BT-2/M-24   42039

ENGINEERING GRAPHICS AND DESIGN
Paper : ES-109A

Time : Three Hours]   [Maximum Marks : 75

Note : Attempt *Five* questions in all, with at least *one* from each Section carrying 15 marks.

Section A

1. Explain the following :   3×5=15

    (a) The importance of the concept of stability in lettering

    (b) The importance of dimensioning

    (c) Tangent circle and arcs

    (d) Enlarging scale and reducing scale

    (e) Principle of Vernier.

2. (a) Draw an involute to an equilateral triangle of 20 mm side.   7

    (b) Write short note on following: 4×2=8

        (i) Vernier Scales

        (ii) Epicycloid.

Section B

3. Point A is 20 mm above HP and 30 mm in front of VP and point B is 25 mm below HP and 40 mm apart. Draw the projection of points and find the length of the front view and top view of the line joining points A and B. **15**

4. (a) Explain in brief classification of planes with neat sketch. **7**

   (b) Write short note on following : **4×2=8**

   (i) Types of auxiliary planes

   (ii) Primary auxiliary view and secondary auxiliary view

Section C

5. A right regular square pyramid, side of base 30 mm and axis 54 mm long, rests on HP on one of its base corners, such that the slant edge containing that corner is perpendicular to the HP. Draw the projection of the pyramid. **15**

6. A right circular cylinder, diameter of base 40 mm and height 60 mm, lies in HP on one of its elements such that its axis parallel to the HP and inclined to VP at angle 45°. Draw its projections. **15**

Section D

7. Describe the conversion of isometric views to orthographic views with suitable diagrams and also explain the isometric scale. 15

8. (a) Discuss in details the method of projection with a neat sketch. 7

   (b) Sketch the methods to represent a circle in isometric view and discuss the method which is more reliable. 8