Roll No. ..... Total Pages : 03

BT-1/D-22 41042

ENGINEERING GRAPHICS AND DESIGN

(EVEN)

ES-109A

Time : Three Hours] [Maximum Marks : 75

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit.

Unit I

1. (a) Define R.F. What is the significance of RF in the scales used in Engineering Drawing ? **5**

   (b) Define scale and explain plain, vernier and diagonal types of scale. **10**

2. Draw the projection of the following points on the same reference line by taking the gap of 30 mm in adjacent projectors : **15**

   (a) Point A, 25 mm in front of V.P. & 45 mm above H.P.

   (b) Point B, 30 mm behind V.P. & 40 mm above H.P.

   (c) Point C, 25 mm behind V.P. & 45 mm below H.P.

(d) Point D, 50 mm in front of V.P. & 55 mm below H.P.

(e) Point E, lies in V.P. and H.P.

Unit II

3. A line AB, 90 mm long is inclined at 30° to the H.P. Its end A is 15 mm above the H.P. and 20 mm in front of the V.P. Its front view measures 65 mm. Draw the top view of AB and determine the inclination with the V.P. **15**

4. A square ABCD of 50 mm side has its corner A in the H.P., its diagonal AC inclined at 30° to the H.P. and the diagonal BD inclined at 45° to the V.P. and parallel to the H.P. Draw its projections. **15**

Unit III

5. A pentagonal pyramid, side of base 30 mm and axis 70 mm long, has its base lying on horizontal plane and an edge of the base parallel to the V.P. A horizontal section plane cuts it at a distance of 30 mm above the base. Draw its front view and sectional top view. **15**

6. Develop the surface of a right circular cone 50 mm diameter base and 60 mm axis long with its axis bisected by a plane at an angle 45° with horizontal. **15**

Unit IV

7. A cylindrical block of base, 60 mm diameter and height 80 mm, standing on the H.P. with its axis perpendicular to the H.P. Draw its isometric view. 15

8. Derive orthographic projection. Describe briefly the method of obtaining an orthographic projection of an object. Also explain conversion of orthographic projection to isometric projection considering any suitable example. 15