

SHANTILAL SHAH ENGINEERING COLLEGE, BHAVNAGAR

MECHANICAL ENGINEERING DEPARTMENT

List of Drawing Sheet – EGD (3110013) Even Term 2022

(Civil & Mechanical)

➤ Students must prepare sketch book and drawing sheets on the following topics.

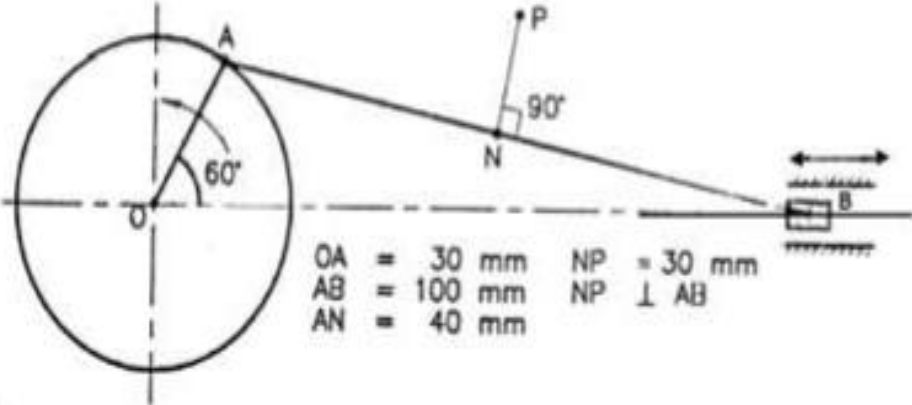
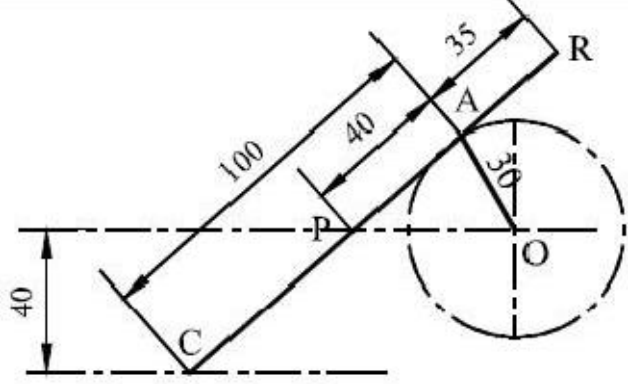
1. Practice sheet :

Practice which includes dimensioning methods, different types of line, construction of different polygon, divide the line and angle in parts, use of stencil.

2. Plane scale and diagonal scale

1.	Construct a scale of 1cm = 1 m to read meters and decimetres and long enough to measure up to 14 meters. Show on this scale a distance equal to 12.4 meters.
2.	The distance between two cities is 700 Kilometers. On inspection of map, it is equivalent of 15 centimetres. Decide Representative Fraction. Draw diagonal scale and indicate on following distances: (1) 598 Kilometers (2) 439 Kilometers (3) 247 Kilometers
3.	The distance between two towns is 250 km and is represented by a line of length 50mm on a map. Construct a scale to read 600 km and indicate a distance of 530 km on it.

3. Loci of points (only sketch book)

1.	<p>A pendulum OC, pivoted at O, is 120 mm long. It swings 30° to the right of vertical and also 30° to the left of vertical. Insect, initially at O reaches the point C, when the pendulum completes one oscillation. Draw the path of the insect, assuming motion of insect and of pendulum as uniform.</p>
2.	<p>OAB is a slider crank mechanism. Slider B is sliding on a straight path passing through O as shown in Figure 1 given below. Crank OA is 30 mm and rotates in anticlockwise direction and length of connecting rod AB is 100 mm. A rod NP of 30 mm length is attached to AB such that AN = 40 mm and NP is perpendicular to AB as shown. Draw locus of point P for one complete revolution of the crank.</p>  <p style="text-align: center;"> $OA = 30 \text{ mm}$ $NP = 30 \text{ mm}$ $AB = 100 \text{ mm}$ $NP \perp AB$ $AN = 40 \text{ mm}$ </p>
3.	<p>The crank OA, 30mm long rotates in anticlockwise direction. The slider C is constrained to slide on the line parallel to a horizontal line passing through O at a distance of 40mm. The point P is 40mm from A on the connecting link AC=100mm. R is the extension point of rod, 35mm from A. Draw the loci of points P and R.</p> 

