

I B. Tech I Semester Supplementary Examinations, December - 2021
ENGINEERING DRAWING

(Com. to CE, EEE, ME, ECE, CSE, Chem. E, EIE, IT, Pet E, Agri E)

Time: 3 hours

Max. Marks: 75

Answer any five Questions one Question from Each Unit
All Questions Carry Equal Marks

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**UNIT-I**

1. a) The Vertex of a hyperbola is 65mm from its focus. Draw the curve if the eccentricity is  $3/2$ . Draw a normal and a tangent at a point on the curve, 75 mm from the directrix. (8M)
- b) Construct a scale to be used with a map, the scale of which is 1 cm = 500m. The maximum length to be read is 5 km. Mark on the scale a distance of 3.65 km. (7M)

Or

2. a) Construct an ellipse, with distance of the focus from the directrix as 65 mm and eccentricity as  $2/3$ . Also draw normal and tangent to the curve at a point 50 mm from the directrix. (8M)
- b) A rectangular plot of land measuring 1.28 meter is represented on a map by a similar rectangle of 8 sq. cm. Calculate RF of the scale. Draw a diagonal scale to read single meter. Show a distance of 438 cm on it. (7M)

**UNIT-II**

3. a) Two points A and B are on the HP. The point A is 30mm in front of the VP, while B is behind the VP. The distance between their projectors is 75mm and the line joining their top views makes an angle of  $45^\circ$  with xy. Find the distance of the point B from the VP. (8M)
- b) Two pegs fixed on a wall are 4.5 m apart. The distance between the pegs measured parallel to the floor is 3.6m. If one peg is 1.5 m above the floor, find the height of the second peg and the inclination of the line joining the two pegs, with the floor. (7M)

Or

4. a) Draw the projections of the following points on the same ground line, keeping the Projectors 20mm apart. (8M)
  - (i) Point A, 20mm above the HP. and 30mm in front of the VP.
  - (ii) Point B, on the HP. and 40mm in front of the VP.
  - (iii) Point C, 15mm above the HP. and in the VP.
  - (iv) Point D, 15mm above the HP. and 50mm behind the VP.
- b) The line EF 60 mm long is in VP and inclined to HP. The top view measures 45 mm. The end E is 15 mm above HP, Draw the projections of the line. Find its inclination with HP. (7M)

**UNIT-III**

5. a) An equilateral triangular lamina of side 30 mm is parallel to HP. and perpendicular to VP One of its sides is 20 mm in front of VP. And 30 mm above HP. Draw its projections. (8M)

- b) A regular hexagon of 40mm has one of the side in the VP. and inclined at  $60^{\circ}$  to HP. Its surface is inclined at  $45^{\circ}$  to the VP. Draw its projections. (7M)

Or

6. a) A plate having shape of an isosceles triangle has base 50 mm long and altitude 70 mm. It is so placed that in the front view it is seen as an equilateral triangle of 50 mm sides one side inclined at  $45^{\circ}$  to xy. Draw its top view. (8M)
- b) A regular hexagon of 40mm has a corner in the HP. Its surface is inclined at  $45^{\circ}$  to the HP and the top view of the diagonal through the corner which is in the HP makes an angle of  $60^{\circ}$  with the VP. Draw its projections. (7M)

#### UNIT-IV

7. A cube of 40mm side rests with one of its square faces on the H.P. such that one of its vertical faces is (a) Perpendicular to V.P.  
(b) Inclined at  $30^{\circ}$  to V.P.  
(c) Equally inclined to the V.P. Draw its projections. (15M)

Or

8. Draw the projections of a triangular prism, base 40 mm side and axis 50 mm long, (15M)  
(a) Resting on one of its bases on the H.P. with a vertical face perpendicular to the V.P.  
(b) Resting on the H.P. on one of its rectangular faces with the axis parallel to the V.P. Draw its Projections.

#### UNIT-V

9. Draw the isometric view of a square prism, with side of base 40mm and length of axis 70mm, when its axis is (a) Vertical and (b) Horizontal. (15M)

Or

10. Draw the Front View, Top view & Both side views of the figure shown below. All dimensions are in mm. (15M)

