

SHORT ANSWER QUESTIONS:

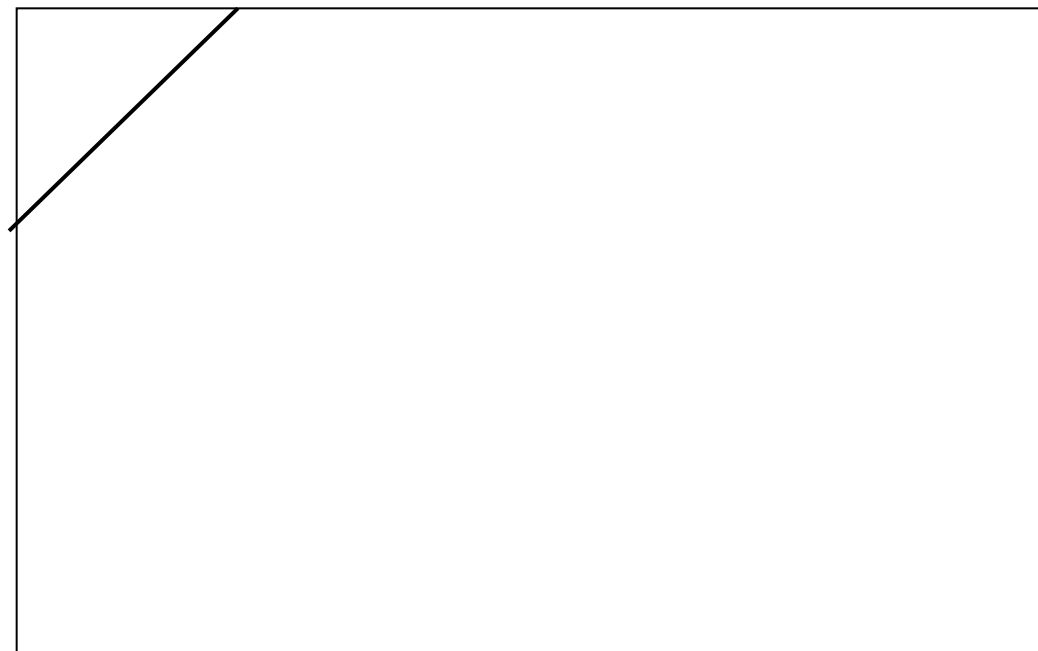
- 1) Define Sectioning and Section of solids.
- 2) Discuss the need for sectioning of solids in engineering practices?
- 3) Distinguish between true and apparent sections.
- 4) What do mean by an auxiliary inclined cutting plane and auxiliary vertical cutting plane?
- 5) Distinguish between truncated solid and frustum of a solid.
- 6) What is meant by the development of a solid and Explain the importance of development of surfaces in engineering.
- 7) List out the various methods for development of regular solids.
- 8) Write down the applications of development of surfaces.
- 9) Explain the method for the development of prisms, cylinders, pyramids and cones.
- 10) What is the radial length and included angle for the development of cone of size 60 base diameters and 60 axis length?
- 11) What do you mean by intersection of surfaces?
- 12) List out the applications of intersection of surfaces.
- 13) Define the term “Line of Intersection”.
- 14) Differentiate between Cutting Plane Method and Generator method of obtaining the line of intersection.
- 15) List out the rules of visibility in intersection of surfaces.

LONG ANSWER QUESTIONS:

