Reg. No.															

Question Paper Code	12546

B.E. / B.Tech. / M.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2023

First Semester

Civil Engineering

(Common to All Branches)

20ESGE101 - ENGINEERING GRAPHICS

(Regulations 2020)

Duration: 3 Hours Max. Marks: 100

Answer ALL Questions

PART-A (5 × 20 = 100 Marks)

			Marks, K-Level , CO
1.	a)	Construct a hyperbola with a distance of 40 mm between the focus and the directrix and an eccentricity of 4/3. Additionally, illustrate the normal and tangent to the curve at any point.	*20,K3,CO1*
		OR	
	b)	Draw the front, top, and right-side views of the object given in Fig.1. b.	*20,K3,CO1*

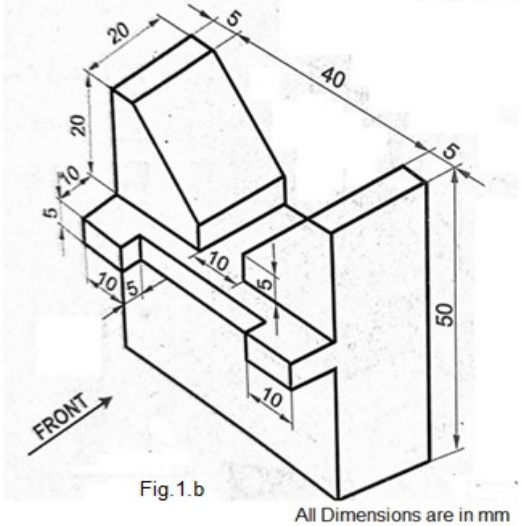

Fig.1.b

All Dimensions are in mm

2.	a)	One end A of line AB, 75 mm long is 20 mm above H.P and 25 mm in front of V.P. The line is inclined at 30° to H.P and the top views makes 45° with V.P. Draw the projections of the line and determine the true inclinations with the vertical plane.	*20,K3,CO2*
		OR	
	b)	A rectangular plate of dimensions 50 x 25 mm is resting on its shorter side on H.P. and inclined at 30° to V.P. Its surface is inclined at 60° to H.P. Draw its projection.	*20,K3,CO2*

3. a) A hexagonal prism of base side 30 mm and axis length of 70 mm is resting on one of its base edges on HP with the axis inclined at an angle of 30° to the HP and parallel to the VP. Draw the corresponding projections. *20,K3,CO3*

OR

b) Draw the projections of a cone with a base diameter of 40 mm and an axis length of 50 mm, touching the H.P on a point of its base circle. Its axis is inclined at 30° to the H.P. and parallel to the V.P. *20,K3,CO3*

4. a) Draw the sectional top view of a hexagonal pyramid with a base side of 25 mm and a height of 55 mm, resting with its base on the H.P., one of its base edges perpendicular to the V.P. It is cut by a plane inclined at 30° to the H.P. The cutting plane meets the axis at a point 20 mm from the vertex. Also, sketch the true shape of the section. *20,K3,CO4*

OR

b) A cylinder with a diameter of 40 mm and height of 50 mm is resting with a point of is base on HP. It is cut by a plane perpendicular to V.P. and inclined at 30° to H.P. The plane meets the axis at a point 30 mm from the base. Develop the lateral surface of the lower portion of the truncated cylinder. *20,K3,CO4*

5. a) A cylinder of 50 mm diameter and 60 mm axis length is resting on the HP with one of its bases. A section plane perpendicular to the VP and inclined at an angle of 45° to the HP cuts the cylinder and passes through a point on the top end of the cylinder. Obtain the isometric projection of the truncated cylinder. *20,K3,CO5*

OR

b) A Cube of side 35 mm rests on the ground plane with one of its vertical face is parallel and 10mm behind PP. The station point is 55 mm above the GP and 70 mm in front of the PP, lies in a central plane of 40mm to the right of the axis of the cube. Draw the perspective projection of the cube. *20,K3,CO5*