Total No. of printed pages = 3

CE 181103

06/07/23

Roll No. of candidate

2023

B.Tech. 2nd Semester End-Term Examination

CE/ME/ChE/IPE

ENGINEERING GRAPHICS AND DESIGN

New Regulation (w.e.f. 2017-18) & New Syllabus (w.e.f. 2018-19)

Full Marks – 70

Time – Four 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) Eccentricity of parabola is _____.

   (ii) A curve traced out by an end of piece of thread unwound from a polygon is called as _____.

   (iii) A vernier scale is to be constructed to read centimetres upto a length of 5 metres with a R.F of 1/25. The total length of the scale will be _____ cm.

   (iv) The top view and front view of a point is below the reference line when the point is in _____ quadrant.

   (v) The point on which a line or line produced meets the plane is called as _____.

   (vi) The minimum allowable number of layers in a AutoCAD drawing is _____.

   (vii) With the help of 'scale' command in AutoCAD, one can change _____ of the object.

[Turn over

(viii) Which command of the following is used to draw a rectangle with rounded corner :

(a) Elevation

(b) Fillet

(c) Polyline

(d) None of the above

(ix) Which of the following file extension can not open the AutoCAD:

(a) dwg (b) dxf

(c) dot (d) dws

(x) Fillet command can be used to obtain :

(a) Sharp corners (b) Round corners

(c) Both of the above (d) None of the above

2. (a) Write the following sentence in single stroke vertical capital letters (height 12mm) :

"Engineers are the Nation Builders" (8)

(b) A room of 1728 m^3 volume is shown by a cube of volume 216 cm^3. Find the RF and construct a plain scale to measure upto 42m. Mark a distance of 22m on the scale. (7)

3. (a) Construct an ellipse when the distance of the focus from the directrix is equal to 80mm and eccentricity is 2/3. (8)

(b) Draw the projections of a point P which is 20mm below HP, and lies in the 3rd quadrant and its shortest distance from XY is 50mm. (7)

4. (a) The top view of a 75 mm long line AB measures 65 mm, while the length of its front view is 50 mm. Its one end 'A' is in the line HP and 12 mm in front of the VP. Draw the projections of AB and determine its inclinations with the HP and the VP. (10)

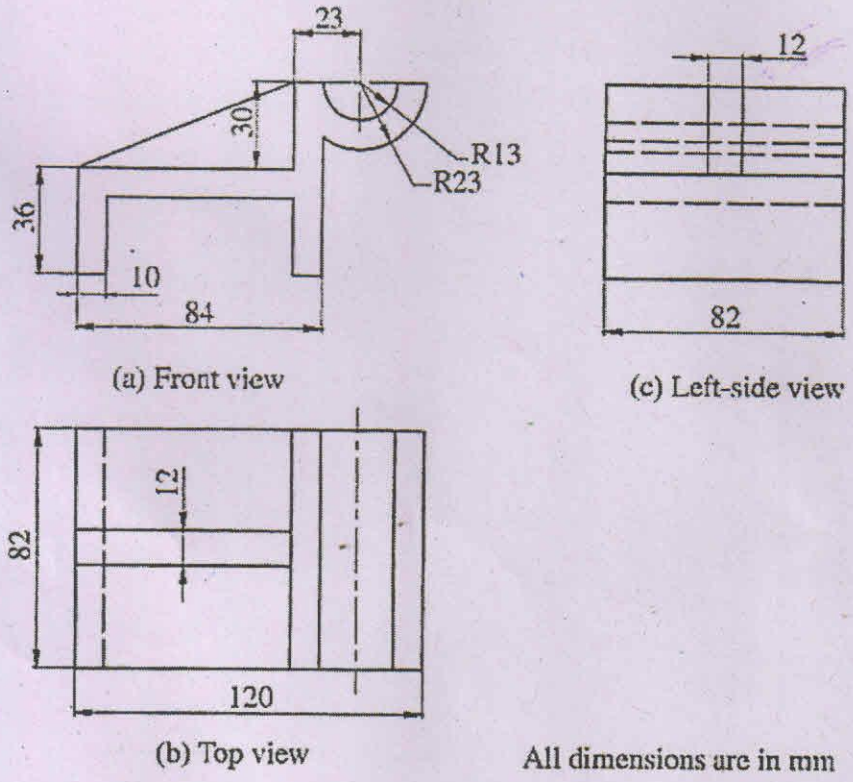
(b) A square ABCD of 50 mm side has it's corner on the HP and 25 mm in front of the VP: All the sides of the square are equally inclined to the HP and parallel to VP. Draw its projections and show its traces. (5)

5. (a) Draw the projections of a hexagonal pyramid base 40 mm side and axis 60 mm long has its base on the HP. One edge of the base is inclined at 45° to the VP. (8)

(b) A square pyramid base of 40 mm side and axis 65 mm long has its base in the VP. One edge of the base is inclined at 30° to the HP and a corner contained by that edge is on the HP. Draw its projections. (7)

6. A hexagonal prism has a face on the HP and the axis parallel to the VP. It is cut by a vertical section plane, the HT of which makes an angle of 45° with xy and which cuts the axis at a point 20 mm from one of its ends. Draw its sectional front view and the true shape of the section. Side base is 25 mm long and height is 65 mm. (15)

7. Draw the isometric view of the open semi-circular block shown below : (15)



(a) Front view

(c) Left-side view

(b) Top view

All dimensions are in mm