

Second Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025

Introduction of Civil Engineering

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.

2. M : Marks , L: Bloom's level , C: Course outcomes.

Module – 1			M	L	C
Q.1	a.	Explain the importance of the following branches of civil engineering i) Structural engineering ii) Geotechnical engineering.	10	L2	CO1
	b.	Write a short note on the following : i) Reinforced concrete ii) Pre-stressed concrete iii) Foundation iv) Lintel v) Slab.	10	L2	CO1
OR					
Q.2	a.	Explain the scope of the following : i) Surveying ii) Hydraulic of water resources	10	L2	CO1
	b.	Write brief note following : i) Bricks ii) Plain concrete iii) mortar iv) Plinth v) Column.	10	L3	CO1
Module – 2					
Q.3	a.	Briefly explain the following : i) Smart city concept ii) Energy efficient building.	10	L2	CO2
	b.	List and explain sustainable development goals.	10	L2	CO2
OR					
Q.4	a.	Elaborate on : i) Clean city ii) Identification of land fill sites.	10	L2	CO2
	b.	Write a short notes on : i) Water supply system ii) Smart Building.	10	L2	CO2
Module – 3					
Q.5	a.	Explain the concept of idealization.	6	L2	CO3
	b.	State and prove Verignon's theorem.	6	L3	CO3
	c.	Determine the magnitude, direction and position of resultant with respect to point 'D' as shown in Fig Q5(c).	8	L3	CO3

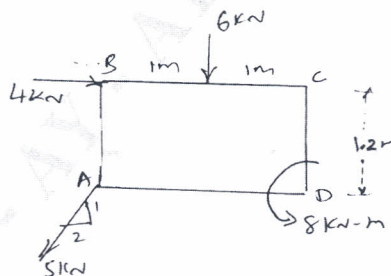


Fig Q5(c)

OR

Q.6	a.	Explain the principle transmissibility of forces.	4	L2	CO3
	b.	Classify the system of forces.	8	L2	CO3
	c.	Two spheres each of radius 100 mm and weight 5kN is in a rectangular box as shown in figure. Calculate the reaction at all points of contacts of shown in Fig Q6(c).	8	L3	CO3

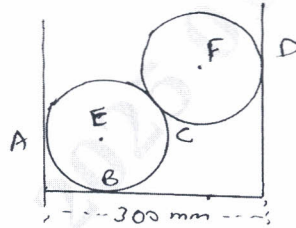


Fig Q6(c)

Module – 4

Q.7	a.	Define : i) Centroid ii) Centre and gravity.	4	L1	CO4
	b.	Determine centroid of a triangle from first principles.	8	L3	CO4
	c.	Determine the centroid of the section shown in Fig Q7(c).	8	L3	CO4

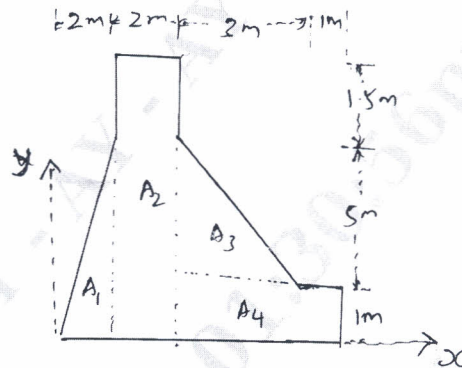


Fig Q7(c)

OR

Q.8	a.	Define : i) Axis of reference ii) Axis of symmetry.	4	L1	CO4
	b.	Determine centroid of quarter of a circle from first principles.	8	L3	CO4
	c.	Determine centroid of the section shown in Fig Q8(c)	8	L3	CO4

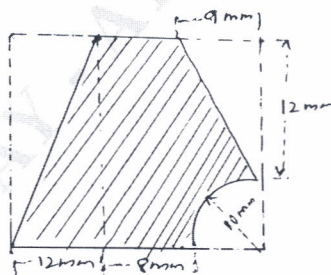
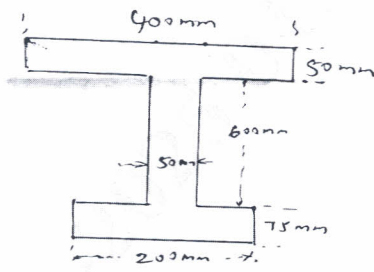
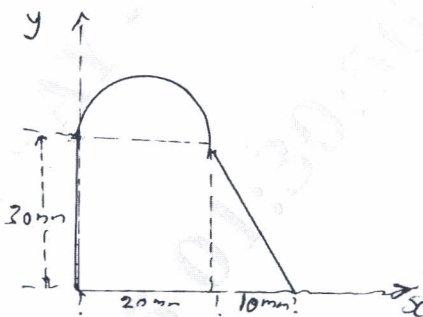


Fig Q8(c)

Module – 5					
Q.9	a.	Define : i) Moment of inertia ii) Section modulus.	4	L1	CO5
	b.	Determine moment of inertia of triangle about its base from first principle.	8	L3	CO5
	c.	Find the moment of inertia algorithm horizontal axis passing through the centroid of the section shown in Fig Q9(c)	8	L3	CO5
 Fig Q9(c)					
OR					
Q.10	a.	State parallel axis and perpendicular axis theorem.	4	L1	CO5
	b.	Determine moment of inertia of a semi circle about its base from first principle.	8	L3	CO5
	c.	Find the moment of inertia about the horizontal axis for the figure shown in Fig Q10(c).	8	L3	CO5
 Fig Q10(c)					
