SEM 1 – 5 (RC 07-08)

F.E. (Semester – I) (Revised in 2007 – 08) Examination, May/June 2015
ENGINEERING GRAPHICS

Duration : 4 Hours | Max. Marks : 100

Instructions : *1) Answer **5** questions selecting atleast **one** from **each** Module.*
*2) Assume **additional**, data if required.*
*3) **Each** sub question carries **10** marks and **each** question **20** marks.*

MODULE – 1

1. a) Two points A and B are 100 mm apart. Trace the complete path of a point P moving (in the same plane as that of A and B) in such a way that, the sum of the distances from A and B is always the same and equal to 125 mm. Draw another curve parallel to and 25 mm away from this curve.

   b) A line AB, 65 mm long, has its end A in the H.P. and 15 mm in front of the V.P. The end B is in the third quadrant. The line is inclined at 30° to the H.P. and 60° to the V.P. Draw its projections.

2. a) The vertex of a hyperbola is 65 mm from its focus. Draw the curve if the eccentricity is 3/2. Draw a normal and a tangent at a point on the curve, 75 mm from the directrix.

   b) A line AB, 90 mm long is inclined at 30° to the H.P. and its end A is 12 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 its inclination with the V.P.

MODULE – 2

3. a) A pentagonal plate of 45 mm side has a circular hole of 40 mm diameter in its centre. The plate stands on one of its sides on the HP with its surface inclined at 45° to the H.P. and 30° to the V.P. Draw the projections of the plate with the hole in it.

   b) The frustum of a cone, bottom base diameter 70 mm, top base diameter 30 mm and height 50 mm is resting on one of its generators on the H.P. The axis of the frustum is inclined at 30° to the V.P. Draw its projections.

4. a) A composite plate of negligible thickness is made up of a rectangle 60 mm × 40 mm and a semicircle with its longer side as diameter. Draw its projections when the longer side is parallel to the H.P. and inclined at 45° to the V.P., the surface of the plate making an angle of 30° with the H.P.

   b) Draw the projections of a cylinder base circle diameter 40 mm and axis 70 mm long standing on a point on the base circle on the H.P. with its axis inclined at 30° to H.P. and 45° to V.P.

P.T.O.

MODULE – 3

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

6. a) A hollow cylinder, 50 mm outside diameter, axis 70 mm long and thickness 8 mm has its axis parallel to V.P. and inclined at 60° to the H.P. It is cut in two equal halves by a section plane inclined at 45° to the base of the cylinder. Draw the front view, sectional top view and the true shape of the section.

   b) Draw the projections of a cone base circle diameter 80 mm and axis 90 mm standing on its base on the ground. Show the shortest path followed by an ant which starts from a point on the periphery of the base of the cone, moves around the surface of the cone and returns back to the staring point.

MODULE – 4

7. a) Draw an isometric view of an object shown in Fig. 1

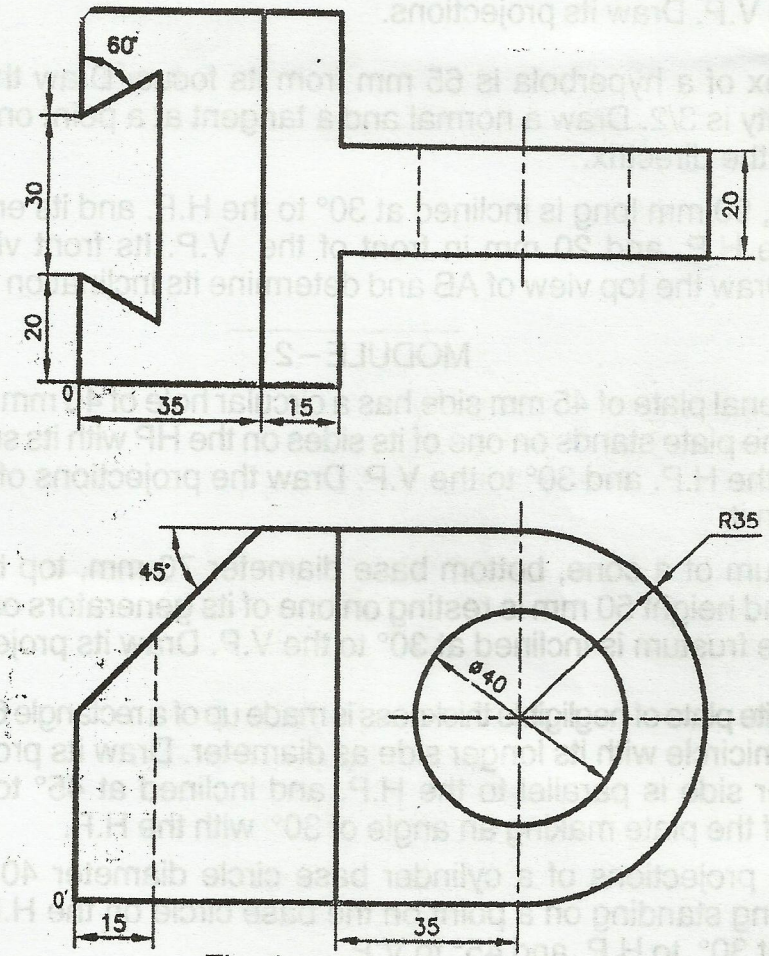

Fig. 1

b) Draw sectional front view and left hand side view of the object shown in Fig. 2

