Code : 021102

B.Tech 1st Semester Exam., 2014

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/Choose the correct option of any *seven* of the following :   2×7=14

   (a) Chisel pencil is used for drawing
      (i) straight lines
      (ii) curved lines
      (iii) freehand line work
      (iv) All of the above

   (b) The lettering in which the direction of alphabets is at 75°, called
      (i) Roman lettering
      (ii) Italic lettering
      (iii) vertical Gothic lettering
      (iv) None of the above

   (c) What is leader line?

   (d) Dimension lines, hatching and construction lines are drawn as
      (i) continuous thick
      (ii) continuous thin
      (iii) short dashed thin
      (iv) long-chain thin

   (e) The number of mutually perpendicular planes that can be surrounded an object in space is
      (i) two
      (ii) three
      (iii) four
      (iv) six

   (f) The ratio between the isometric and true length is
      (i) $\dfrac{2}{\sqrt{3}}$ (ii) $\dfrac{\sqrt{2}}{3}$
      (iii) $\dfrac{\sqrt{2}}{\sqrt{3}}$ (iv) $\dfrac{2}{3}$

   (g) A straight line will represent its true length in that plane to which it is
      (i) parallel
      (ii) perpendicular
      (iii) inclined to HP
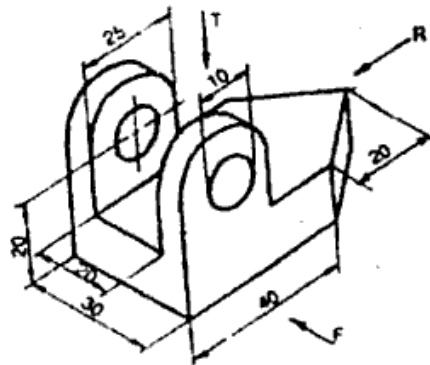   (iv) inclined to VP

(h) When the axis of a solid is parallel to both HP and VP, —— shows the true shape of the base.

(i) top view

(ii) side view

(iii) front view

(iv) None of the above

(i) If the section plane is perpendicular to the VP and parallel to the HP, then

(i) VT will be straight line parallel to xy

(ii) VT will be straight line perpendicular to xy

(iii) HT will be straight line parallel to xy

(iv) HT will be straight line perpendicular to xy

(j) The line of intersection between a cylinder and a prism consists of

(i) straight line

(ii) point

(iii) curved line

(iv) plane

2. The vertex of a hyperbola is 65 mm from its focus. Draw the hyperbola if the eccentricity is 5/2.   14

3. A line AB has its end A 15 mm above the HP and 20 mm in front of the VP, end B 40 mm above the HP and 50 mm in front of the VP. The distance between the end projectors is 45 mm. Draw the projections of the line and find out true length and true inclination with HP and VP.   14

4. A square lamina ABCD of 30 mm side, rests on one of its corners on the ground. Its plane is inclined at an angle of 45° to the HP and diagonal BD inclined at 60° to the VP and parallel to the HP. Draw its projections.   14

5. A hexagonal prism of 30 mm edge and 80 mm long rests on one of its rectangular faces on the ground. The axis of the prism is parallel to the HP and inclined to the VP to 60°. Draw the principal projections.   14

6. A cone of base diameter 40 mm and altitude 70 mm has its axis parallel to the ground and inclined at 60° to the VP. It is cut by a vertical plane passing through the mid-point on the axis. Draw the sectional view from the front.   14

7. A right circular cylinder of 25 mm diameter and 30 mm height of the axis is cut by sectional plane inclined at 30° to HP and passes 18 mm from the base along the axis. Draw the development of the truncated cylinder. 14

8. A right circular cone of base diameter 30 mm and height 36 mm rests centrally on a square of 48 mm side and 22 mm thick. Draw the isometric view of the two solids. 14

9. The figure shows the pictorial views of the object. Draw the principal views and their dimensions : 14

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