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Code No. : 11008 S

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

**Engineering Graphics - I**

Time: 3 hours

Max. Marks: 70

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

**Part-A (10 × 2 = 20 Marks)**

1. What is a scale and explain its uses in engineering practice?
2. An actual length of van is 15 ft and is represented by 25 mm length in the model, determine the Representative Fraction.
3. The \_\_\_\_\_ method of drawing an ellipse represents an isometric pictorial circle.
4. Draw rhombus of 100 mm & 70 mm long diagonal and inscribe an ellipse in it.
5. What is the trace of a straight line?
6. If the Vertical Trace (V.T.) of a line lies 30 mm above reference line (XY), then its position will be \_\_\_\_\_.
7. What is the difference between a plane and a lamina?
8. Show a rectangular plane inclined  $45^\circ$  to HP and perpendicular to VP lying in the first quadrant by means of their traces.
9. What are different types of solids?
10. Draw the projections of an equilateral triangle prism of base 30 mm and axis 50 mm resting on its base on HP with its two edges equally inclined to VP. The base of VP, is away from VP.

**Part-B (5 × 10 = 50 Marks)**

11. a) What is the principle of a plain scale? [4]  
b) A rectangular field of 25000 square meters is represented on a map by a rectangle of 5cm × 4cm sides. Calculate the R.F. Draw a diagonal scale to read up to a single meter and long enough to measure up to 500 m. Mark a length of 362 m on the scale. [6]
12. a) What is an involute? [4]  
b) A. Draw an involute profile of a regular pentagon 30 mm side. Draw a tangent and a normal at any point on the curve. [6]
13. a) Define the following: [4]  
i) Apparent section  
ii) True section.  
b) A 100 mm long line PQ is inclined at  $30^\circ$  to the HP and  $45^\circ$  to VP. Its midpoint is 35 mm above the HP and 50 mm in front of VP. Draw its projections. [6]
14. a) A rectangular plate of 60 mm by 40 mm has one of its shorter edges in the VP and inclined at  $40^\circ$  to the HP. Draw its top if its front view is a square of side 40 mm. [5]  
b) A regular pentagonal lamina of 40 mm side has its plane vertical and inclined at  $30^\circ$  to the VP. Draw its projections when one of its sides is perpendicular to HP. [5]

Contd... 2

15. a) Draw the projections of pentagon pyramid of side 20 mm resting on one of its base edges on HP and parallel to VP. The axis is parallel to HP. The height of pyramid is 60 mm. [5]
- b) Draw the projections of a hexagonal prism of base side 20 mm and axis length 50 mm when it rests on the ground on one of its edges of the base and the axis is inclined at  $35^\circ$  to the ground and parallel to the VP. [5]
16. a) Draw, describe and give general applications of any 5 types of lines. [5]
- b) Draw a cycloid for one complete revolution of a circle having 60 mm diameter. Draw a tangent and normal to the curve at a point that is 45 mm above the base line. [5]
17. Answer any *two* of the following:
- a) A 70 mm long line is inclined at  $30^\circ$  to the H.P. The H.T. of the line lies 15 mm below the reference line and V.T. of the line does not exist. Draw its projections when an end of the line is 25 mm above the H.P. [5]
- b) A circular plate is placed perpendicular to the V.P and it appears as an ellipse in the top view of major and minor axes of 80 mm and 50 mm length respectively. Draw its projections and determine the inclination of the plate with the H.P. [5]
- c) A square pyramid, having a base with a 40 mm edge and a 70 mm axis is resting on a triangular faces on the V.P. Draw its projections when the axis is parallel to and 30 mm above the H.OP. [5]

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