SEM 1 – 5 (RC 07-08)

F.E. (Semester – I) (Revised 2007-08) Examination, Nov./Dec. 2016
ENGINEERING GRAPHICS

Duration : 4 Hours | Max. Marks : 100

Instructions : *1) Attempt in **all five** questions. At least **one** question to be attempted from **each** Module.*
*2) Dimensioning, line work carry **weightage**.*
*3) Assume missing dimensions/data, **if any**.*

MODULE – I

1. a) The major axis of an ellipse is 150 mm. The foci of the ellipse are 120 mm apart. Draw half the portion of the ellipse using concentric circles method and the other half using oblong method. **10**

   b) A line CD, 90 mm long, measures 72 mm in front view and 65 mm in top view. Draw the two views of the line if it fully lies in the first quadrant. Find the true inclinations of the line. Point C lies 15 mm above the HP and 10 mm in front of the VP. **10**

2. a) A circle of 50 mm diameter rolls along a straight line without slipping. Draw the curve traced out by a point on the circumference, for one complete rotation of the circle. Name the curve. **10**

   b) The top view and the front view of the line EF, measures 60 mm and 50 mm respectively. The line is inclined to HP and VP by 30° and 45°, respectively. The end E is on the HP and 10 mm in front of VP. Other end F is in the first quadrant. Draw the projections of the line EF and find its true length. **10**

MODULE – II

3. a) A semi-circular plate of 80 mm diameter has its straight edge in the VP and inclined at 45° to the HP. The surface of the plate makes an angle of 30° with the VP. Draw its projections. **10**

   b) A pentagonal pyramid of base 25 mm and axis 50 mm long has one of its triangular faces in VP and the edge of the base contained by that face makes an angle of 30° with HP. Draw its projections. **10**

4. a) A square of diagonal 70 mm is resting in HP on one of its corners. In the top view the square is seen as a rhombus with a 70 mm major diagonal and 35 mm minor diagonal. Draw the projections of the square if the diagonal which is parallel to HP is inclined at 45° to the VP. **10**

   b) A right circular cone, base diameter 40 mm and axis 70 mm long is resting on its circular rim in such a way that one of the generators is normal to HP and the plan of its axis makes 45° with the VP. Draw its projections. **10**

P.T.O.

MODULE – III

5. a) A square prism, base 40 mm side, axis 80 mm long, has its base on the HP and its faces equally inclined to the VP. It is cut by a plane, perpendicular to the VP, inclined at 60° to the HP and passing through a point on the axis, 55 mm above the HP. Draw its front view and sectional top view. **10**

   b) A cylinder of 40 mm diameter and 60 mm long is cut by a section plane making 45° with respect to the base and at a distance of 35 mm from the base. Draw the development of the lateral surface of the larger piece of the cut cylinder. **10**

6. A regular pentagonal pyramid having edge of base 25 mm and height 60 mm is lying on one of its triangular faces in HP with its axis parallel to VP. An auxiliary vertical section plane perpendicular to HP and inclined at 30° to VP bisects the top view of the pyramid axis removing the portion of the pyramid containing the vertex. Draw top view, sectional front view and development of lateral surface of the retained portion of the pyramid. **20**

MODULE – IV

7. a) Refer Fig. 7a and draw the isometric view of the object given its front view and top view. **10**

