SEM 1 – 5 (RC 07 – 08)

F.E. (Semester – I) (Revised in 2007-08) Examination, May/June 2012
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.*
*3) **All** the sub-questions carry **equal** weightage of **10** marks **each**.*

MODULE – I

1. a) Draw the involute of a pentagon of 30 mm side.

   b) A line CD 90 mm long measures 72 mm in FV and 65 mm in TV. Draw the projections of CD if it fully lies in the first quadrant. The point C is 15 mm from both the reference planes. Also find out the true inclinations and locate its traces.

2. a) The conjugate axes of an ellipse are 60 mm and 40 mm long with included angle of 75°. Determine the major and minor axes and construct the ellipse by any suitable method.

   b) The TV of a 90 mm long line measures 65 mm which is inclined at 45° to xy. The point A is in VP and 20 above HP. The point B is in first quadrant. Draw the projections of the line and show its traces.

MODULE – II

3. a) Draw the projections of a rhombus having diagonals 100 mm and 40 mm long. The larger diagonal is inclined at 30° to HP with one of the end points in HP and the smaller diagonal is parallel to both HP and VP.

   b) A right circular cone, base diameter 35 mm and axis 65 mm long is resting on its circular rim in HP such that one of the generators is normal to HP and the TV of the axis makes 45° with VP. Draw its projections.

P.T.O.

4. a) The projectors of two points A and B are 60 mm apart. A is 24 mm above HP and 42 mm infront of VP. B is 48 mm above HP and 36 mm infront of VP. A point C is 50 mm from A, 60 mm from B and lies in HP. Draw the projections of triangle thus formed.

   b) Draw the three views of a cube of 25 mm long edges such that the true length of solid diagonal becomes available in both FV and TV.

MODULE – III

5. a) A triangular prism, base edge 50 mm and axis 70 mm, is resting on its rectangular face in HP with axis parallel to VP. An AIP inclined at 45° to HP cuts the prism on the axis at 30 mm from one end. Draw FV, sectional TV and section SV of the prism.

   b) A semicircle of 160 mm diameter is the development of the lateral surface of a right circular cone. A largest possible hole is inscribed in the semicircle. Draw the projections of the cone with the hole.

6. a) A cone 72 mm base diameter and axis 90 mm is resting on a point on the base circumference in HP. The generator farthest from HP is parallel to both HP and VP. A profile section plane cuts the cone bisecting the axis. Draw FV, TV and sectional SV.

   b) A square pyramid, 30 mm edge of base and axis 50 mm, rests on its base in HP. It is cut by an AIP inclined at 45° to HP which bisects the axis. Draw the development of the truncated pyramid.

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MODULE – IV

7. a) Pictorial view of an object is given. Draw TV, FV, and RHSV (Refer Fig. 7a).

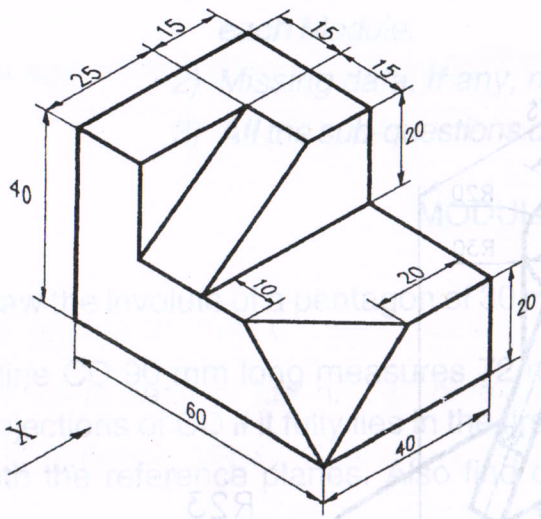

Fig. 7a

b) Draw the isometric view from the given TV and FV of an object (Fig. 7b).

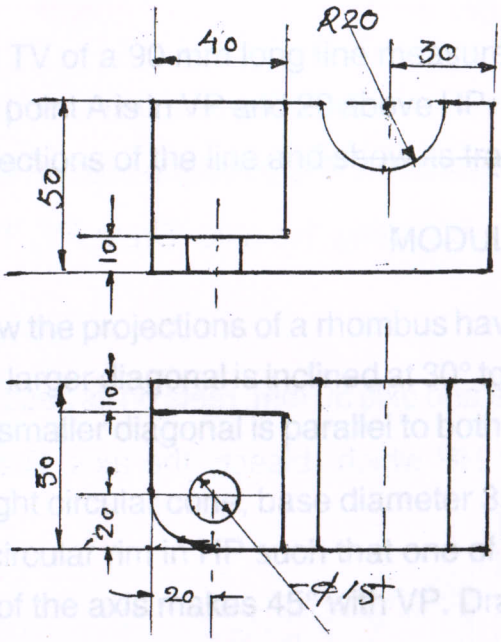

Fig. 7b

8. From the given pictorial view draw (Fig. 8)
   a) Sectional FV along A – B
   b) TV and LHSV.

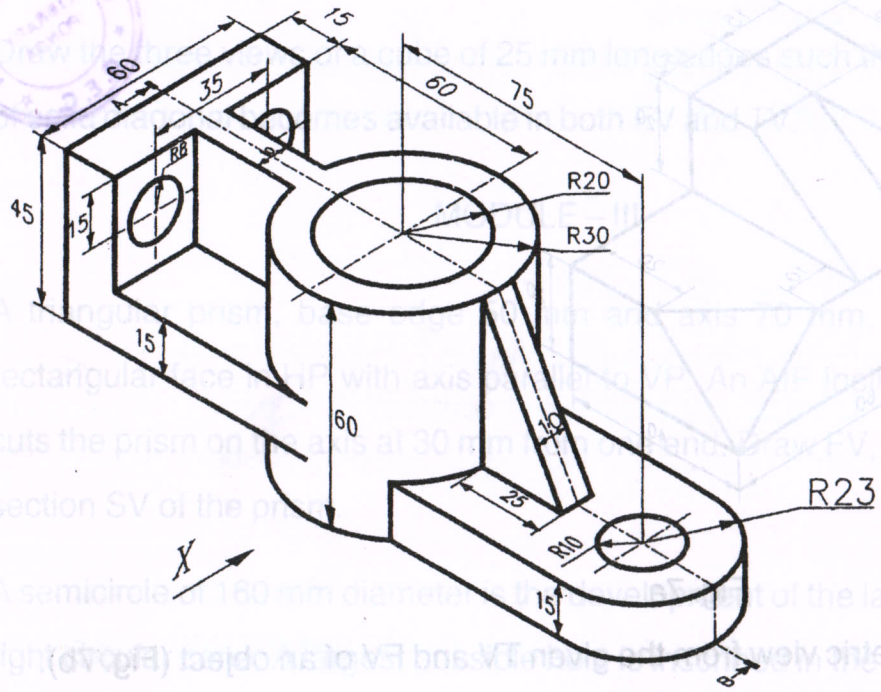

Fig. 8