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SEM 1 – 5 (RC 07-08)

# F.E. (Semester – I) Examination, November/December 2012
## ENGINEERING GRAPHICS (RC in 2007-08)

Duration : 4 Hours Maximum Marks : 100

***Instructions*** : *1) Answer **5** questions, selecting **atleast 1** from **each** Module.*
*2) Assume additional data if required.*

### MODULE – 1

1. a) A circle of 50 mm diameter rolls on a horizontal line for half revolution and then on a line upwards at an angle of 30° for another half revolution. Draw the curve traced out by a point P on the circumference of the circle. **10**

   b) A room 5.5 m × 6.5 m × 3.5 m high has a bulb hanging from the center of its ceiling. The rod for suspension of bulb is 1 m long. The switch for the bulb is located on the longer wall at 1.5 m from the floor and 2 m from the shorter wall. Find the shortest distance between the bulb and the switch. **10**

2. 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) Draw the projections of aline PQ 120 mm long inclined at 45° with HP and 30° with VP when the mid point M of the line is in HP as well as VP. Point Q is in third quadrant. Also draw a side view of the line. **10**

### MODULE – 2

3. a) A rhombus shaped plate with negligible thickness having diagonals of 60 mm and 40 mm respectively is resting on a corner in HP. The longer diagonal in parallel to VP and inclined to HP such that the top view appears as a square. Draw the FV, TV and SV and determine the angle made by the plate with HP. Also locate the traces. **10**

   b) Draw the projections of a cone, base circle diameter 40 mm and axis 70 mm standing on a point on the circumference of the base on the ground with its axis inclined at 30° to HP and 45° to VP. **10**

4. a) A thin semicircular plate of diameter 60 mm has its edge in the VP and inclined at 40° to HP. The surface of the plate makes an angle of 30° with the VP. Draw the projections of the plate. **10**

   b) Draw the projections of a pentagonal prism, side of base 40 mm and axis 70 mm standing on one of the corners of the base on the ground, with its axis making an angle of 30° with HP and 45° with VP. **10**

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## MODULE – 3

5. A hexagonal pyramid base 30 mm side and axis 60 mm long, has a triangular face on the HP and the axis parallel to VP. It is cut by a horizontal section plane which bisects the axis. Draw the front view and sectional top view and develop the surface of the cut-pyramid. **20**

6. a) A cone, base circle diameter 40 mm and axis 60 mm is standing on its base on the ground. It is cut by an auxiliary inclined plane in such away that the true shape of the section is a parabola with base 30 mm. Draw the front view, sectional top view and the true shape of the section. **10**

   b) A cylinder, base circle diameter 40 mm and Axis 70 mm is standing on its base on the ground. A hole of diameter 30 mm is drilled in the cylinder in such a way that the axis of the hole is perpendicular to VP and intersects the axis of the cylinder at 30 mm from the base. Draw the development of the lateral surface of the cylinder with the hole. **10**

## MODULE – 4

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

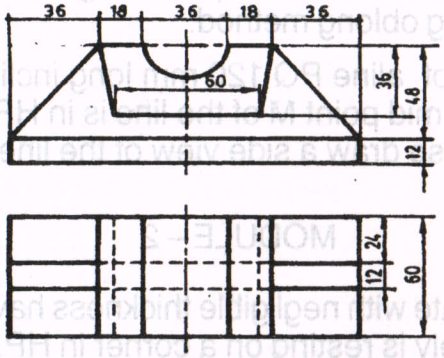


Fig. 1

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

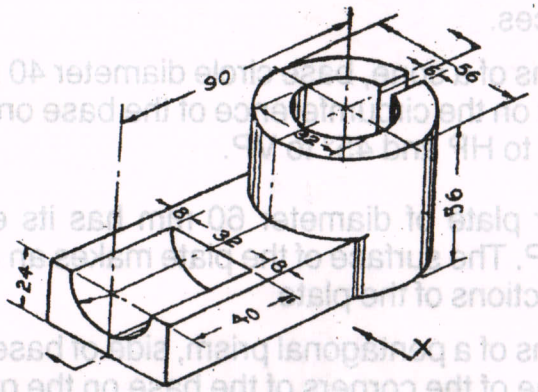


Fig. 2

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

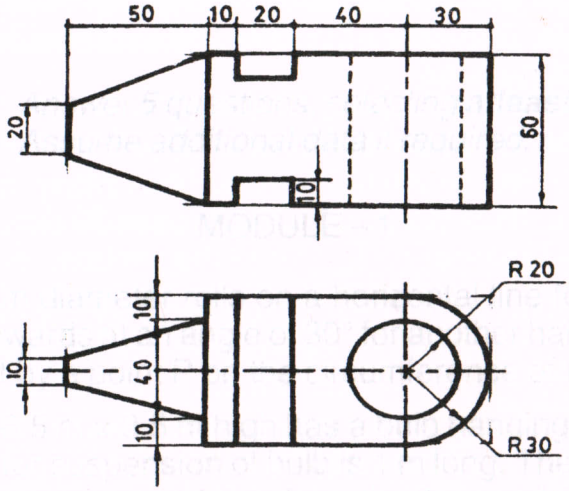


Fig. 3

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

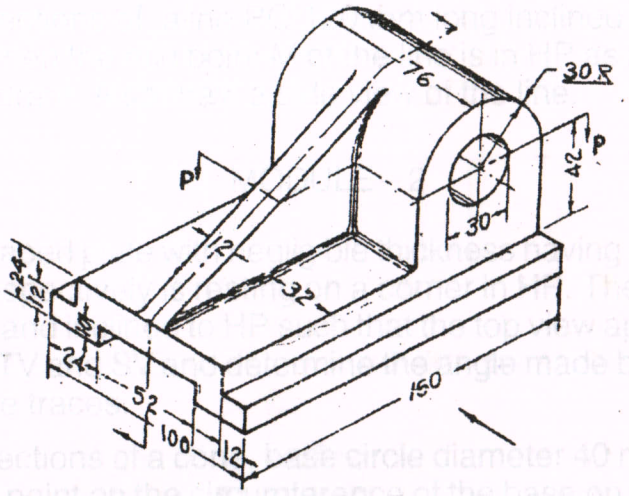


Fig. 4