Total No. of printed pages = 4

CE 181103

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

2024

B.Tech. 2nd Semester End-Term Examination

ENGINEERING GRAPHICS AND DESIGN

New Regulation (w.e.f. 2017-18) &
New syllabus (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 2 and any *three* from rest.

1. Answer the following : (10 × 1 = 10)

(i) To measure very small units with great accuracy, the scale used is

(a) Plain scale

(b) Vernier Scale

(c) Chord scale

(d) Protector

(ii) The least count (LC) of vernier scale is

(a) LC = 1 main scale div

(b) LC = 1 vernier scale div

(c) LC = 1 main scale div – 1 vernier scale div

(d) LC = 1 main scale div + 1 vernier scale div

(iii) The distance of any point from the focus is equal to its distance from directrix in

(a) Ellipse (b) Parabola

(c) Hyperbola (d) Circle

[Turn over

(iv) Eccentricity is always greater than 1 for

(a) Circle (b) Parabola

(c) Hyperbola (d) Ellipse

(v) The front view of point below reference line and top view above reference line the point is in

(a) First quadrant (b) Second quadrant

(c) Third quadrant (d) Fourth quadrant

(vi) When the projectors are parallel to each other and also perpendicular to the plane, the projection is called?

(a) Isometric projection (b) Perspective projection

(c) Orthographic projection (d) None of above

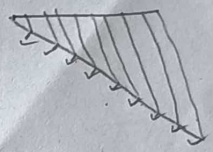
(vii) True length of line can be obtained from H.P when line is

(a) Perpendicular to V.P

(b) Inclined to V.P and parallel to H.P

(c) Inclined to H.P and parallel to V.P

(d) Inclined to both H.P and V.P



(viii) In AUTOCAD drawing, Circle can be drawn using

(a) Center point and radius

(b) Three points given on circumferences

(c) Tangent, tangent and radius method

(d) All of above

(ix) Which of the file extension can not open in AUTOCAD?

(a) dwg (b) dxf

(c) doc (d) dws

(x) To obtain parallel line and parallel curve _____ command is used

(a) Copy (b) Fillet

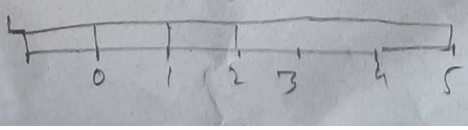
(c) Offset (d) None of above

2. (a) Write freehand in single-stroke capital letters of 12 mm height, the following sentence :

"DIMENSION LINES ARE CONTINUOUS THIN LINES". (8)

(b) Construct a vernier scale to read distance correct to decametre on a map having a RF = 1/40000. The scale should be long enough to ensure 6 kilometres. Mark on the scale distance of 3.36 km and 0.69 km.

(6+2+2 =10)



3. (a) The major axis of an ellipse is 150 mm long and the minor axis is 100 mm long. Find the foci and draw the ellipse. Draw a tangent to the ellipse at a point 25 mm above the major axis. (2+4+2 = 8)

(b) A ball thrown up in the air reaches a maximum height of 45 metres and travels a horizontal distance of 75 metres. Trace the path of ball, assuming it to be parabolic. (6)

4. (a) Point A is 29 mm above HP and 30 mm in front of VP and point B is in the HP and 40 mm behind the VP. The distance between their projectors is 50 mm. Draw the projections of the points. Also draw straight lines joining their to and front views. (4+2 = 6)

(b) Plan and elevation of a line AB 60 mm long, measure 54 mm and 45 mm respectively. End A is 15 mm from HP and 10 mm from VP. Draw its projections and determine its inclinations to the reference planes. (6+2 = 8)

5. (a) A regular hexagonal lamina, side 20 mm rests on HP on one of its sides such that it is perpendicular to the HP and inclined to VP at 30°. Draw its projections, when the corner nearest to the VP is 15 mm away from it. (6)

(b) A regular pentagonal lamina of 25 mm side, rests on HP on one of its sides such that it is inclined to the HP at 30° and the side on which it rests, inclined to 45° to the VP. Draw its projections. (8)

6. (a) A regular hexagonal prism, side of base 20 mm and 55 mm long, lies on one of its rectangular faces on HP and its axis inclined at 45° to the VP. Draw its projections then the centre of the area of its end face, which is towards the VP, is 20 mm away from HP. (7)

(b) A hexagonal pyramid, side of base 25 mm and height 50 mm, rests on its base on HP with one of its base edges perpendicular to VP. An auxiliary inclined plane inclined to HP at 45° cuts the pyramid, bisecting its axis. Draw its front view, sectional top view and true shape of the section. (7)

7. Draw isometric view of model, two views are shown below. (14)