and AC . [10]

3. A square pyramid, base 40mm side and axis 65 mm long, is freely suspended from one of the corners on its base. Draw the plan, elevation and side view of the pyramid if the vertical plane passing through its axis makes an angle of 45° with the V.P.

OR

A triangular prism, base 40 mm side and axis 50 mm long, is lying on the ground on one of its rectangular faces with its axis inclined at an angle of 60° with the V.P. A cone, base 40 mm diameter and axis 50 mm long, is resting on the ground, leaning centrally on the face of the prism with its axis making an angle of 90° with that of the prism in plan. Draw the top view and front view of the solids. [15]

4. A hexagonal pyramid, base 30 mm side and axis 75 mm long, is resting on its base on the ground with two of its edges parallel to the V.P. It is cut by two section planes, both perpendicular to the V.P. The horizontal section plane cuts the axis at a point 35 mm above the apex. The other section 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, true shape of the section and development of the surface of the remaining part of the pyramid

OR

A cylindrical pipe of 30 mm diameter has a similar branch of the same size. The axis of the branch intersects that of the main pipe at an angle of 45° . Draw the top view and the front view, when the two axes lie in a plane parallel to the V.P. and the axis of the main pipe is vertical. Also develop the surfaces of the two pipes, assuming suitable lengths. [15]