B.Tech 1st Semester Exam., 2013

ENGINEERING GRAPHICS

Time : 3 hours   Full Marks : 70

Instructions :

(i)   The marks are indicated in the right-hand margin.

(ii) There are **NINE** questions in this paper.

(iii) Attempt **FIVE** questions in all.

(iv) Question No. **1** is compulsory.

1. Answer any *seven* of the following as
   directed :   2×7=14

   (a) What do you mean by single-stroke
       letters?

   (b) Two systems of placing dimensions on a
       drawing work are —— and —— systems.

       functional dectur (Fill in the blanks)

   (c) A polygon is a plane figure having more
       than —— sides.

       (i)   2
       (ii) 3
       (iii) 4
       (iv) 5

                              (Fill in the blank)

(d) When a line is contained by a profile plane, the sum of the angles of the inclination with the HP and VP is equal to

(i) 90 °

(ii) 180 °

(iii) 270 °

(iv) 360 °

(Choose the correct option)

(e) What is the trace of a plane?

(f) A solid having four equal equilateral triangular faces is called Tetrahedron

(Fill in the blank)

(g) The projection obtained on a VP of a cut solid is called sectional

(i) top view

(ii) front view

(iii) left-side view

(iv) right-side view

(Choose the correct option)

(h) Radial line method is used for developing —— and —— objects.

(Fill in the blanks)

(i) The intersection between a solid resting on HP and a plane inclined to HP is a vertical plane in the front view.

(Fill in the blank)

(j) An isometric projection is pictorial drawing of

(i) four views

(ii) three views

(iii) two views

(iv) one view

(Choose the correct option)

2. Draw an ellipse when the minor axis is 80 mm and the distance between the foci is 30 mm.   14

3. The view of a straight line AB from above is 60 mm long and it makes an angle of 45° with the XY line. The end A is in the VP and 25 mm from the HP. The end B is 70 mm from the HP. Draw the projections of the line AB and determine—

(a) the true length of the line; .

(b) the traces;

(c) inclinations with the reference plane.   14

4. A regular pentagonal lamina *ABCDE* of 30 mm side rests on HP on one of its sides such that it is inclined to the HP at 45° and the side on which it rests is inclined at 30° to the VP. Draw its projections. 14

5. A hexagonal pyramid of base of sides 30 mm long and altitude 60 mm is resting on one of its base edges on the ground. This edge makes 30° to the VP and the face containing this edge makes 45° to the HP. Draw the projections. 14

6. A cylinder, 40 mm diameter and 70 mm long, has its axis perpendicular to the VP. It is cut by a section plane inclined at 30° to the VP and 60° to the HP and passing through the midpoint on the axis. Draw a sectional view from above, the sectional view from the front and the true shape of the section. 14
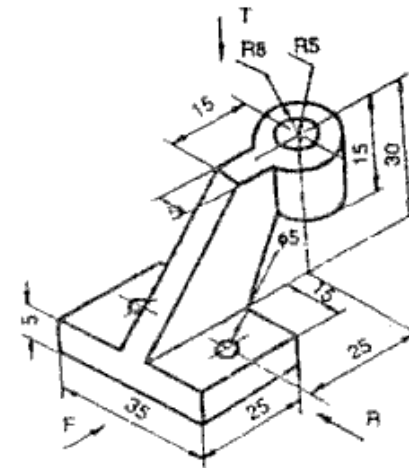
7. A right circular cone, diameter of base 50 mm and height 60 mm, rests on its base in HP. A section plane perpendicular to the VP and inclined to the HP at 30° cut the cone bisecting its axis. Draw the projections of the truncated cone and develop its lateral surface. 14

8. A cube of 30 mm side is placed centrally on the top of a cylindrical block of 52 mm radius and 20 mm height. Draw the isometric projection of the solids. 14

9. The figure below shows the pictorial views of the object :

Draw the principal views and dimension them. 14

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