Unit II - Projection of planes (Assume all planes are regular polygons)

1. A square plane ABCD of side 25 mm is parallel to H.P. and 20 mm away from it. Draw the projections of the plane when two of its sides are (i) parallel to V.P (ii) inclined at 30^0 to V.P.
2. The equilateral triangular plane ABC of side 30 mm has its plane parallel to V.P. and 20 mm away from it. Draw the projections of the plane when one of its sides is (i) perpendicular to H.P. (ii) parallel to H.P. (iii) inclined at 45^0 to H.P.
3. An equilateral triangular plane of 25 mm side has an edge in the H.P. with its surface perpendicular to the V.P. and inclined at 45^0 to the H.P. Draw its projections.
4. Draw the projections of a regular pentagon 25 mm side with its surface, making an angle of 45^0 with H.P. One of the sides of the pentagon is parallel to H.P. and 15 mm away from it.
5. A pentagonal plane with 25 mm side rests on H.P. on one of its corners with its surface inclined at 30^0 to the H.P and perpendicular to V.P. Draw its projections when the side opposite to the corner is parallel to the H.P.
6. A pentagonal plane with 25 mm long edge rests on a corner in the VP such that the edge opposite to that corner is perpendicular to HP. The surface of the plane is inclined at 45^0 to the VP. Draw its projections.
7. A pentagonal plane of 20 mm side rests on one of its edges in the V.P. and the surface of the plane makes an angle 45^0 with the V.P. and perpendicular to H.P. Draw its projections.
8. A hexagonal plane of 30 mm side rests on one of its edges in H.P. Its surface makes an angle of 45^0 to H.P and perpendicular to V.P. Draw the projections.
9. A rectangular plane 60 mm x 40 mm in size rests on HP on one of its shorter edges, with its surface inclined at 60^0 to HP and perpendicular to VP. Draw its projections.
10. An isosceles triangular plane ABC with a 30 mm base and altitude of 60 mm has its base in the V.P. and surface is inclined at 45^0 to the V.P. Draw its projections.
11. Draw the projections of a circle of 50 mm diameter having a point on the circumference of the circle in H.P, such that its surface makes an angle of 40^0 with H.P. Draw the projections.
12. A semi-circular plane with a radius 25 mm rests on the H.P., on its diameter with its surface perpendicular to the V.P. and inclined at 30^0 to the H.P. Draw its projections.
13. Draw the projections of the circle of 50 mm diameter, having its plane vertical and inclined at 30^0 to V.P. Its center is 30 mm above H.P. and 30 mm in front of V.P.
14. A hexagonal plane with 35 mm side as a centrally punched circle of 40 mm diameter. An edge of the plane is in the V.P. and its surface is perpendicular to H.P. and inclined at 45^0 to the V.P. Draw its projections.
15. A regular hexagonal plane of 30 mm side has a corner at 20 mm from the V.P and 50 mm from the H.P. Draw the projections of the plane when its surface is inclined at 45^0 to the V.P. and perpendicular to H.P.
16. A square lamina is placed in such a way that its corner is resting on H.P. and the diagonal through this corner makes 30^0 with H.P. and surface is perpendicular to V.P. Draw the projections of the plane.
17. A Rhombus of diagonals 80 mm & 50 mm is resting on one of its corners in H.P such that the longer diagonal is inclined at 30^0 to H.P. and parallel to V.P.
18. A square lamina is placed such that one of the corners touches the V.P. when the diagonal is perpendicular to V.P. and measures 60 mm. The other diagonal appears to be 40 mm in the view from the above. Draw the projections and find the inclination of the plane to the ground.
19. A circular plane of 50 mm diameter appears as an ellipse in the top view, with the major axis as 50 mm and the minor axis as 35 mm. Draw the projections and determine its inclination with HP.
20. A square ABCD with a 35 mm side is suspended from a point O, which is on side AB, 15 mm from A. The plane is parallel to and 20 mm in front of the V.P. Draw its projections of the plane.