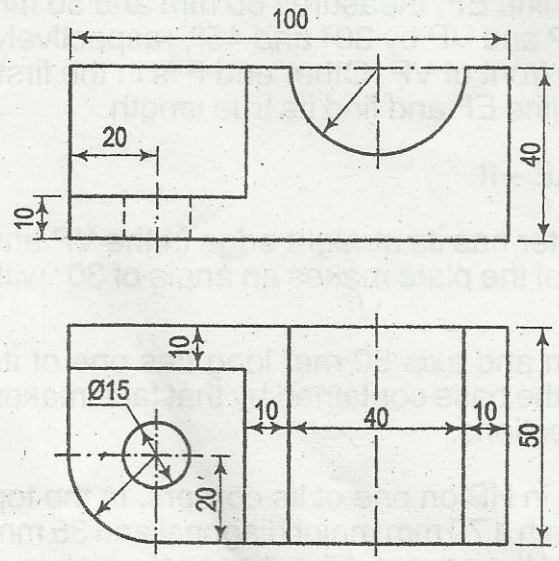

Fig. 7a

b) Draw the front view and top view of the object shown in Fig. 7b using first angle projection method. **10**

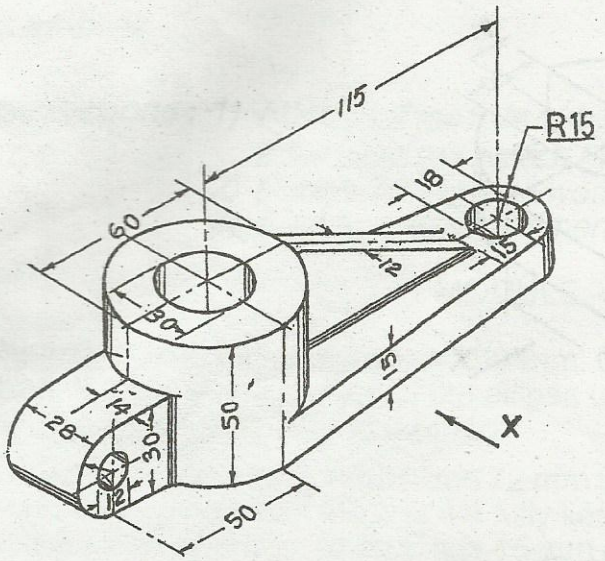

Fig. 7b

8. a) Draw the isometric view of the object given its front view and top view. Refer Fig. 8a. **10**

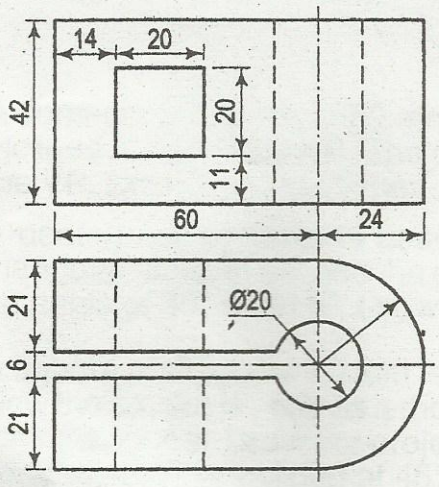

Fig. 8a

b) Draw the sectional front view and top view of the object shown in Fig. 8b. **10**

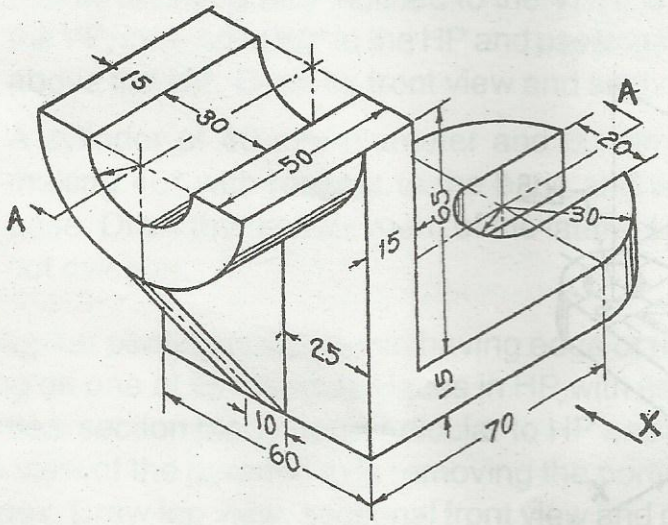

Fig. 8b