B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2025

Second Semester

Civil Engineering

(Common to All Branches)

24ESGE101 - ENGINEERING GRAPHICS

Regulations - 2024

Duration: 3 Hours   Max. Marks: 100

PART - A (5 × 17 = 85 Marks)

Answer ALL Questions

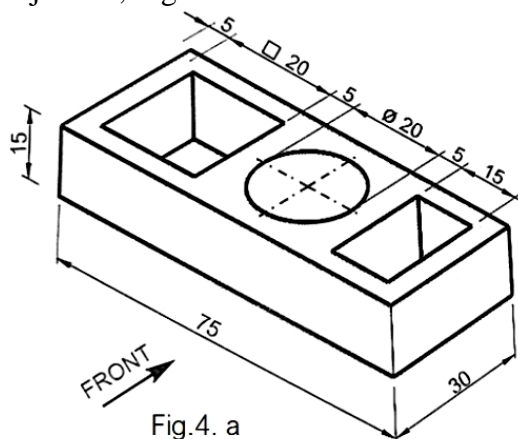|			Marks	K – Level	CO
1.	a)	Construct an ellipse with the distance from the focus to the directrix as 50 mm and an eccentricity of 2/3. Additionally, construct a normal and a tangent to the curve at any point on the directrix.	17	K3	CO1
		OR			
	b)	A coin with a diameter of 40 mm rolls over a horizontal table without slipping. A point on the circumference of the coin is initially in contact with the table surface, and again after one complete revolution. Illustrate the path traced by the point.	17	K3	CO1
2.	a)	One end P of a line PQ, 80 mm long, is 10 mm above the H.P. and 15 mm in front of the V.P. The line is inclined at 40° to the H.P. and 35° with V.P. Draw the projections of the Straight Line.	17	K3	CO2
		OR			
	b)	A pentagonal plate of side 30 mm is placed with one side on HP and the surface is inclined at 50° to HP and perpendicular to VP. Draw (i) simple position of plane (ii) final projections of plane.	17	K3	CO2
3.	a)	A hexagonal prism, the base side of 30 mm and a height of 80 mm, is resting on its base on the H.P., such that one of the edges is perpendicular to the V.P. Its axis is inclined at 30° to the H.P. and parallel to the V.P. Utilize the rotating object method to sketch the projections of the hexagonal prism.	17	K3	CO3
		OR			
	b)	A cone with a base diameter of 40 mm and an axis of 60 mm long touches the H.P. on a point of its base circle. The axis is parallel to V.P. and inclined at 30° to H.P. Apply the rotating object method and draw its projections.	17	K3	CO3
4.	a)	Apply visualization principles to sketch the front, top, and side right side view of the given isometric projection, Fig. 4. a.	17	K3	CO4

Fig.4. a

All the Dimensions are in mm

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create   **13731**

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OR

b) Apply visualization principles to sketch the front view, top view, and left side view of the given Fig. 4 b.   *17 K3 CO4*

Fig.4 b
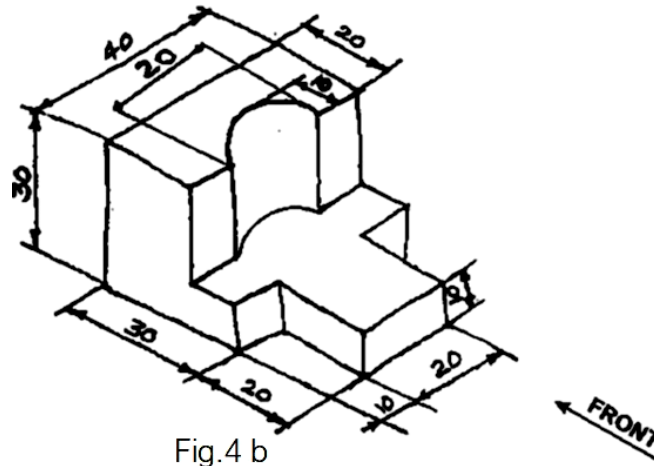
5. a) A pentagonal pyramid of base 30 mm and height 80 mm stands vertically with one base edge parallel to the V.P. It is cut by a plane inclined at 45° to the H.P., bisecting the axis. Develop the lateral surface of the pentagonal pyramid.   *17 K3 CO5*

OR

b) Develop the lateral surface of a truncated cone with a base diameter of 50 mm and a height of 70 mm, resting on its base on H.P. A section plane, perpendicular to the V.P. and inclined at 45° to the H.P., bisects the axis of the cone.   *17 K3 CO5*

PART - B (1 × 15 = 15 Marks)

6. a) A Pentagonal prism, side of base 25 mm and height 50 mm rests on HP and one of the edge of its base is parallel to VP and nearer to it. A section plane perpendicular to VP and inclined at 50° to HP bisects the axis of the prism. Draw (i) simple position of solid and (ii) isometric projection of the truncated prism, showing the cut surface.   *15 K3 CO6*

OR

b) A Hexagonal pyramid of base side 30 mm and axis length 65 mm is resting on HP with two of its base side perpendicular to VP. It is cut by a plane inclined at 30° to HP and perpendicular to VP and passes through a point at a distance 30 mm from the apex. Draw (i) simple position of solid and (ii) isometric view of the truncated portion of the solid.   *15 K3 CO6*

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create   **13731**