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Code No.: 11008 O3

**VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD**  
**B.E. I Year I Semester Supplementary Examinations, June-2017**

**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. Enlist the drawing instruments required for engineering students. Prepare list of special equipments used in drawing office. [1]
2. Define parabola. Write the applications of the curve. [1]
3. A point A is 20mm below the H.P. and 30mm behind the V.P. Draw its projections. [1]
4. Define trace of a plane. What are the types of traces? [1]
5. Define solid. What are the types of solids? [1]
6. Why are scales needed in engineering drawing? Classify scales. [2]
7. Construct a regular pentagon, length of a side is 30mm. [2]
8. A line AB 50mm long is perpendicular to VP and parallel to HP. End point 'A' 10mm in front of VP and 20mm above HP. Draw its projections. [2]
9. A square ABCD of 40 mm side has a corner on the H.P and in front of the V.P. all the sides of the square are equally inclined to the H.P. and parallel to the V.P. Draw its projections and show its traces. [2]
10. A triangular prism, base 40mm side and height 65mm is resting on H.P. and one of its rectangular faces with the axis perpendicular to the V.P. Draw its projections. [2]

**Part-B (5 × 7 = 35 Marks)**

11. a) Draw a scale of 1: 60 to show metres and decimetres and long enough to measure up to 6 meters. [3]  
b) Construct a scale to be used with a map, scale of which is 1cm = 500m. The maximum length to be read is 5km. Mark on the scale, a distance of 3.85km. [4]
12. a) Draw the involute of given square of side 20mm. [3]  
b) The major and minor axis of an ellipse are 120mm and 80mm. Draw an ellipse by oblong method. [4]
13. a) "A point P its top view 40mm above xy, the front view 20mm below the top view". Draw the projection of the point and state the quadrant. [3]  
b) A line AB of 75mm long has its end A 15mm above HP and 20mm in front of VP. Length of top view is 50mm and top view makes an angle 45° with xy. Draw its projections. [4]
14. a) Draw projections of a regular pentagon of 40mm side having its surface inclined at 30° to the H.P. and a side parallel to the H.P perpendicular to the V.P. [3]  
b) Draw the projections of a regular hexagon of 25mm side having one of its sides in the HP and inclined 60° to the V.P. and its surface making an angle of 45° with the H.P. [4]

15. a) A hexagonal pyramid of side of base 25mm and axis 60mm long is resting on an edge of the base on HP with axis perpendicular to VP. Draw its projections. [3]
- b) Draw the projections of a cone base 50mm diameter and axis 75mm long, lying on a generator on the ground with the top view of the axis making an angle of  $45^\circ$  with the VP. [4]
16. a) On a map the distance between two points is 14cm. The real distance between them is 20mm. Draw a diagonal scale to show kilometres, hectometres and meters up to 25km. Show a distance of 17.36km on this scale. [3]
- b) The major axis of an ellipse is 100mm long and the foci are at a distance of 15mm from its ends. Find the minor axis. Draw the curve. [4]
17. Answer any *two* of the following: [2 × 3½ = 7]
- a) A line AB has its end A, 15mm above HP and 20mm in front of VP. End B is 60mm above HP and line is inclined at  $30^\circ$  to HP. Distance between end projectors of the line is 55mm. Draw projections. Find True length and inclination with VP.
- b) A square ABCD of 50mm side has its corner A in the HP its diagonal AC inclined at  $30^\circ$  to the H.P. and the diagonal BD inclined at  $45^\circ$  to the VP and parallel to the H.P. Draw its projections.
- c) A tetrahedron of 75mm long edges has one edge parallel to the HP and inclined at  $45^\circ$  to the V.P. while a face containing that edge is vertical. Draw its projections.

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