Total No. of printed pages = 6

CE 181103

Roll No. of candidate

2019

B.Tech. 1st Semester End-Term Examination

ENGINEERING GRAPHICS AND DESIGN

(New Regulation) (w.e.f. 2017-18) and
(New Syllabus) – (Group B) (w.e.f. 2018-19)

Full Marks – 70   Time – Three hours

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

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

1.   Answer the following :

$(10 \times 1 = 10)$

   (i)   Representative Fraction (RF) is defined as

      (a)   length of an object in the drawing / actual length of the object

      (b)   length of an object in the drawing / isometric length the object

      (c)   actual length of the object / length of an object in the drawing

      (d)   isometric length the object / length of an object in the drawing

[Turn over

(ii) A point 'P' in above H.P. and behind V.P. the point is in

    (a)   1st quadrant

    (b)   2nd quadrant

    (c)   3rd quadrant

    (d)   4th quadrant

(iii) When the line in parallel to V.P. and perpendicular to H.P. we can get its true length in

    (a)   front view

    (b)   top view

    (c)   both top view and front view

    (d)   none

(iv) A circle will appear on an isometric drawing as an

    (a)   parabola

    (b)   cycloid

    (c)   ellipse

    (d)   circle

(v) The isometric axis are inclined at —————— degree to each other.

    (a)   60

    (b)   90

    (c)   120

    (d)   150

(vi) A drawing instrument set usually contains all the following, except

    (a) low compass

    (b) scale

    (c) dividers

    (d) extra leads

(vii) Which of the following represent reducing scale?

    (a) 1:1

    (b) 1:2

    (c) 2:1

    (d) 10:1

(viii) Name the curve which has zero eccentricity.

    (a) ellipse

    (b) parabola

    (c) hyperbola

    (d) circle

(ix) If the front view of an object exhibits width and height, then what dimensions of an object are exhibited by a right side view

    (a) length and width

    (b) length and height

    (c) height and width

    (d) length and breadth

(x) Planes which are inclined to both the horizontal and vertical planes are called

    (a) oblique planes

    (b) auxiliary planes

    (c) profile planes

    (d) none of these

2. (a) Write the sentence using capital letter (ht = 2.5 cm)   (7)

'Long live AECSU'

(b) Construct a Vernier scale to road meters, decimeters and centimeters and long enough to measure upto 4m. R.F. of the scale in 1:20. Mark an your scale a distance of 2.28 m.   (8)

3. (a) Draw the projections of the following points on the same ground line, keeping the projection 25 mm apart.   (8)

P, 25 mm below the H.P. and 25 mm behind the V.P.

Q, 15 mm above the H.P. and 50 mm behind the V.P.

R, 40 mm below the H.P. and 25 mm in front of the V.P.

S, in both the H.P. and the V.P.

(b) A line MN, 50 mm long has its end M 25 mm above H.P. and 30 mm in front of V.P. The line is perpendicular to V.P. and parallel to H.P. Draw its projection.   (7)

4. (a) Show by means of traces, each of the following planes : $(3 \times 2 = 6)$

    (i)   perpendicular to the H.P. and the V.P.

    (ii) perpendicular to the H.P. and inclined at 30° to the V.P.

    (iii) parallel to and 40 mm away from the V.P.

    (b) A line PQ, 90 mm long, is inclined at 45° to the H.P. and its top view makes an angle of 60° with the V.P. The end P is in the H.P. and 12 mm in front of the V.P.

    Draw its front view and find its true inclination with the V.P. (9)

5. Draw an ellipse by "concentric circle method" and find the length of the minor axis with the help of the following data : (15)

    (a) Major axes = 100 mm

    (b) Distance between foci 80 mm.

6. A square plate of side 60 mm is held on a corner on H.P. with a diagonal horizontal and inclined at 45° to V.P. The plate is seen as a Rhombus in a plane with other diagonal measured at 30 mm. Draw the projection of plate and determine the angle with which is makes with H.P. (15)

7. (a) Draw the projections of a square pyramid, side of base 30 mm and axis is 60 mm long. The pyramid is 15 mm above H.P. and 15 mm behind V.P. with its axis vertical and two sides of its base parallel to V.P. (7)

(b)   Draw the isometric view.   (8)

12 mm

40 mm

45 mm

30 mm