

Roll No .....

## BE - 105

**B.E. I & II Semester** Examination, December 2014

### Engineering Graphics

*Time : Three Hours*

**Maximum Marks : 70**

**Note :** Attempt all questions with their internal choices. Assume suitable data if missing/ misprinted.

1. a) List various types of scales. 2
- b) Differentiate cycloid with Epicycloid. 2
- c) How a cone is cut to get the different conical curves? 3
- d) The dimensions of an ancient tower, Qutab minar, are as follows: Height = 79 yards and 1 foot, Bottom diameter = 15 yards 2 feet and 3 inches, Top diameter = 3 yards, if the height is represented by a 29.75 inch long line on the drawing, find RF. Draw a diagonal scale of this RF and long enough to show the diameter of the tower. 7

OR

A wheel of diameter 60cm rolls on a straight horizontal road. Draw the locus of a point P on the periphery of the wheel, for one revolution of the wheel, if P is initially on the road. Also draw normal and tangent at any point of the curve. 7

2. a) What are the various types of projections? 2
- b) Explain the traces of a line. 2
- c) Draw the projection of a 50mm long line AB perpendicular to H.P., one of its end is in the H.P. and 15mm in front of the V.P. 3
- d) The top view of a 75mm long line measures 65mm, while the length of its front view is 50mm. Its one end A is in the H.P. and 12mm in front of the V.P. Draw the projection of AB and determine its inclination with the H.P. and the V.P. 7

OR

A straight line PQ has its end P 20mm above the H.P. and 30mm in front of the V.P. and the end Q is 80 mm above the H.P. and 70 mm in front of the V.P. If the end projectors are 60 mm apart, Draw the projections of the line. Determine its true length and true inclinations with the reference plane. 7

3. a) A rectangle ABCD of size 30mm×20mm is inclined to the H.P. at 30 degree. Its shorter side AB is parallel to the HP and inclined at 45 degree to the VP. Draw the projections of the rectangle. 7

- b) A hexagonal pyramid of base side 30mm and axis 60mm, has an edge of its base on the ground inclined at 45 degree to the V.P. and the axis is inclined at 30 degree to the H.P. Draw its projections. 7

OR

Draw the projections of a cone, base 50mm diameter and axis 60mm long, resting on H.P. on a point of its base circle with the axis making an angle of 30 degree with H.P. and its top view making an angle of 45 degree with V.P. 7

4. a) A pentagonal prism with a base side of 45mm and an axis length of 90mm is resting on its base on the H.P. with a vertical face parallel to and away from the V.P. a profile section plane which is perpendicular to both the reference plane, cuts the prism at 15mm away from the axis of the prism. Draw the top view, front view, sectional side view of the prism. 7
- b) A hexagonal prism, edge of base 20mm and axis 50mm long, rest with its base on H.P. such that one of its rectangular faces is parallel to the V.P., it is cut by a plane perpendicular to the V.P., inclined at 45 degree to the H.P. and passing through the right corner of the top face of the prism. Draw the sectional top view and develop the lateral surface of the truncated prism. 7

OR

A cube of 50mm edge, is resting on a face on H.P. such that, a vertical face is inclined at 30 degree to the V.P., it is cut by a section plane perpendicular to V.P. and inclined at 30 degree to H.P. and passing through a point at 12mm from the top end of the axis. Develop the lateral surface of the lower portion of the cube. 7

5. a) Name any two CAD software. 2
- b) What is the use of array command? 2
- c) Write the advantages of CAD. 3
- d) Draw the isometric view of a hexagonal prism of base side 30mm and axis 70mm. The prism is resting on its base on the H.P. with an edge of the base parallel to the V.P. 7

OR

Draw the isometric view of a cone of a base diameter 50mm and axis 60mm. The cone has its base on the H.P. 7

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