**ME1001 Engineering Graphics**

**Projection of planes**

1. The top view of a plane object is a regular hexagon of side 40, with a central hole of 30 diameter and with two sides of the hexagon parallel to xy, when the surface of the object is inclined at 45° to H.P and with a corner on H.P. Determine the true shape of the object.
2. A regular hexagonal plane of 45 side has a corner on H.P, and its surface is inclined at 45° to H.P. Draw the projections, when the diagonal through the corner, which is on H.P, makes 30° with V.P.
3. A circle of 40 diameter, is resting on H.P on a point, with its surface inclined at 30° to H.P. Draw the projections of the circle, when (i) the top view of the diameter, through the resting point, makes an angle of 45° with xy and (ii) the diameter passing through the resting point makes an angle of 45° with V.P.
4. A composite plate of negligible thickness is made up of a rectangle 60 × 40 and a semi-circle on one of its longer sides. Draw its projections when the longer side is parallel to the H.P and inclined at 45° to V.P. The surface of the plate makes 30° angle with H.P.
5. A regular pentagon of side 30 side is resting on one of its edges on H.P, which is inclined at 45° to V.P. Its surface is inclined at 30° to H.P. Draw its projections.
6. Draw the projections of a rhombus having diagonals 120 and 50 long; the smaller diagonal being parallel to both the principal planes, while the other is inclined at 30° to H.P.
7. A regular hexagonal plane of 45 side has a corner on H.P, with its surface inclined at 45° to H.P. Draw its projections when (i) the top view of the diagonal through the resting corner makes 30° with V.P and (ii) the diagonal itself makes 30° with V.P.
8. Draw the projections of a circle of 75 diameter having the end A of the diameter AB on H.P and the end B on V.P, and the surface inclined at 30° to H.P and 60° to V.P.
9. Draw the projections of a regular pentagon of 50 side having its surface inclined at 45° with H.P. A side of the pentagon lies on H.P and inclined at 30° to V.P.
10. Draw the projections of a regular hexagon of 25 side having one of its sides in H.P and inclined at 60° to V.P and its surface making an angle of 45° with H.P.