**ASSIGNMENT-1**

1. Construct a plain scale of 1cm=0.5km, to read kilometers and hectometers and long enough to measure upto 9 kilometers. Find its R.F. and measure a distance of 6km and 4 hectometers on this scale.
2. The area of a field is 50000m2, length and breadth of the field on this drawing sheet is 10cm and 8cm respectively. Construct a diagonal scale which reads upto 400 meters. What is R.F. of the scale? Mark a distance of 235 meters and 324 meters on the scale.
3. Draw an ellipse (Major axis= 80cm and minor axis=50cm.) by concentric circle method. Draw normal and tangent to the ellipse at a point ‘P’ on it.
4. Draw a parabola if the distance of the focus from the directrix is 30mm. Also draw tangent and normal to the curve.
5. ‘P’ is a point with co-ordinate (3,4) w.r.t x and y axis. Draw the locus of P such that product of its distance from x and y axis is always constant.

**ASSIGNMENT-2**

1. A circular wheel of diameter 35mm rolls on a straight line on the ground without slipping. A point **‘A’** lies on the rim of the wheel. Draw the locus of point **‘A’** for one revolution of the wheel. Draw the tangent and normal at point **P** o the curve.
2. Draw an epicycloid of rolling circle of diameter 35mm, which rolls another circle outside of it. The diameter of base circle is 70mm. The curve is drawn for one complete revolution.
3. A rolling circle of diameter 25mm rolls inside another base circle of radius 100mm. Draw the curve traced by a point on the rolling circle for one complete revolution.
4. An inelastic string 145mm long has its one end attached to the circumference of a circular disc of 40mm diameter. Draw the curve traced out by the other end of the string, when it is completely wound around the disc, keeping the string always tight.

**ASSIGNMENT-3**

1. A square prism (base 40mm, height 65mm) has its axis inclined at 45° to the ground and parallel to V.P. The edge of the base which is nearest to the ground level is 10mm above the ground. Draw its, F.V. , T.V. & left hand side view using 1st angle projection method.
2. Draw the F.V. , T.V. and either left hand side view or right hand side view of a right regular hexagonal pyramid , axis height 80mm and side of base 50mm. One side of base is inclined at 45° to V.P. Use 3rd angle projection method.
3. A right regular pentagonal prism, edge of base , 25 mm and height 55 mm rest on an edge of its base in HP such that it’s axis is parallel to VP and inclined to HP at 45°. Draw the projections of solid.
4. A right circular cylinder, diameter of base 40 mm and height 50 mm, rests on HP on its point on base rim such that its axis is inclined at 45° to HP. Draw the projections.

**ASSIGNMENT-4**

1. A square pyramid of 40mm base sides and 60mm axis is cut by an inclined sectional plane (at 45° with respect to base) through the midpoint of the axis. Draw the sectional T.V. and true shape.
2. A square prism (each side of base is 50mm and height 80mm) standing vertically on H.P. is cut by an auxiliary plane inclined at 60° to HP and perpendicular to VP and intersecting the vertical axis at a height of 60mm from the base. Draw the FV, sectional TV, sectional side view and true shape of the section.
3. A right circular cone, dia of base 60mm and axis height 100mm is standing vertically and is cut by a plane inclined at 45° to HP and perpendicular to VP so as to intersect the axis of the cone at a height of 65mm from the base. Draw the FV, sectional TV, sectional side view and true shape of the section.
4. A right regular hexagonal pyramid standing vertically (height of axis 100mm, sides of base 55mm with two sides of base parallel to VP) is intersected by a plane which bisects the axis and is inclined at 30° to HP and perpendicular to VP. Draw the FV, sectional TV, sectional side view and true shape of the section.

**ASSIGNMENT-5**

1. A regular hexagonal prism (each side of base 55cm and axis length 110cm) is lying horizontally. Draw its **isometric projection**.
2. A right circular cone of base diameter 60mm & axis height 100mm is standing centrally on a top of a cube (each side is 100mm). Draw the **isometric view**.
3. A sphere of radius 30mm is placed centrally on top of a square block of size 80mm × 80mm × 20mm. Draw **the isometric projection** of this combination.
4. Draw an isometric view of a frustum of a right circular cone of base diameter 40 mm and the top diameter 25 mm, and height of the frustum is 40 mm.

**ASSIGNMENT-6**

Draw the isometric view of the following orthographic views.





