SEM 1 – 6 (RC)

F.E. (Sem. – I) (RC 07 – 08) Examination, May 2010
ENGINEERING GRAPHICS

Duration: 4 Hours | Total Marks: 100

Instructions : *1) Attempt **five full** questions with at least **one** question from **each** Module.*
*2) Missing data, if **any** may suitably be **assumed.***

MODULE – I

1. a) A ball thrown up in the air reaches a maximum height of 45 meters and travels a horizontal distance of 75 meters. Trace the path of the ball, assuming it to be parabolic. **10**

   b) The top view of a 75 mm long line AB measures 65 mm, while the length of its front view is 50 mm. Its one end A is in the H. P. and 12 mm in front of the V. P. Draw the projections of AB and determine its inclinations with the HP and V.P. **10**

2. a) A line AB, 90 mm long, is inclined at 30° to the H.P. 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. **10**

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

MODULE – II

3. a) Draw the projections of a circle of 50 mm diameter resting in the H.P. on a point A on the circumference. Its plane is inclined at 45° to the H.P. The diameter AB makes an angle of 30° with the V.P. **10**

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

P.T.O.

4. a) Draw the projections of a cube of 25 mm long edges resting on the ground on one of its corners with a solid diagonal perpendicular to the V.P.

Assume the cube to be resting on one of its faces on the ground with a solid diagonal parallel to V.P. in the initial position. **10**

b) A thin 30° – 60° set square has its longest edge in the V.P. and inclined at 30° to the H.P. Its surface makes an angle of 45° with the V.P. Draw its projections. **10**

MODULE – III

5. a) A hexagonal prism, has a face on the H.P. and the axis parallel to the V.P. It is cut by a vertical section plane which makes an angle of 45° with V.P. and which cuts the axis at a point 20 mm from one of its ends. Draw its sectional front view and true shape of the section. Side of base 25 mm long, height 65 mm. **10**

b) A right regular pentagonal pyramid, base 30 mm and height 60 mm, is resting on H.P. on its base with one of the sides of base perpendicular to V.P. It is cut by a section plane which is $\perp$ to V.P., makes an angle of 60° with H.P. and bisects the axis. Draw the development of the lateral surfaces. **10**

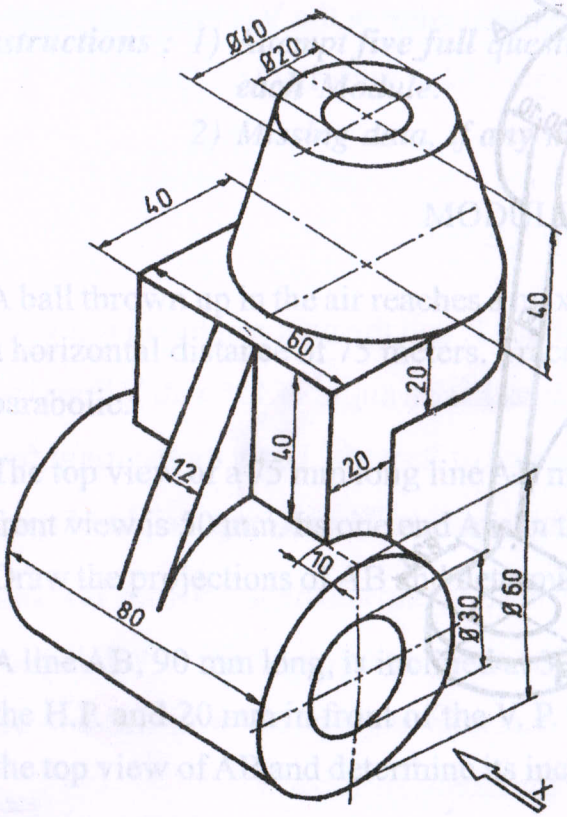
6. a) A cone, base 60 mm diameter and axis 70 mm stands vertically with its base on H.P. A section plane perpendicular to V.P. and parallel to one of the end generators of the cone passes at a distance of 15 mm from it. Draw the sectional top view and true shape of the section. **10**

b) A right regular pentagonal prism, edge of base 20 mm and height 50 mm, rests on its base with one of its base edges $\perp^{lar}$ to V.P. A section plane perpendicular to V.P. and inclined at 30° to H.P. cuts its axis at a distance of 30 mm from the base. Develop the lateral surface of the truncated prism. **10**

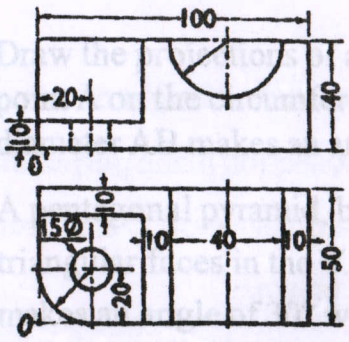
MODULE – IV

7. a) Figure shows a pictorial view. Draw the following views using first angle method of projection. **10**

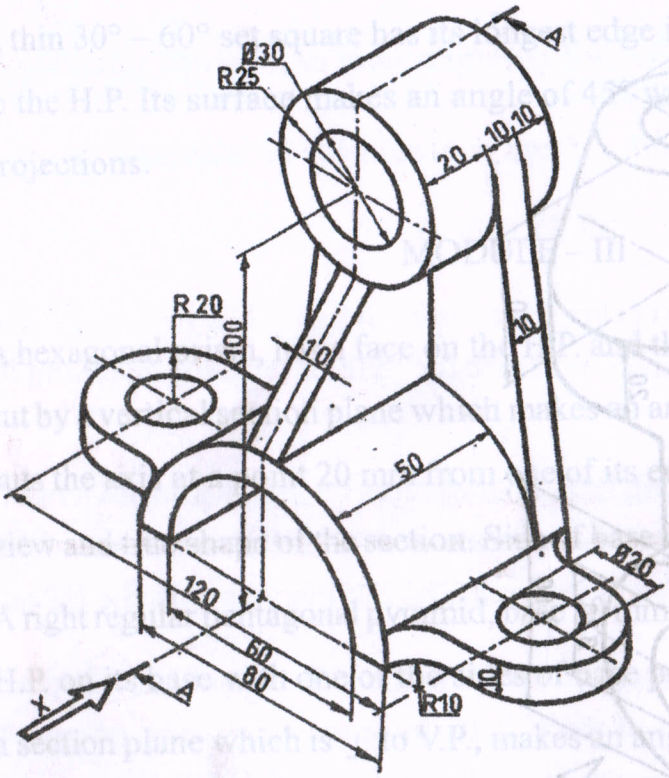
i) F. V. looking in the direction of arrow X ii) Top view.



b) Two orthographic views are given in the figure below. Draw an isometric view, taking O as origin. **10**



8. a) Draw the following views using first angle method of projection.
   a) Front view
   b) Sectional side view, section along A-A. **10**



b) Two orthographic views are given below. Draw an isometric view. **10**