Code : 021102

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Time : 3 hours   Full Marks : 70

Instructions :

(i) There are **NINE** questions in this paper. All questions carry equal marks.

(ii) Attempt **FIVE** questions in all.

(iii) Question No. **1** is compulsory.

1. Answer as directed on any *seven* of the following :

   (a) What is meant by projection?

   (b) In the third angle projection, the object is kept at —— quadrant.

   (Fill in the blank)

   (c) The HT and VT of a line will always lie on a single projector.

   (Write True / False)

   (d) What are meant by true length and true inclination?

   (e) When a plane has its surface parallel to HP and perpendicular to VP, the top view gives the true shape and size.

   (Write True / False)

(f) When a plane is perpendicular to a reference plane, its projection on that plane is a ——.

   (Fill in the blank)

(g) What is an octahedron?

(h) The base of an oblique hexagonal prism is not a regular hexagon.

   (Write True / False)

(i) What is meant by orthographic projection?

(j) What is meant by development of surfaces?

2. (a) Draw the projections of the following points :

   (i) Point A, 30 mm above HP and 40 mm in front of VP http://www.akubihar.com

   (ii) Point B, 30 mm above HP and 40 mm behind the VP

   (iii) Point C, 30 mm below HP and 40 mm behind the VP

   (iv) Point D, 30 mm below HP and 40 mm in front of VP

   (v) Point E, both on HP and VP

   (b) Construct a hyperbola, when the distance of the focus from the directrix is 65 mm and eccentricity is 3/2.

3. A straight line AB is inclined 30 degree to VP. Its end A is 15 mm above HP. Its front view is 65 mm and makes an angle of 45 degree with reference line. VT of the line is 20 mm below HP. Draw the projections of the line and determine its true length and HT.

4. A hexagonal thin plate with 35 mm side rests on an edge in VP. The surface is inclined at 30 degree to VP and the edge resting in VP is inclined at 45 degree to HP. Draw the projections of the plane.

5. Draw the projections of a square pyramid having one of its triangular face in the VP and the axis parallel to and 40 mm below the HP. [Base 40 mm side and axis 70 mm long]

6. A hexagonal prism side of base 25 mm long and axis 60 mm long is resting on an edge of the base on the ground, its axis being inclined at 60 degree to the HP and parallel to the VP. A section plane inclined at 45 degree to the VP and normal to the HP cuts the prism and passes through a point on the axis at a distance of 20 mm from the top end of the axis. Draw its sectional front view and true shape of the section. http://www.akubihar.com

7. The outside dimensions of a box made of 40 mm thick planks are 900 mm (length) × 600 mm (breadth) × 600 mm (height). The depth of the lid on the outside is 120 mm. Draw the isometric view of the box when the lid is 120 degree open. The lid is connected to the box along its length.

8. Draw the development of the frustum of a pentagonal pyramid having its base 50 mm side, top 25 mm side, height 70 mm. Draw the development of its lateral surface.

9. Describe the functions of the following commands used in AUTOCAD drawing with suitable examples :

(a) BOUNDRY HATCH (BHATCH)

(b) CHANGE

(c) EXTRUDE

(d) OFFSET

(e) VIEWPORTS (VPORTS)

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