

2. (a) The end P of a line PQ is 30 mm above HP and 35 mm in front of VP. The line is inclined at 35° to the HP. Its top view is 70 mm long and inclined at 40° to XY. Draw the projections of the straight line. Find the true length and inclination of the line with the VP. (20)

OR

2. (b) A circular plate of 60 mm diameter has a hexagonal hole of 20 mm sides centrally punched. Draw the projections of the lamina resting on the HP with its surface inclined at 30° to the HP and the diameter through the point on which the lamina rests on HP is inclined at 50° to VP. Any two parallel sides of the hexagonal hole are perpendicular to the diameter of the circular plate passing through the point on which it rests. Draw the projections. (20)
3. (a) A cone, diameter of base 55 mm and height 60 mm, is resting on H.P. on one of its generators with axis parallel to V.P. Draw the projections of the cone. (20)

OR

3. (b) Draw the top and front views of a rectangular pyramid of sides of base 20×25 mm and height 35 mm when it lies with one of its triangular faces containing the longer edge of the base on HP. This longer edge containing the triangular face lying on HP is perpendicular to VP. (20)
4. (a) A square pyramid of base side 25 mm and height 40 mm rests on HP with its base edges equally inclined to VP. It is cut by a plane perpendicular to VP and inclined at 30° to HP meeting the axis at 21 mm from the base. Draw the sectional top view and true shape of the section. (20)

OR

4. (b) Draw the development of the lower portion of a cylinder of diameter 50 mm and axis 70 mm when sectioned by a plane inclined at 40° to H.P and perpendicular to V.P and bisecting the axis. (20)
5. (a) A cylinder of diameter of base 60 mm and height 70 mm rests with its base in HP. A section plane perpendicular to VP and inclined at 45° to HP cuts the cylinder such that it passes through a point on the axis 50 mm above the base. Draw the isometric projection of the truncated cylinder showing the cut surface. (20)

OR

5. (b) A rectangular pyramid of sides of base 30 mm and 20 mm and height 35 mm rests with its base on the ground such that one of the longer base edges is parallel to the picture plane and 30 mm behind it. The station point is 50 mm in front of the picture plane, 30 mm to the left of the axis of the pyramid and 50 mm above the ground. Draw the perspective view of the pyramid. (20)