Hall Ticket Number:

VASAVI COLLEGE OF ENGINEERING *(Autonomous)*, HYDERABAD
B.E. I Year I-Semester (Old) Examinations, December-2016
Engineering Graphics-I

Time: 3 hours   Max. Marks: 50

Note: Answer ALL questions in Part-A and any FIVE from Part-B

Part-A (15 Marks)

1. Why is engineering drawing called language of engineers? Why it is called as universal language? [1]

2. Define Ellipse. Mention engineering application of the Ellipse curve. [1]

3. A point A is 25mm above H.P. and 30mm in front of the V.P. Draw its projections. [1]

4. A square lamina of 40mm side is perpendicular to HP. One of its sides 20mm above HP and 15mm in front of VP. Draw its projections. [1]

5. Draw the projections of a triangular prism, base 40mm side and axis 50mm long, resting on one of its bases on the H.P. with a vertical face perpendicular to the V.P. [1]

6. Define scale. How scale's are designated. [2]

7. Draw a line 125mm long and quadrisect it. [2]

8. A point P is 20mm below H.P. and lies in the third quadrant. Its shortest distance from xy is 40mm. Draw its projections. [2]

9. An equilateral triangle of 50mm side has its V.T. parallel to and 25mm above xy. It has no H.T. Draw its projections when one of its sides is inclined at 45^0 to the V.P. [2]

10. A square pyramid base 40mm side and the axis 65mm long, has its base in the v.p. one edge of the base is inclined at 30^0 to the H.P. and a corner contained by that edge is on the H.P. Draw its projection. [2]

Part-B (5 × 7 = 35 Marks)

11. a) What are single stroke letters? Where are they used? [3]

    b) Construct a diagonal scale of scale R.F = 1/2.5 showing centimeters and millimeters to measure up to 25 centimeters. Mark a distance of 12.4cm on the scale. [4]

12. a) Draw the involute of given circle diameter 30mm. [3]

    b) The Major axis of ellipse is 100mm long and the distance between foci is 60mm. Draw ellipse. Find the length of minor axis. [4]

13. a) A point P is 50mm from both the reference planes. Draw its projections in all possible positions. [3]

    b) Two points A and B are in the H.P. The point A is 30mm in front of the V.P., while B is behind the VP. The distance between their projectors is 75mm and the line joining their top views makes an angle of 45^0 with xy. Find the distance of the point B from the V.P. [4]

14. a) A regular hexagon of 40mm side has a corner in the H.P. its surface is inclined at 45^0 to the H.P. and the top view of the diagonal through the corner which is in the H.P. makes an angle of 60^0 with the V.P. Draw its projections. [3]

    b) Draw the projections of a rhombus having diagonals 125mm and 50mm long, the smaller diagonal of which is parallel to both the reference planes, while the other is inclined at 30^0 to the H.P. [4]

15. a) A triangular pyramid of base 30mm side and axis 50mm long is resting on HP. on its base, [3] with a face perpendicular to VP. Draw projections of pyramid.

b) A hexagonal prism base 30mm and axis 75mm long has an edge of the base parallel to the [4] H.P. and inclined at 45^0 to the H.P. its axis makes an angle of 60^0 with the H.P. Draw its Projections.

16. a) Draw a Vernier scale of RF = 3/100 showing meters, decimeters and centimeters and to [3] measure up to 5 meters. Show the length of 3.69 meters on it.

b) The vertex of a hyperbola is 65mm from its focus. Draw the curve if the eccentricity is 3/2. [4] Draw a normal and a tangent at a point on the curve 75mm from the directrix.

17. Answer any *two* of the following: $[2 \times 3\frac{1}{2} = 7]$

a) A line AB 70mm long, has its end A 20mm above HP and 15mm in front of VP. The line is inclined at 30° to HP and 60° to VP. Draw its projections.

b) A thin circular plate of 70mm diameter is resting on its circumference such that its plane is inclined 60^0 to the H.P. and 30^0 to the V.P. Draw the projections of the plate.

c) Draw the projections of a square pyramid having one of its triangular faces in the VP and the axis parallel to and 40mm above the H.P. base 30mm side axis 75mm long.

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