17010(M)

B. Tech 2nd Semester Examination

Engineering Drawing & Graphics (CBS)

ME-102

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 : Attempt five questions in all, selecting one question from each section A, B, C and D. Section E is compulsory.

SECTION - A

1. (a) What are the two systems of placing dimensions on a drawing? Illustrate your answer with sketches. (3)

   (b) The distance between Delhi to Chandigarh is 100 km and it is represented on a certain map by a line 2.5 cm long. Find the R.F. of the scale of the map. Draw its diagonal scale showing single kilometre and long enough to measure upto 600 km. Show a distance of 457 km on this scale. (5)

2. (a) Point P is 25 mm above HP and 40 mm in front of VP and point Q is in HP and 35 mm behind the VP. Draw the projections of P and Q keeping the distance between their projectors equal to 55 mm. Also draw straight lines joining their top and front view. (4)

   (b) The top view of a 65 mm long line AB measure 55 mm, while the length of its front view is 40 mm. Its one end A is 15 above the HP and 12 mm in front of the VP. Draw the projections of AB and determine its inclinations with the HP and the VP. (4)

3. A hexagonal prism, edge of base 25 mm and height 56 mm, rests on one of its base edges in HP such that its axis is parallel to the VP. Draw the projections of solid when its axis is inclined 45° to the HP. (8)

4. A cylinder of 40 mm diameter, 60 mm height and having its axis vertical, is cut by a section plane, perpendicular to the VP, inclined at 45° to the HP and intersecting the axis 32 mm above the base. Draw its front view, sectional top view and true shape of the section. (8)

SECTION - C

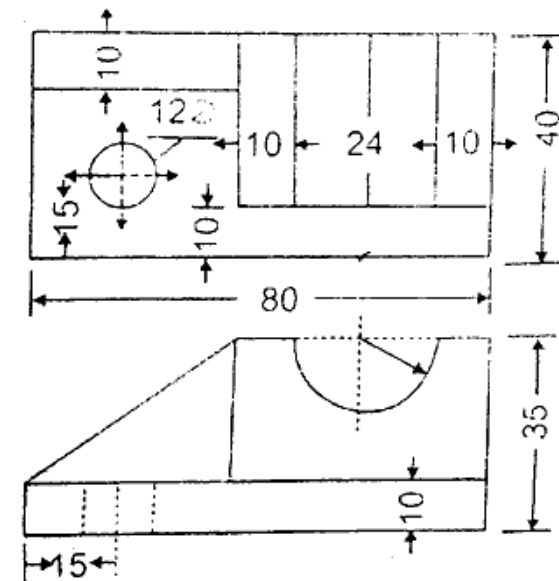5. Draw the isometric view of the casting shown in two views in figure 1. (8)

Figure 1

6. A pentagonal pyramid, base 30 mm side and axis 65 mm long, has its base horizontal and an edge of the base parallel to the VP. A horizontal section plane cuts it at a distance of 25 mm above the base. Draw its front view and sectional top view.

(8)

SECTION - D

7. A truncated right cylindrical tube is shown in Figure 2. Develop its lateral inside pattern. Neglect the thickness of tube.   (8)
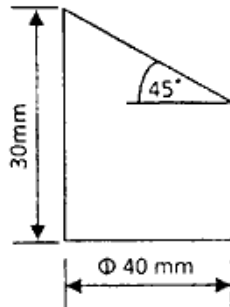

Figure 2

8. A vertical square prism, base 50 mm side, is completely penetrated by a horizontal square prism, base 35 mm side, so that their axes intersect. The axis of the horizontal prism is parallel to the VP, while the faces of two prisms are equally inclined to the VP. Draw the projections of the solids, showing line of intersection. (Assume suitable lengths of the prism)

(8)

SECTION - E

9. (a) The ratio of the length of the drawing of the object to the actual length of the object is called_____.

(b) When the measurements require are in three units _____ or _____ scale used.

(c) The inclination of a line with the H.P. is seen in the_____ and that with the V.P. is seen in the_____.

(d) Draw the isometric scale.

(e) When a solid is cut by a plane parallel to its base, the remaining lower portion is known as _____ and when a solid is cut by a plane inclined to its base, the remaining lower portion of solid is known as_____.

(f) A solid having a plane figure for its base and equal number of triangular faces meeting at a point is called_____.

(g) The isometric length is about_____% of the true length.

(h) Write down the different type of solids.   (1×8=8)