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Code No. : 1107S

**VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD**  
**B.E. I Year I - Semester (Supplementary) Examinations, July/Aug - 2015**

**Engineering Graphics - I**

Time: 3 hours

Max. Marks: 70

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

**Part-A (10 X 2=20 Marks)**

1. Draw a plain scale of 1:60 to show meters and decimeters and long enough to measure up to 12 meters.
2. Define vernier scale? Explain with a suitable example briefly.
3. Define involute. Draw an involute curve about an equilateral triangle of 3.0 cms.
4. Draw a line 125mm long and quadrisect it.
5. Two pegs A and B are fixed on a wall 3.5m and 5m above the floor. Find the true distance between the two pegs if the distance between them measured parallel to the floor is 4m. Use 1:100 scale.
6. A point P is 20mm above the HP and 30mm in front of the VP. Point Q is 45mm below the HP and 35mm behind the VP. Draw the projections of P and Q keeping the distance between their projectors equal to 80mm.
7. If a plane is perpendicular to one reference plane (either VP or HP) and parallel to the other (either VP or HP). Explain the possible front and top views considering both the cases.
8. A triangle PQR is perpendicular to HP and is parallel to the VP. Indicate HT and VT.
9. Explain what do you understand by polyhedral. How many faces an Icosahedron has and what is the shape of each of the faces.
10. Write any two examples of solids getting generated from planes

**Part-B (Marks: 5x10=50)**

11. a) List out the information required for construct of a scale. A room of  $1728 \text{ m}^3$  volume is shown by a cube of  $216 \text{ cm}^3$  volume. Find R.F. of the scale. [4]  
b) Construct a diagonal scale of R.F. =  $1/6250$  to read up to 1Km and to read meters on it. Show a length of 653m on it. [6]

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12. A regular hexagon of 40mm side has a corner in the H.P. Its surface is inclined at  $45^{\circ}$  to the H.P. and the top view of the diagonal through the corner which is in the H.P. makes an angle of  $60^{\circ}$  with the V.P. Draw its projections.
13. An electric bulb is fixed centrally on a wall 50cm from the ceiling. The wall is 4m long and 3m high. The switch for the bulb is located in a corner with the adjacent wall and is 1.5m above the floor. Draw the projections of the centers of the bulb and the switch and find the true distance between them, Use a suitable scale.
14. Two chemical vessels placed in two adjoining rooms are to be connected by a straight pipe passing through a 0.25m thick common wall between the rooms. The points of connections are respectively 1m and 3m above the floor and 1m and 2.5m from the common wall. The distance between the points of connection, measured on the floor and parallel to the wall is 3.5m. Determine the required length of the pipe.
15. The top view of the square lamina of side 60mm is a rectangle of sides 60mm x 20mm., with the longer side of the rectangle parallel to both HP and VP. Draw the front view and the top view of the square lamina. What is the inclination of the surface of the lamina with the HP and the VP?
16. A right regular pentagonal pyramid with side of the base 40mm and height 75mm rests on one of the edges of its base on the ground; the base being tilted up until the vertex is 50mm above the ground. Draw the projections of the pyramid if the edge on which it is resting is parallel to the VP.
17. Draw the projections of a cone, base 50mm diameter and axis 75mm long, lying on a generator on the ground with top view of the axis making an angle of  $45^{\circ}$  with V.P.

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