# Assignment : Sheet No. 9 – Projections on Auxiliary planes

1. A regular hexagon of 40 mm side has a corner in the H.P. Its surface is inclined at $45^o$ to the H.P. and the top view of the diagonal through the corner, which is in the H.P., makes an angle of $60^o$ with the V.P. Draw its projections.

2. Draw the projections of a rhombus having diagonals 125 mm & 50 mm long, the smaller diagonal of which is parallel to both the principal planes, while the other is inclined at $30^o$ to the H.P.

3. Draw a regular hexagon of 40 mm side, with its two sides vertical. Draw a circle of 40 mm diameter in its centre. The figure represents a hexagonal plate with a hole in it & having its surface parallel to the V.P. Draw its projections when the surface is vertical & inclined at $30^o$ to the V.P. Assume the thickness of the plate to be equal to that of a line.

4. A semi circular plate of diameter 80 mm has its straight edge in the V.P. & inclined at $45^o$ to the H.P. The surface of the plate makes an angle of $30^o$ with the V.P. Draw its projections.

5. The top view of a plate, the surface of which is perpendicular to the V.P. & inclined at $60^o$ to the H.P. is a circle of 60 mm diameter. Draw its three views.

6. A composite plate of negligible thickness is made up of a rectangle 60 mm × 40 mm, and a semi circle on its longer side. Draw its projections when its longer side is parallel to the H.P. & inclined at $45^o$ to the V.P. , the surface of the plate making $30^o$ angle with the H.P.

7. A plane figure is composed of an equilateral triangle ABC & a semi-circle on AC as diameter. The length of the side AB is 50 mm & is parallel to the V.P. The corner B is 20 mm behind the V.P. & 15 mm below the H.P. The plane of the figure is inclined at $45^o$ to the H.P. Draw the projections of the plane figure.

8. An equilateral triangle ABC having side length as 50 mm is suspended from a point O on the side AB  15 mm from A in such a way that the plane of the triangle makes an angle of $60^o$ with the V.P. The point O is 20 mm below the H.P. & 40 mm behind the V.P. Draw the projections of the triangle.