CLASS XII
TOPIC: ISOMETRIC PROJECTION

SINGLE SOLIDS

1. Draw an isometric scale.
2. A hexagonal prism of base side 30 mm and height 60 mm is resting on HP on its base and two of its base sides parallel to VP. Draw its isometric projection to isometric scale. Mark all dimension sand direction of view.
3. Draw the isomeric projection of a cube of side 50 mm.
4. Draw the isometric projection of a square prism base side 40 mm and height 70 mm with its base on HP and base side parallel to HP.
5. Draw the isometric projection of a square prism base side 40 mm and height 70 mm with its base on HP and base side perpendicular to HP.
6. Draw the isometric projection of an equilateral triangular prism of base 50 mm and height 78 mm resting g on its base ion HP. With one of the base edge parallel to VP in the front.
7. An equilateral triangular prism of 58mm base and height 87 mm rests on its face on HP.with its axis perpendicular to VP. Draw its isometric projections.
8. Draw the isometric projection of a pentagonal prism of base 39 mm and height 65 mm. the axis of the prism is perpendicular to HP. And one of the base edge perpendicular to VP.
9. A pentagonal prism of base side 25 mm and axis height 55 mm is resting on its face on with its axis parallel to both vp and hp.Draw its isometric projections.
10. Draw the isometric projection of a pentagonal pyramid of base side30 mm and axis 50 mm resting on its base on HP. With one of the base side parallel to V.P
11. Draw the isomtric projection of a inverted hexagonal pyramid of base side 30 mm and axis 55 mm resting on its abse on HP.with one of the base side parallel to VP and nearer to the observer.
12. Draw the isometric projection of a square pyramid base edge 57 mm and height 80 mm kept in inverted position with two of its base edged parallelto VP.
13. Draw the isometric projection of a triangular pyramid base edge 50 mm and height 70 mm kept on uts abse and one of the base side parallel to VP and away from it.
14. Draw the isometric projection of a inverte triangular pyramid of base side 45 mm and height 60 mm keeping one f the bvase side parallel to VP and nearer to it.
15. Draw the isometric projection of a hexagonal pyramid of base side 34 mm and height 60 mm resting on its base and one of the base side parallelto Vp and nearer to the observer.
16. Draw the isometric projection of a hexagonal pyramid of base side 30 mm and axial height 70 mm keeping one of the base side perpendicular to VP.
17. Draw the isometric projection of a cylinder of diameter 40 mm and axial length of 70 mm lying on the H.P. keeping its axis parallel to H.P. and V.P. both.
18. Draw the isometric projection of a cylinder of height of 75 mm and diameter of 50 mm resting on its base keeping the axis parallel to V.P.
19. Draw the isometric projection of cone of diameter 40 mm and axis of 60 mm resting on its base perpendicular to H.P.
20. Draw the isometric projection of an inverted cone of diameter 50 mm and axis of 80 mm keeping its axis perpendicular to H.P.
21. Draw the isometric projection of a sphere of diameter 50 mm

22. Draw the isometric projection of a hemisphere of 60 mm diameter resting on its curved surface on H.P.

FRUSTUMS

1. Draw the isometric projection of a frustum of a aquare pyramid of shorter base edge 30 mm and longer base edge 50 mm and axial height 60m m kept on its longer end and two of its abse edges are parallel to VP.
2. Draw the isometric projection of a frustum of a squre pyramid of shorter base edge 30 mm and longer base edge 40 mm and axial lengtb 60 mm kept on its shorter edge on HP and two of its abse edges parallelto VP.
3. Draw the isometric projection of a frustum of a truiangualr pyrmid having top base edge 40mm and bottom edge 50mm and axial height 70mm resting on its longer edge keeping one of its longer base edge parallel to VP and nearer to the obserever.
4. A frustum of an inverted hexagonal pyramid of shorter base side 20 mm and longer base side 40 mm and axial height of 65 mm resting on its shorter end on H.P. with two of its base sides perpendicular to the V.P. Draw its isometric projection.
5. Draw the isometric projection of frustum of pentagonal pyramid having longer base side 40 mm and shorter base side 30 mm with axis of 70 mm resting on its longer side base keeping one of its base side parallel to the V.P. and nearer to the observer.
6. Draw the isometric projection of a frustum of a cone of diameter 30 mm at smaller end, diameter 50 mm at bigger end and the axial height is 70 mm. It is resting on its bigger end on H.P. keeping its axis vertical.

COMBINATION OF TWO SOLIDS

1. Draw an Isometric Projection of a square prism having side of the square = 30 mm and height = 54 mm standing (upright) and centrally on a flat square slab of thickness = 26 mm and its base side = 52 mm.
2. Draw an Isometric Projection of 32 mm cube resting centrally on the top face of an equilateral triangular prism having 50 mm base side and height = 30 mm. One rectangular face of the prism is away from the observer and kept parallel to the V.P.
3. Draw an Isometric Projection of a square pyramid resting vertically and centrally on the top pentagon face of a pentagonal prism, having one rectangular face parallel to V.P. while closer to the observer. Side of the square base = 30 mm, height of pyramid = 50 mm, side of the pentagon = 34 mm and height of the prism = 52 mm.
4. Draw an Isometric Projection of an equilateral triangular pyramid resting vertically and centrally with one base edge, at the back, parallel to V.P. on the top face of a hexagonal prism having two of its rectangular faces parallel to V.P. Side of the triangle = 34 mm, height of pyramid = 50 mm, side of the hexogen = 30 mm and height of the prism = 60 mm.
5. Draw an Isometric Projection of a vertical regular pentagonal pyramid resting centrally, having one base edge away from the observer parallel to V.P., on top of a vertical cylinder. Side of the pentagon = 32 mm, height of pyramid = 50 mm, diameter of cylinder = 76 mm and height of cylinder = 40 mm.
6. Draw an Isometric Projection of a right circular cone resting vertically and centrally on the top of pentagonal slab having one of its rectangular face perpendicular to the observer. Side of pentagon = 46 mm, thickness of slab = 30 mm, diameter of cone = 40 mm and height of cone = 60 mm.
7. Draw an Isometric Projection of hemisphere resting centrally on its curved surface, on the top horizontal rectangular face of an equilateral triangular prism, keeping two triangular faces parallel to the V.P. Side of equilateral triangle = 50 mm, length of the prism = 70 mm and diameter of the hemisphere = 60 mm.

8. Draw an Isometric Projection of a sphere resting centrally on a rectangular face of a horizontal hexagonal prism having its hexagonal ends perpendicular to V.P.. Side of hexagon = 30 mm, length of the prism = 80 mm and diameter of sphere = 60 mm.

9. Draw an Isometric Projection of a right circular cone resting vertically and centrally on the top horizontal rectangle of a pentagonal prism having its axis parallel to H.P. and V.P. both. Side of pentagon = 34 mm, length of the prism = 80 mm, diameter of the cone = 44 mm and height of cone = 60 mm.

10. Draw an Isometric Projection of a vertical regular hexagonal pyramid resting vertically and centrally having two of its base edges perpendicular to V.P.. On the top rectangular face of a horizontal square prism with its square ends perpendicular to V.P.. Side of the square = 50 mm, length of the prism =100 mm, side of the hexagon = 30 mm and height of the pyramid = 60 mm