

Indian Institute of Space Science & Technology
Thiruvananthapuram
B.Tech. Second Semester (Jan - June 2023)
AE 141: Engineering Graphics
Tutorial-4
Topic: Section of solids

Note: Draw these questions on the back side of the notebook, and bring the notebook while coming to the Engineering graphics lab sessions.

1. A right circular cone, height 75mm and base circle diameter 50mm is resting on its base. It is cut by cutting plane perpendicular to VP, parallel to one of its generators and passing through the midpoint of axis. Draw the sectional top view, front view and the true shape of the section.
2. A right circular cylinder of height 60mm and base circle diameter 50mm is resting on its base. It is cut by a cutting plane perpendicular to VP, inclined at 63° with HP and passing through a point on the axis 40mm above the base. Draw the sectional front view, top view and side view of the bottom portion and the true shape of the section.
3. A pentagonal prism of side of base 30mm and height 70mm has coaxial hole of 30mm diameter. The prism is placed with its axis vertical and is cut by a plane inclined at 40° to the HP and bisecting the axis. Draw the true shape of the section.
4. A hexagonal pyramid of base side 25 mm and axis 60mm rests on its base on the HP with two base edges perpendicular to the VP. Draw the elevation, sectional plan and the true shape of the section. (a). Plane perpendicular to VP and inclined at 30° to the HP meeting the axis at 25mm from the vertex. (b). Plane perpendicular to HP and inclined 40° to VP passing through a point 10mm in front of the axis.
5. A tetrahedron of 100mm edge is resting on one of its triangular faces on HP with an edge perpendicular to VP. It is cut by a section plane perpendicular to VP and inclined to HP so that the true shape of the section is a trapezium with opposite sides 80mm and 64mm. Draw the front view, sectional top view and true shape of the section. Measure the inclination of the section plane.
6. A pentagonal pyramid of side of base 30mm and axis 75mm long is resting on the ground on one of its triangular faces, its axis being parallel to the VP. It is cut by a section plane perpendicular to the VP and is inclined at 40° to the HP and passing through the mid- point of the axis, the apex portion being removed. Draw sectional top view, front view and true shape of section.
7. A square pyramid of base edge 28 mm and axis 55 mm long is resting on HP on its base with a base edge inclined 20° to VP. It is cut by a section plane perpendicular to both HP and VP, cut the solid at a distance of 5 mm away from the axis, towards the left. Draw the front view, top view, and sectional side view.