Reg. No.															

Question Paper Code	14281

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2025

First Semester

Civil Engineering

(Common to ALL Branches)

20ESGE101 - ENGINEERING GRAPHICS

Regulations - 2020

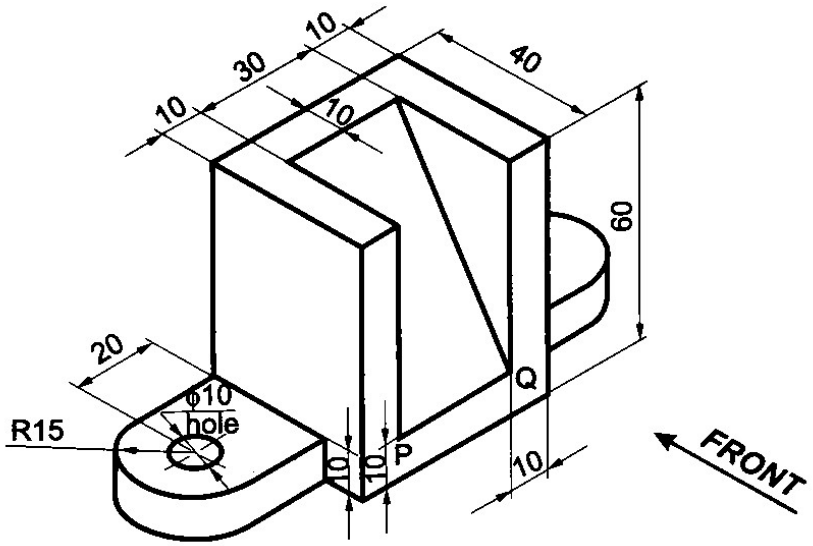
(Use of *A3 sheets* are permitted)

Duration: 3 Hours | Max. Marks: 100

PART - A (5 × 20 = 100 Marks)

Answer ALL Questions

			Marks	K – Level	CO
1.	a)	Construct the profile of a parabolic arch for a bridge. The parabola to be drawn should have an eccentricity of 1, with the perpendicular distance between its focus and directrix specified as 50 mm. Based on these parameters; accurately generate the parabolic curve suitable for bridge design.	20	K3	CO1
		OR			
	b)	With the aid of free hand sketching, draw the front, top and side views of the below component:	20	K3	CO1



2.	a)	A straight line AB measures 60 mm in length. Its end A is situated on the HP and 20 mm in front of VP. The line is inclined at 45° to the HP and 30° to the VP. Draw the front view and top view projections of the line.	20	K3	CO2
		OR			
	b)	A regular pentagon with 30 mm side length rests on the horizontal plane on one of its sides. The surface of the pentagon is inclined at 45° to the HP. Draw its projections, assuming that the side resting on the HP makes an angle of 30° with the vertical plane.	20	K3	CO2
3.	a)	A hexagonal prism of base side 30 mm and axis length 60 mm rests on HP with one of its base edges, its axis inclined at 60° to the HP and parallel to the VP. Draw its top and front views.	20	K3	CO3
		OR			
	b)	A pentagonal pyramid of base side 25 mm has an altitude of 45 mm. The pyramid rests on the HP on one of its base sides such that the triangular face containing that side is perpendicular to both the HP and the VP. Draw its projections.	20	K3	CO3

4.	a)	A square pyramid of base side 25 mm and altitude 40 mm rests on the HP on its base with the base edges equally inclined to the VP. It is cut by a plane perpendicular to the VP and inclined at 30° to the HP meeting the axis at 20 mm above the HP. Draw the sectional top view and the true shape of the section.	*20*	*K3*	*CO4*
		OR			
	b)	A right circular cone of base diameter 60 mm and height 70 mm is resting on its base on the ground. It is cut by a plane perpendicular to the VP and inclined at 30° to the HP. The cutting plane bisects the axis of the cone. Draw the development of the lateral surface of the truncated cone.	*20*	*K3*	*CO4*
5.	a)	Draw the isometric projections of a cylinder of diameter 45mm and height 60 mm when it is resting on one of its base on the HP. It is cut by a plane perpendicular to the VP and inclined at 45° to the HP. The plane passes through a point on the axis located at 15 mm from the top.	*20*	*K3*	*CO5*
		OR			
	b)	A square prism of base 25 × 25 mm and height 40 mm rests on the Ground Plane on one of its ends with a rectangular face receding away from the Picture Plane towards right making 60° with PP. The corner nearest to the PP is 40 mm to the left of the station point and 20 mm behind the PP. The station point is 60 mm above the GP and 50 mm in front of the PP. Draw the perspective view of the prism by the visual ray method. Use the top view and front view.	*20*	*K3*	*CO5*