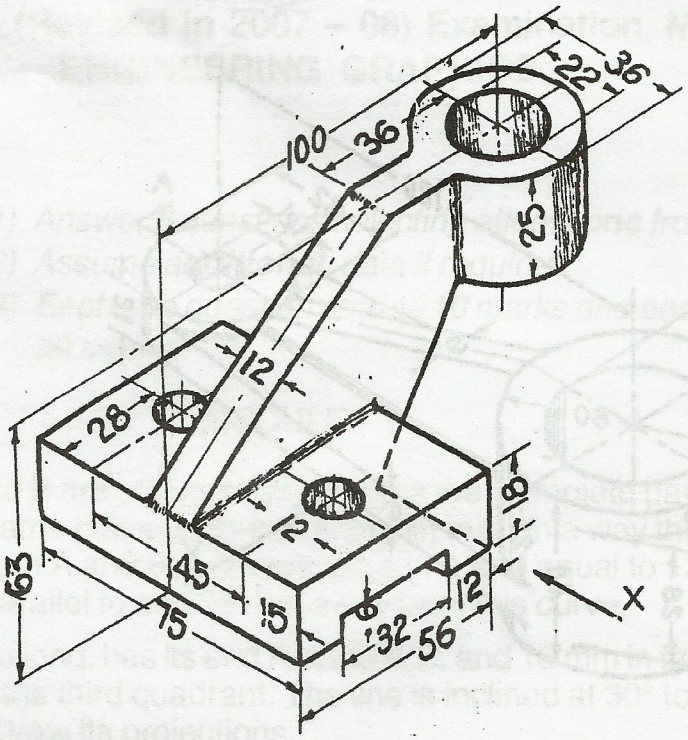

Fig. 2

8. a) Draw an isometric view of an object shown in Fig. 3

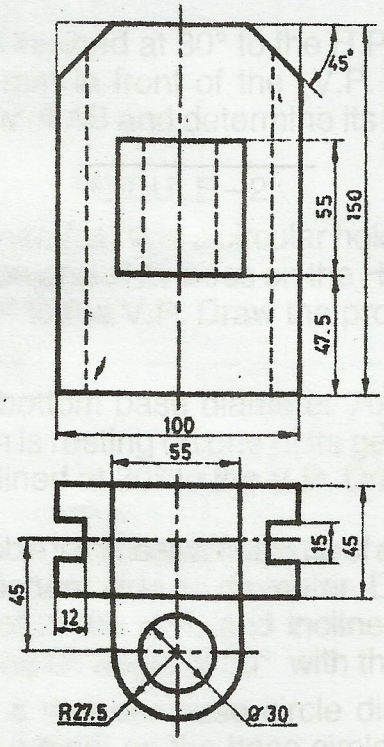

Fig. 3

b) Draw sectional front view and top view of the object shown in Fig. 4

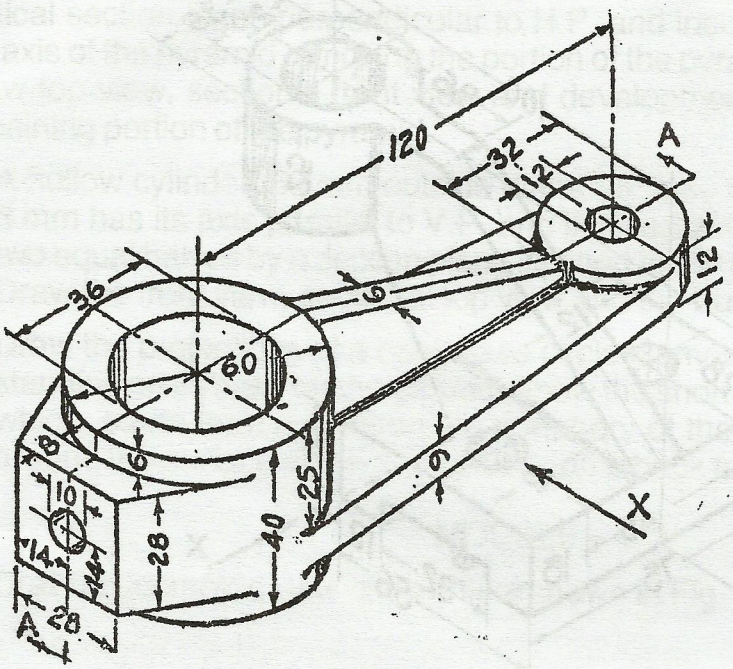

Fig. 4