4. Engineering curves:

1.	Major axis AB & minor axis CD are 100 and 70mm long respectively .Draw an ellipse by arcs of circles method.
2.	A sample of gas is expanded in a cylinder from 10 unit pressure to 1 unit pressure. Expansion follows law $PV=Constant$. If initial volume being 1 unit, draw the curve of expansion. Also Name the curve.
3.	Rod AB 90 mm long rolls over a semi-circular of diameter 50 mm , without slipping from its initially vertical position till it becomes up-side-down vertical. Draw locus of both ends A & B.
4.	Draw locus of a point, 7 mm away from the periphery of a circle which rolls on straight line path. Take circle diameter as 50 mm.
5.	Draw locus of a point on the periphery of a circle which rolls on a curved path. Take diameter of rolling circle 50 mm and radius of directing circle as 75 mm.

5. Projection of Points and line

1.	<p>Draw the projections of the following points on the same X-Y line.</p> <ol style="list-style-type: none"> 1. Point A is 25 mm. above H.P and 30 mm. in front of VP 2. Point B is 20 mm. above H.P and 30 mm. behind VP 3. Point C is 25 mm. below H.P and 35 mm behind VP 4. Point D is 15 mm. below H.P and 30 mm in front of VP 5. Point P is in H.P and 10 mm. is behind VP 6. Point Q is in VP and 25 mm. below HP 7. Point R is in VP and 30 mm. above H.P 8. Point S is in H.P and 35 mm. in front of VP 9. Point T is in both H.P. and V.P.
2.	<p>I) A line AB 70 mm long has its end A 15 mm above HP and 25 mm in front of VP. Its top view has a length of 40 mm. Draw its projections and find the inclination of the line with HP.</p> <p>II) A line MN 55 mm long has its end 25 mm in front of VP and in HP. The line is inclined at 45° to VP. Draw its projections.</p>
3.	A line AB 80 mm long has its end A 20 mm above HP and 25 mm in front of VP. The line is inclined at 45° to HP and 35° to VP. Draw its projections.
4.	A line AB 70 mm long has its end A 35 mm above HP and 30 mm in front of VP. The top view and front view has a length of 45 mm and 60 mm respectively. Draw its projections.
5.	A line PQ has its end P 20 mm above HP and 25 mm in front of VP. The other end Q is 45 mm above HP and 55 mm in front of VP. The distance between the end projectors is 60 mm. Draw its projections. Also find the true length and true inclinations of the line with HP and VP.

6. Projection of plane

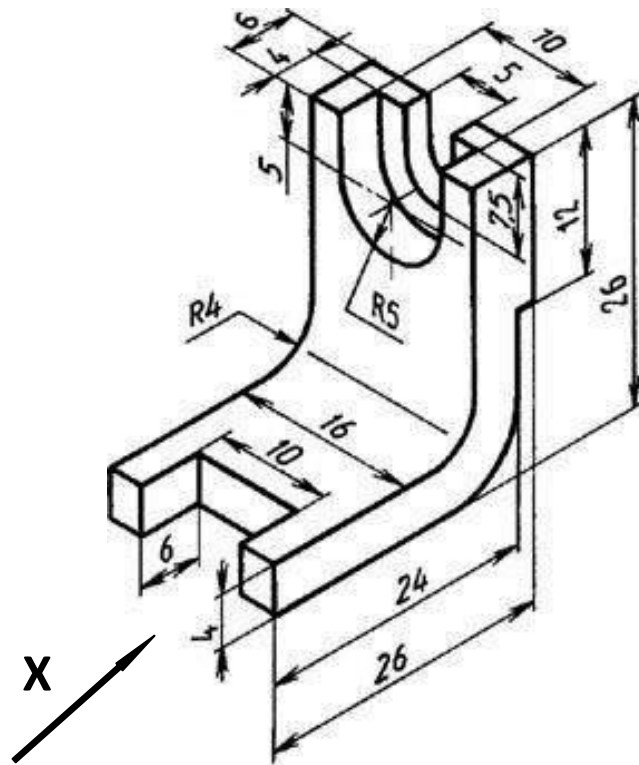
1.	A square lamina of 40 mm side rests on one of its sides on HP. The lamina makes 30° with HP and the side on which it rests makes 45° with VP. Draw its projections.
2.	A $30^\circ - 60^\circ$ set square of longest side 100 mm long is in VP and 30° inclined to HP while its surface is 45° inclined to VP. Draw its projections.
3.	A hexagonal lamina has its one side in HP and its opposite parallel side is 25 mm above HP and in VP. Draw its projections. Take side of hexagon 30 mm long.
4.	A circle of 50 mm diameter is resting on HP on end A of its diameter, which is 30° inclined to HP while its Top View is 45° inclined to VP. Draw its projections.

