F.E. (Semester – I) Examination, May/June 2013
ENGINEERING GRAPHICS (RC 2007-08)

Duration : 4 Hours   Max. Marks : 100

Instructions : *1)* Answer **5** questions, selecting atleast **1** from **each**
Module.

2) ***Assume*** additional data ***if required***.

MODULE – 1

1. a) A point P moves in such a way that the sum of its distances from two fixed
   points is always constant. The maximum distance of P from centre O of the
   curve generated is 80 mm and minimum distance is 50 mm. Draw the curve
   and name it.   **10**

   b) A line AB is in the first quadrant, inclined at 30° to HP and 45° to VP. A is at
   20 mm from HP and 15 mm from VP. The front view measures 75 mm. Draw
   the projections of the line and show its traces.   **10**

2. a) Draw a line AB at an angle of 30° with the horizontal. Point F is at a distance
   of 60 mm from line AB. Draw the locus of a point P which moves in such away
   that its distance from point F is always equal to its distance from the line AB.   **10**

   b) M is the midpoint of a line AB. A is 20 mm above HP and 15 mm infront of VP.
   M is 40 mm above HP and 30 mm infront of VP. The distance between the
   projectors of A and M is 40 mm. Draw the projections of the line AB and find
   its length. Also show its traces.   **10**

MODULE – 2

3. a) A thin triangular plate ABC, AB = 40 mm, BC = 55 mm and AC = 90 mm is
   resting on HP on its edge AB with its surface perpendicular to VP and inclined
   to HP in such a way that the top view obtained is an isosales triangle. Draw
   its projections and measure its inclination with HP.   **10**

b) Draw the projections of a hexagonal prism side of base 40 mm and axis 70 mm standing on an edge of the base on the ground making an angle of 30° with VP and the axis inclined at 60° to HP.   **10**

4. a) A circular lamina of 60 mm diameter rests on HP such that the surface of the lamina is inclined at 40° to HP. The diameter through the point on which the lamina rests on HP is inclined at 30° to VP. Draw its projections.   **10**

   b) A cone, base circle diameter 40 mm and axis 60 mm long is lying on one of its generators in the HP with its axis making an angle of 30° with VP. Draw the projections of the cone.   **10**

MODULE – 3

5. A square pyramid, edge of base 40 mm and height 60 mm, is resting on its base in HP with one of its base edges perpendicular to VP. An auxiliary inclined plane cuts the pyramid in such a way that the true shape of the section is a trapezium whose parallel sides measure 30 mm and 10 mm. Draw the front view, sectional top view, true shape of the section and development of the remaining portion of the pyramid.   **20**

6. a) A cylinder base circle diameter 50 mm and axis 80 mm long is standing on its base on the ground. It is cut by an auxiliary inclined plane bisecting the axis of the cylinder in such away that the true shape of the section is an ellipse with major axis 70 mm. Draw the front view, sectional top view and true shape of the section.   **10**

   b) A cone, base circle diameter 40 mm and axis 70 mm is standing on its base on the ground. It is cut by an auxiliary inclined plane inclined at 60° to the HP and bisecting the axis of the cone, removing the portion containing the apex. Draw the development of the remaining portion of the cone.   **10**

MODULE – 4

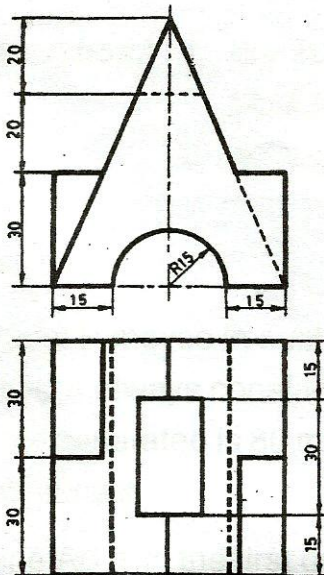7. a) Draw an isometric view of the object shown in Fig. 1. **10**

Fig. 1

b) Draw sectional front view and top view of the object shown in Fig. 2. **10**
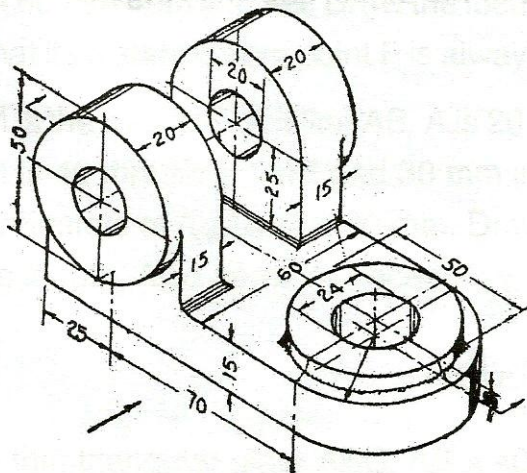

Fig. 2

8. a) Draw an isometric view of the object shown in Fig. 3.   **10**

Fig. 3
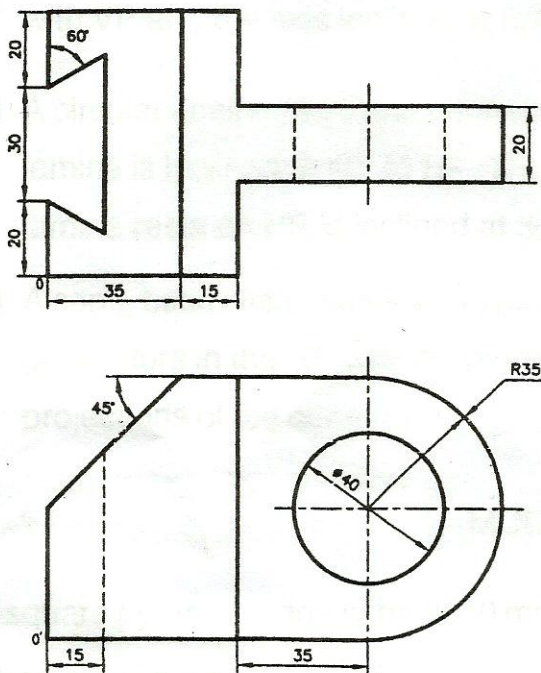
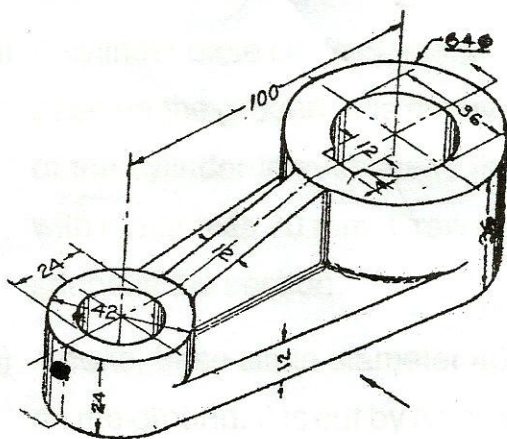b) Draw sectional front view and top view of the object shown in Fig. 4.   **10**

Fig. 4