Code : 021102

2012

ENGINEERING GRAPHICS

Time : 3 hours *Full Marks* : 70

Instructions :

(i) ***All*** *questions carry equal marks.*

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

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

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

1. Answer as directed :

(a) Define a logarithmic spiral and an Archimedean spiral.

(b) What is a projector?

(c) What is the difference between first-angle projection and third-angle projection?

(d) Why are second- and fourth-angle projections not followed?

(e) Draw the projections of a point *A*, which is placed common to all four quadrants.

(f) VP and HP are always at —— to each other.

(Fill in the blank)

(g) Define horizontal trace and vertical trace of a plane.

(h) What are the classifications of solid?

(i) What is the relation between isometric length and true length?

(j) What are different methods for development of surfaces?

2. Construct a rectangular hyperbola. A point *Q* on the curve is 35 mm and 45 mm from the asymptotes. Draw the curve, showing at least four points on either side of *Q*.

3. A point *A* is in HP and 25 mm in front of VP. Another point *B* is also in HP and behind VP. The distance between their end projectors is 35 mm. Draw its projection when the line joining their planes makes an angle of 50° with *XY*. Also find the distance of the point *B* from the VP.

4. A line *AB* 55 mm long is inclined to VP and is in HP. The end *A* is 20 mm in front of VP. The length of front view is 35 mm. Draw the projections of the line and also find the inclination of the line with VP.

5. A hexagonal plate of size 30 mm is placed with a side on VP and surface inclined at 45° to VP and perpendicular to HP. Draw its projections.

6. A tetrahedron of side 50 mm is placed with a face parallel to VP with a side of that face parallel to HP. Draw its projections.

7. Two cylinders each 90 mm long and of 40 mm diameter penetrate each other such that the axes bisect at right angles. Draw the curve of penetration.

8. A sphere of diameter 40 mm rests centrally on the top of a cube of side 50 mm. Draw the isometric projection of the solids.

9. A hexagonal pyramid of side 30 mm and altitude 60 mm is resting on HP on its base with two of the base sides are perpendicular to VP. The pyramid is cut by a plane inclined at 30° to HP and perpendicular to VP and is bisecting the axis. Draw the development of the remaining portion of the pyramid.

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