1. A triangular prism, having a base with a 50 mm side and an 80 mm long axis, is lying on one of its rectangular faces on the H.P. with its axis perpendicular to the V.P. It is cut by a section plane parallel to and 20 mm above H.P. Draw its front view and sectional top view.
2. A pentagonal pyramid, having a base with a 30 mm side and a 70 mm long axis is resting on its base on the H.P. with a side of base parallel to the V.P. and nearer to it. It is cut by a section plane parallel to the V.P. and 12 mm in front of axis of the pyramid. Draw its sectional front view and top view.
3. A square pyramid, having a base with a 40 mm side and a 70 mm long axis is resting on its base on the H.P. with all the sides of base are equally inclined to V.P. It is cut by a section plane inclined to H.P. by 30° & passing through midpoint of axis. Draw its front view, sectional top view, sectional side view and true shape of the section.
4. A pentagonal prism of base 30 and 60 long axis has an edge of its base is on H.P. and axis is parallel to the V.P. and inclined at 60° to the H.P. It is cut by an A.I.P. inclined at 45° to the H.P. and passing through the highest corner of the prism. Draw its sectional top view and true shape of the section.
5. A cylinder of 50 dia and 70 long axes is resting on its base on the H.P. The V.T. of cutting plane cuts the axis at a point 40 mm from the bottom face and makes an angle of 45° with the reference line. Draw its front view, sectional top view, sectional side view and true shape of the section.
6. A cylinder, with a 50 mm base diameter and a 60 mm long axis, is resting on its base on the H.P. A section plane parallel to the V.P. cuts the cylinder at a distance 17 mm from the axis. Draw its sectional front view and top view.
7. A pentagonal prism, having a base with a 40 mm side and a 70 mm long axis, is kept on its base on the H.P. with a rectangular face perpendicular to V.P. It is cut by an A.I.P. such that the true shape of the section is an isosceles triangle of largest base and a 60 mm altitude. Draw the sectional top view and true shape of the section.
8. A hexagonal prism, having a base 30 and 70 long axis is resting on its base on the ground with a side of base inclined at 45° to the V.P. It is cut by an AIP making an angle of 45°

with the H.P and passing through a point 15mm below the top end of the axis. Obtain the development of the lateral surface of the truncated prism.

9. A pentagonal prism of height 60 and base 30 is resting on its base with one base edge parallel to V.P. A square hole edge 30 with axis perpendicular to V.P and bisecting the vertical axis is drilled through the prism. Develop the lateral surface of the prism if sides of the holes are equally inclined to H.P.
10. A cone with a 50 base dia and 70 long axis, rests on its base on the H.P. Draw the development of its lateral surface with it is cut by an AIP bisecting the axis and inclined at 45° to the H.P.
11. A cylinder of base diameter 50mm and axis 70mm is resting on ground with its axis vertical. It is cut by a section plane perpendicular to the VP, inclined at 45° to the HP, passing through the top of a generator and cuts all the other generators. Draw the development of its lateral surface.
12. A cylinder of base 60 and height 70 is resting on its base on H.P. A triangular hole side 50 is drilled through this pyramid in such a way that the axis of the hole is perpendicular to V.P., 10 away from the axis of the cylinder and 28 above H.P. Develop the lateral surface of the cylinder.
13. A hexagonal prism of base 30 and 75 heights is resting on its base on H.P. with one base edge parallel to V.P. A circular hole of 44 dia is drilled through this prism in such a way that the axis of the hole is perpendicular to V.P., 9 to the right to the axis of the solid and 30 above H.P. Develop the lateral surface of the prism.
14. Draw the development of solid, shown in figure 1.



15. A pentagonal pyramid of base 30mm and axis 60mm rests on its base on the HP, with a side of the base parallel to the VP. It is cut by two section plane which meet at a height of 20mm from the base. One of the section planes is horizontal, while the other is an auxiliary inclined plane whose VT is inclined at 45° to the HP. Draw the development of the lateral surface of the solid when apex is removed.
16. A cylinder with a 60mm base diameter and height 80mm long is resting on its base on H.P. It is penetrated by another cylinder of 50mm base diameter and height 90mm long, such that their axes intersect each other at right angles. Draw the projections of the combination and show the curves of intersection.
17. A cylinder with a 60mm base diameter and height 80mm long is resting on its base on H.P. It is penetrated by another cylinder of 40mm base diameter and height 90mm long, the axis of which is parallel to both the principal planes. The two axes are 10mm apart. Draw the projections of the combination and show the curves of intersection
18. A cylinder with 60mm base diameter and 80mm long axis is resting on its base on H.P. It is penetrated by another cylinder with 30mm base diameter and 110mm long axis. The axis of both the cylinders is parallel to V.P. and bisects each other at an angle of 45° . Draw the projections and show their curves of intersection.