

GUJARAT TECHNOLOGICAL UNIVERSITY
B. E. - SEMESTER –I • EXAMINATION – WINTER 2012

Subject code: 110013**Date: 23-01-2013****Subject Name: Engineering Graphics****Time: 10.30 am – 01.30 pm****Total Marks: 70****Instructions:**

1. Attempt any 5 questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain the terms: (i) Eccentricity (ii) Involute (iii) Hypocycloid **14**
 (b) Find the locus of point P moving in a plane such that its distance from a fixed straight line AB and a fixed point remains constant
 (c) Draw an ellipse by an oblong method given the major and minor axes as 120mm and 90mm respectively.
- Q.2** (a) A point 'A' is located in the 1st quadrant. The shortest radial distance of point 'A' from the intersection of HP and VP is 40mm and is inclined at 45° to HP. Draw projections of point. **14**
 (b) A line AB, 80mm long, is inclined to HP by 30° and inclined to VP by 45°. The line is in first quadrant with point A 15mm above HP and 30mm in front of VP. Draw the projection of line AB.
 (c) Explain application of (i) Projection of Point (ii) Projection of Line
- Q.3** (a) Top View of a 75mm long line CD measures 50mm. End C is in HP and 50mm in front of VP. End D is 15mm in front of VP and it is above HP. Draw projections of CD and find angles with VP and HP. **14**
 (b) A circular plate of negligible thickness having 70mm diameter is resting on HP on a point of the circumference. Plate is kept perpendicular to VP and inclined to the HP such that the plan of it is an ellipse of minor axis 40mm. Draw the projections.
 (c) Discuss application of oblique plane
- Q.4** (a) Explain (i) Polyhedra (ii) Solid of revolution **14**
 (b) A cube with a 30mm side resting on one of its corners on the HP. Draw the projections when the base is inclined at 45° to HP and axis parallel to VP.
 (c) A pentagonal prism of side length of base 30mm and height 60mm is resting on HP with one edge of base perpendicular to VP. It is cut by a Auxiliary Inclined Plane included at 40° to HP and bisecting the axis. Draw sectional top view, sectional side view and true shape of the section.
- Q.5** (a) A hexagonal prism of 40mm side length of base and height 80mm is resting on HP on its base with two edges of base is parallel to HP. A square hole of side length 20mm is drilled in the prism such that all the edges of square hole are equally inclined to HP and axis of square hole bisects the axis of prism. Draw development of surfaces of prism. **14**
 (b) A square pyramid of side length of base is 30mm and length of slant edge 80mm is resting on HP such that all sides of base are equally inclined to VP. Draw the development of surface of pyramid.
 (c) Explain: (i) Arc length in development of cone (ii) Application of Development of Surfaces

- Q.6** (a) Draw orthographic view (i) Elevation (ii) Top view (iii) Left Hand Side View of the following figure 1, Use 1st angle projection system **14**

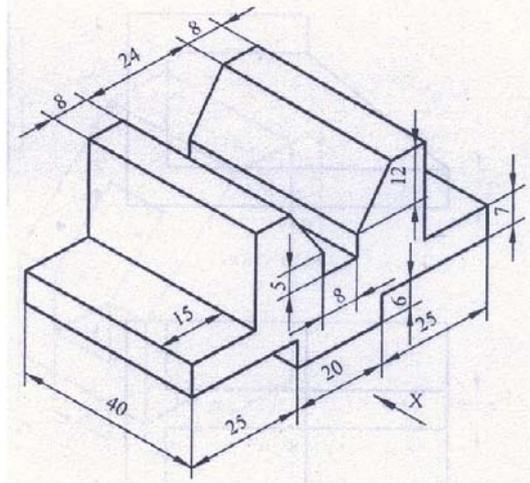


Figure 1

- Q.7** (b) Explain types of Projection with application **14**
 (a) Draw the Isometric view of the following figure 2.

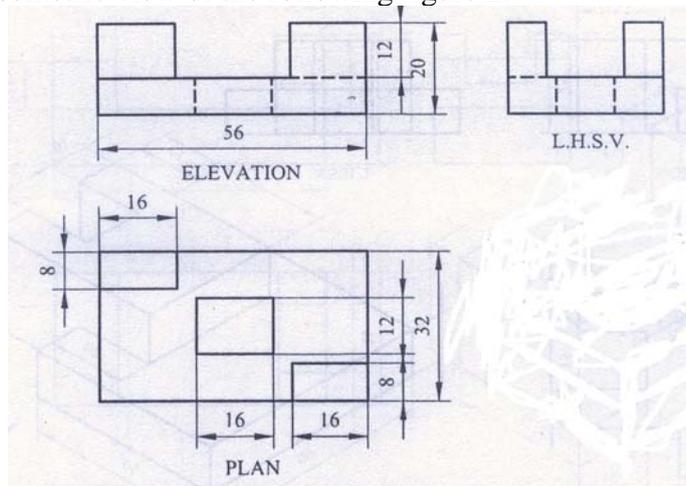


Figure 2

- (b) Explain method of drawing cylinder in isometric draw.
