Total No. of printed pages = 4

25/1/19

CE 171107

Roll No. of candidate | | | | | | | | | | | |

2019

B.Tech. 1st Semester End-Term Examination

ENGINEERING GRAPHICS – I

(New Regulation & New Syllabus)

(w.e.f. 2017-2018)

Full Marks – 70 Time – Three hours

The figures in the margin indicate full marks for the questions.

Answer Q.No. 1 and any *four* from the rest.

1. Fill in the blanks : $(10 \times 1 = 10)$

   (i) A cube of 1 m^3 volume is represented by a cube of 1 cm^3 in drawing. The RF. used is ————.

   (ii) The eccentricity of a hyperbola is ———— than one.

   (iii) In aligned method of dimensioning, we always read the dimensions from ————.

   (iv) Hidden edges or outlines in a drawing are represented by ———— lines.

   (v) The extension lines while dimensioning can be drawn by ———— pencil.

[Turn over

(vi) When measurements are required in three units, ———— scale is used.

(vii) A trochoid is a curve generated by a point on the circumference of a circle as the circle rolls along ————.

(viii) In case of ———— angle projection method, the plane is in between the observer and the object.

(ix) In case of ———— angle projection method, the object is in between the observer and the plane.

(x) The point of interaction of a line with the horizontal plane is called the ————.

2. (a) Draw the following sentence using single stroke vertical block letters of height 25 mm.

(b) Draw the same sentence using inclined block letters of the same height. (8 + 7 = 15)

3. (a) Construct a scale of R.F. = 1:250 to show decimetre and long enough to measure up to 30 meters. Indicate a distance of 28.9 m on it.

(b) Construct a plain scale of 1:14 to read feet and inches and long enough to measure 7 feet. Show a distance of 5 feet 10 inches on it. (8 + 7 = 15)

4. (a) Draw a parabola when the distance between its focus and directrix is 50 mm. Also draw a tangent and a normal at 60 mm from the directrix.

(b) Construct an ellipse having a major and minor axis of 110 mm and 70 mm respectively using 'Concentric circles method'. (7 + 8 = 15)

5. (a) A bicycle wheel of 50 mm diameter is rolling over a straight path. Draw the curve traced curved by a point on the circumference of the wheel. Also draw a tangent and a normal to the curve at a point 35 mm above the path.

(b) Draw the locus of a point that moves in such a way that the ratio of its distance from a fixed point to a fixed straight line is 2/3. The actual distance between the fixed line and the fixed point is 50 mm. (8 + 7 = 15)

6. (a) Draw the projections of the following points on a common reference line, keeping the distance between their projectors 30 mm apart.

(i) Point A in the V.P. and 50 mm below H.P.

(ii) Point B in the H.P. and 30 mm behind V.P.

(iii) Point C 20 mm below H.P. and 50 mm in front of V.P.

(iv) Point D 10 mm below H.P. and 30 mm behind V.P.

(b) Draw the projections of a line 70 mm long line PQ, situated in the V.P. and inclined at 30° to the H.P. The end P of the line is 25 mm above the H.P. (8 +7 = 15)

7. (a) A square plate ABCD with 40mm sides has it's corner A in the H.P. Its diagonal AC is inclined at 45° to the H.P. while the diagonal BD is parallel to the H.P. and inclined at 30° to the V.P. Draw its projections.

(b) A hexagonal plane with 30 mm side has its corner A in the H.P. The surface of the plane is inclined at 45° to the H.P. and the diagonal containing the corner A is inclined at 30° to the V.P. Draw its projections. (7 + 8 = 15)
