[Total No. of Questions - 9] [Total No. of Printed Pages - 3]

Dec-24-0282 (CBCS)

ME-102 (Engineering Drawing & Graphics)

B.Tech. 1st

Time : 3 Hours Max. Marks : 40

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : This question paper carries five sections. Attempt five questions in all, selecting one question each from section A, B, C and D. Section E is compulsory. All dimensions are in mm.

SECTION - A

1. Point C is located 40 mm above H.P. and divides a line AB into two equal parts. The distance between the end projectors of points B and C is 30 mm. The F.V. of line AB makes an angle 30° with the horizontal. Point A is located 50 mm in front of V.P. The shortest distance of point B from the XY line is 40 mm. Draw the Front view, Top view and Left hand side view of line AB, assuming it to be in the first quadrant. (8)

2. A pentagonal plane ABCDE of 35 mm side has its plane inclined 50° to H.P. Its diameter joining the vertex B to the midpoint F of the base DE is inclined at 25° to the xy-line. Draw its projections keeping the corner B nearer to V.P. (8)

SECTION - B

3. Draw the projections of the pentagonal prism with side of the base 35 mm and axis 60 mm long resting on one of its faces on H.P. with its axis inclined at 45° to V.P. (8)

4. Figure 1 shows a pictorial view of a bracket. Draw the following views with dimensions.

(i) Full Section Front View

(ii) Top View (8)

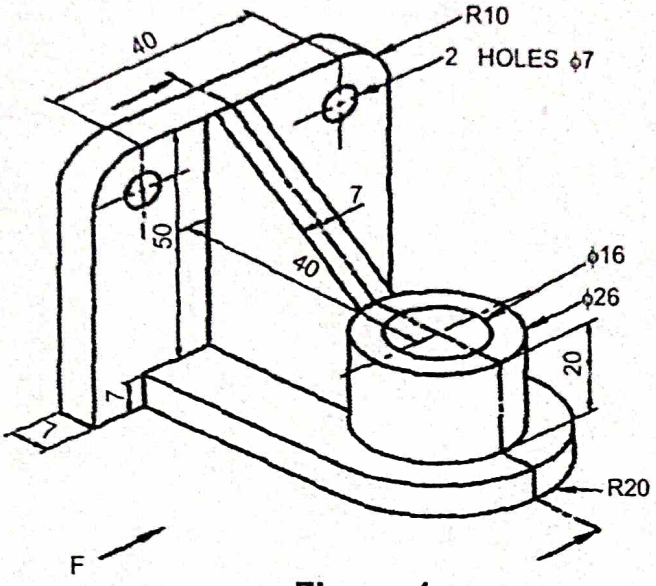

Figure 1

SECTION - C

5. Figure 2 shows the three dimensional representation of an object. Draw the front, top and side view of the given object, using first angle projection system. (8)

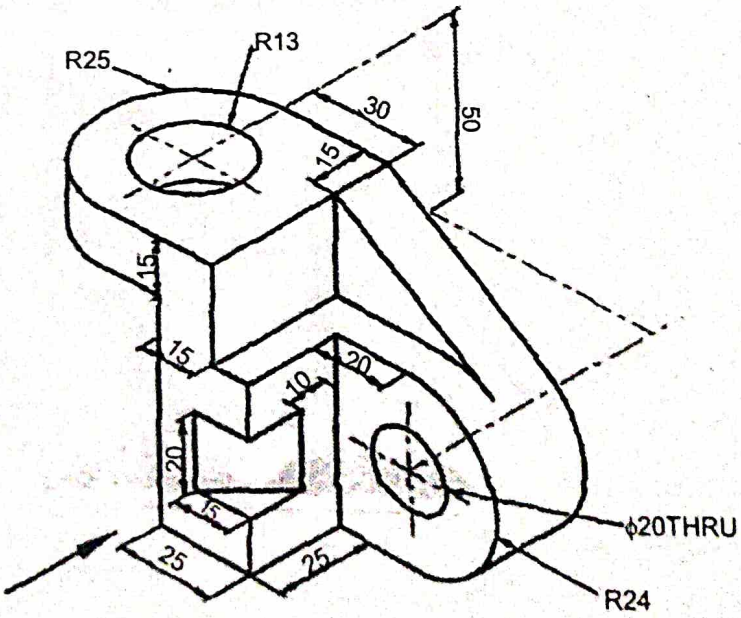

Figure 2

[P.T.O.]

6. A right circular cone of base diameter 60 mm and height 75 mm is cut by a plane making an angle of 30° with the horizontal. The plane passes through the midpoint of the axis. Draw the isometric view of the truncated solid. (8)

SECTION - D

7. A cone of base 50 mm diameter and height 70 mm rests with its base on H.P. An auxiliary inclined plane A.I.P. inclined at 30° to H.P. bisects the axis of the cone. Draw the development of the lateral surface of the truncated cone. (8)

8. A vertical cylinder of diameter 40 mm and axis 80 mm long is fully penetrated by a horizontal cylinder of diameter 25 mm and axis 60 mm long such that their axes bisect each other at right angle. The axis of the penetrating cylinder is parallel to the V.P. Draw the top and front views of the cylinders and the curves of intersection. (8)

SECTION - E (Compulsory)

9. (a) What are the two systems of placing dimensions on the drawings? Illustrate with neat sketches.

   (b) Explain the basic elements of the projection system.

   (c) What is isometric projections? Discuss the terms Isometric Axes, Isometric Lines and Isometric Planes.

   (d) What are the methods of development of surfaces?

   (4×2=8)