Total No. of printed pages = 6

CE 131107

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

2017

B.Tech. 1st Semester End-Term Examination

ENGINEERING GRAPHICS – I

(Old Regulation)

Full Marks – 100 Time – Four hours

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

Answer Question No. 1 and any *Six* from the rest.

Question No.1 (compulsory) and Question No .2 (optional) should be answered in main answer script. Question Nos. 3 to 9 should be answered in drawing sheet.

1. Fill in the blanks with appropriate words from the given list : (10 × 1 =10)

   (a) To draw or measure angles _____ is used.

   (i) set-squares

   (ii) T-square

   (iii) protractor

[Turn over

(b) The edge of the board on which T-square is made to slide is called its ————

(i) working edge

(ii) straight edge

(iii) chisel edge

(c) The T-square is used to draw ———— lines.

(i) vertical

(ii) horizontal

(iii) curved

(d) To remove unnecessary lines ———— is used.

(i) sand bow

(ii) duster

(iii) eraser

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

(i) plain

(ii) comparative

(iii) diagonal

(f) Measurements from the scale to the drawing are transferred with the aid of a ————

(i) divider

(ii) compass

(iii) scale

(g) The scale of chords is used to set out or measure ————

(i) chords

(ii) lines

(iii) angles

(h) To draw the plan of a building on paper ———— scale is generally used.

(i) enlarging

(ii) reducing

(iii) full-size

(i) For an ellipse, eccentricity is always ———— 1.

(i) greater than

(ii) less than

(iii) equal to

(j) Inclined letters lean to the right, the slope being ———— with the horizontal

(i) 20°

(ii) 80°

(iii) 75°

2. Answer the following questions (any *five*) (5 × 3 = 15)

(a) Define Representative Fraction.

(b) Write a list of minimum drawing instruments and accessories that a student should possess for engineering graphics.

(c) What is dimensioning? Name the two systems of placing dimensions.

(d) Name the various types of scales.

(e) Define eccentricity What is the eccentricity of parabola and hyperbola?

(f) How is a conic section obtained?

(g) Name three basic types of lines with their application.

3. Answer the following :

(a) Draw a plain scale of 1:50 to show metres and decimetres and long enough to measure 6 metres. Show a distance of 4.9m on it. (6)

(b) The area of a field is 50,000 sq.m. The length and breadth of the field on the map is 10 cm and 8 cm respectively Construct diagonal scale which can read up to 500m. Mark a length of 419m on the scale. What is the R.F. of the scale? (9)

4. Write the following text in freehand single stroke vertical capital letters of height 20mm. (15)

5. Answer the following :

(a) On a map, the distance between two points is 15cm. The real distance between them is 30 km. Find the R.F. Draw a diagonal scale to read kilometres and hectometres and to measure up to 25 kms. Show a distance of 17.4 km on the scale. (9)

(b) Draw a vernier scale of R.F.=$\frac{1}{25}$ to read centimetres and measure up to 4 metres. Show a length 2.46 m on the scale. (6)

6. The major axis of an ellipse is 140 mm long and the minor axis is 110mm long. Find the foci and draw the ellipse by 'arcs of circle' method. Draw a tangent to the ellipse at point on it 25mm above the major axis. (15)

7. A circle of 60 mm diameter rolls on the circumference of another circle of 185 mm diameter and outside it. Trace the locus of a point on the circumference of the rolling circle for one complete revolution Name the curve. Draw a tangent and a normal to the curve at a point 120 mm from the centre of the directing circle. (15)

8. A line AB, 80 mm long is inclined at 40° to the H.P. and 35° to the V.P. Its end A is 15 mm above the H.P. and 18 mm in front of V.P. Draw its projections. (15)

9. Answer the following:

(a) Draw the projections of the following Points: (5)

(i) Point A. 20 mm above HP and 25 mm behind VP.

(ii) Point B, 25 mm below HP and 15 mm in front of VP.

(b) The vertex of a hyperbola is 65 mm from its focus. Draw the curve if the eccentricity is 3/2. Draw a normal and tangent at a point on the curve75mm from the directrix. (10)
