

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI
SUMMER EXAMINATION 2020

HVPM's

College of Engineering and Technology, Amravati.

Department of First Year Engineering

Bachelor of Engineering Semester : **I and II**

Subject :- Engineering Drawing (Old course) Code :- 1A4

Instructions :-

1. Solve any two questions.
2. All questions carry equal marks.
3. Use blank pages to solve the paper.
4. Use dark pencil to draw sketches and blue or black ball pen to answer theory questions.

Q.1

- a. Draw the curve traced out by a point moving in a plane such that sum of its distances from the foci, 70mm apart is 100mm. Determine its minor axis. **02 Credit point**
- b. The top view of a line CD measures 65mm long. The line is in V.P. and inclined at 30° to H.P. Its end C is 30mm above H.P. Draw its projections and find its true length. **01 Credit point**
- c. What is Orthographic Projections? What are the various methods to draw Orthographic Projections? Differentiate between these methods. Draw Orthographic views of vertical cupboard by assuming suitable dimensions. **01 Credit point**
- d. A pentagonal pyramid side of base 25mm and axis 55mm long, lies with one of its slant edges on H.P. such that its axis parallel to V.P. Draw its projections. **02 Credit point**
- e. A hexagonal pyramid base 30mm side of base and axis 65mm long resting on its base on H.P. with two edges parallel to V.P. It is cut by a sectional plane perpendicular to V.P. inclined at 45° to H.P. and intersecting the axis at a point 25mm above the base. Draw front view, sectional top view and true shape of section. **02 Credit point**
- f. Explain Isometric Projection. Differentiate between Isometric Projection and Isometric view. Explain the construction of Isometric Scale. Draw Isometric view of cube having side 50mm. **02 Credit point**

Q.2

- a. Draw an involute of a hexagon of 30mm side. **01 Credit point**
- b. Draw the projections of a regular hexagon of 25mm side, having one of its side in H.P. and inclined at 60° to V.P. and its surface making an angle of 45° with H.P. **02 Credit point**
- c. Draw the symbols used for representing the methods of projections. Explain any one method by any simple object with appropriate dimensions. **02 Credit point**
- d. A hexagonal pyramid of 30mm side of base and 45mm length of axis is resting on one of its triangular faces on H.P. Draw the projections of the pyramid when its edge of base which is in H.P. is inclined at 60° to V.P. **02 Credit point**
- e. A square prism base 40mm side and axis 80mm long has its base on H.P. and its faces equally inclined to V.P. It is cut by a plane perpendicular to V.P. inclined at 60° to H.P. and passing through a point on axis 55mm above H.P. Draw its front view, sectional top view and true shape of section. **02 Credit point**
- f. Explain the four centre method to draw Isometric view of circle when circle appears in front view and top view in Orthographic Projection. **01 Credit point**

Q.3

- a. A ball thrown up in air reaches a maximum height of 45metres and travels a horizontal distance of 75 metres. Trace the path of a ball assuming it to be parabolic. **01 Credit point**
- b. The line AB, 80mm long, has its end A 30mm above H.P. and 25mm in front of V.P. Draw its projections, when it is parallel to H.P. and inclined at 30° to V.P. **01 Credit point**
- c. Draw the Orthographic views of a cylinder having diameter of base 50mm and height 80mm long, when axis of cylinder is perpendicular to H.P. by using any one method of projection. **02 Credit point**
- d. A cone of base diameter 45mm and axis 55mm long lies on a point of its base on H.P. with its axis inclined at 30° to V.P. and 45° to H.P. Draw its projections. **02 Credit point**
- e. A cylinder of 40mm diameter, 60mm height and having its axis vertical, is cut by a sectional plane, perpendicular to V.P. inclined at 45° to H.P. and intersecting the axis 32mm above the base. Draw its front view, sectional top view and true shape of section. **02 Credit point**
- f. Draw Isometric view of hexagonal prism with base 30mm and axis 70mm long when axis of the prism is parallel to V.P. **02 Credit point**

Q.4

a. A circle of 50mm diameter rolls along the circumference of another circle of 150mm diameter from outside. Trace the path of a point P on the circumference of the rolling circle for one complete revolution. Name the curve. **01 Credit point**

b. A circle of 60mm diameter is resting on H.P on a point A of the circumference with its plane inclined at 45° to H.P. and the top view of the diameter through the point A makes 30° with V.P. Draw the projections of the circle. **01 Credit point**

c. Draw the Orthographic views of square prism having base 40mm and axis 70mm long, with axis of prism perpendicular to V.P. by using any one method of projection. **02 Credit point**

d. A cylinder of base 40mm diameter and axis 60mm long rests with a point of its base circle on H.P. and its axis inclined at 45° to the H.P. and 30° to the V.P. draw its projections. **02 Credit point**

e. A cube, side 50mm, is resting on H.P. on its base with all the vertical faces equally inclined to V.P. It is cut by A.I.P. in such a way that the true shape of the section is a regular hexagon. Find the inclination of cutting plane with H.P. and draw projections and true shape of section. **02 Credit point**

f. Draw Isometric Projection of cylinder having base diameter 40mm and height 70mm long by assuming axis of cylinder parallel to V.P. **02 Credit point**