

**NOTE:** Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit. Assume suitably the missing data, if any. All dimensions are in mm, if not mentioned otherwise. Supplement your answer with neat and labeled sketches wherever required. All software related questions must be answered with respect to AutoCAD software.

x-x-x

1. (i) Differentiate between Rounded Shapes (Internal) versus Rounded Shapes (External).  
(ii) What is meant by aligned sections? Where are they applied?  
(iii) Differentiate between True Length versus Apparent Length of a line.  
(iv) Differentiate between Sketch versus Drawing.  
(v) Differentiate between isometric versus dimetric projections.

(5x2)

#### UNIT - I

2. The front view of the line AB of length 70 mm is inclined at  $30^\circ$  to XY line and measures 45 mm. The end A is 20 mm above HP and 25 mm in front of VP. Draw the projections of the line and find the inclinations with HP and VP by rotating line method.
3. A regular pentagonal lamina of 30 mm base edges rests on one of its corners on HP. Draw its projections when the surface of the lamina makes  $60^\circ$  with HP and the top view of the diagonal passing through that corner on HP makes  $45^\circ$  with the reference line.
4. Draw the projections of hexagonal pyramid of base 25 mm and height 60 mm when one of its triangular faces lies on HP, and its base edge is at right angle to the VP and the axis of the pyramid is parallel to VP. Draw its orthographic projections (Front View, Top View, Left Side View and Right Side View).

(2x10)

#### UNIT - II

5. A cylinder of base diameter 40 mm and height 60 mm rests on its base on HP. It is cut by a plane perpendicular to VP and inclined at  $30^\circ$  to HP and meets the axis at a distance 30 mm from base. Draw the front view, sectional top view, and the true shape of section.
6. A cylinder of base diameter 80 mm and axis 80 mm long is lying on its base on HP. A section plane perpendicular to VP and inclined at  $45^\circ$  to HP passes through a point situated on the axis and at 20 mm below the top surface of the cylinder. Draw the isometric view of the cut solid.
7. A solid hexagonal prism of 35 mm base sides and axis 70 mm long is having a circular hole of 50 mm diameter, drilled at its mid height such that the axis of the drilled hole is perpendicular to the axis of the prism. Draw the development of lateral surface of the solid with the hole.

(2x10)

x-x-x