7. Projection of solid, section of solid and development of Surfaces

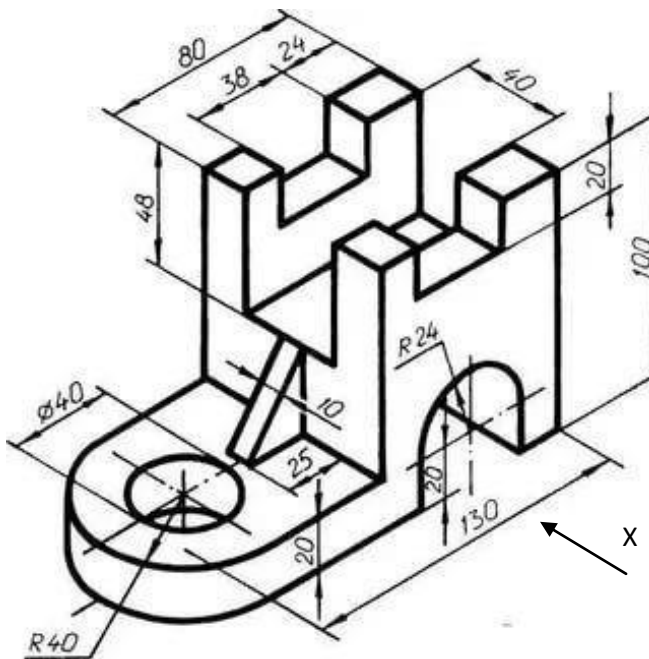
1.	A cone 50 mm diameter and 70 mm axis is resting on one generator on HP which makes 30° inclination with VP. Draw its projections.
2.	A frustum of regular hexagonal pyramid is standing on its larger base on HP with one base side perpendicular to VP. Draw its FV & TV. Project its Aux. TV on an AIP parallel to one of the slant edges showing TL. Base side is 50 mm long, top side is 30 mm long and 50 mm is height of frustum.
3.	Draw the development of the lateral surface of the lower portion of a cylinder of diameter 50 mm and axis 70 mm when sectioned by a plane inclined at 40° to HP and perpendicular to VP and bisecting axis.
4.	A pentagonal pyramid has its base on the HP. Base of the pyramid is 30 mm in side, axis 50 mm long. The edge of the base nearer to VP is parallel to it. A vertical section plane, inclined at 45° to the VP, cuts the pyramid at a distance of 8 mm from the axis. Draw the top view, sectional front view.

8. Orthographic projection

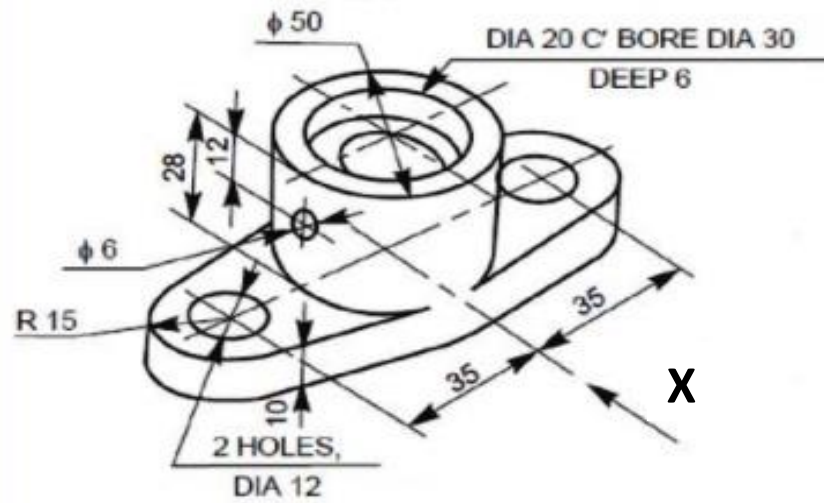
1. Draw Front View, Top view and Right Hand Side view for the figure shown below using first angle projection method.



2. Draw Front View, Top view and Left Hand Side view for the figure shown below using first angle projection method.



3. Draw sectional Front View and Top View for the figure shown below using 3rd angle projection method.



9. Isometric projection

1. Draw isometric circle on the three side of cube of 60 mm dimension.
2. Draw an isometric scale of 100 mm length and show 30 and 60 mm length on the scale.
3. Draw isometric view for the figure given below.

