



Second Semester B.E./B.Tech. Degree Examination, June/July 2026 Introduction to 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 i) Structural Engineering ii) Environmental engineering	10	L2	CO1
	b.	List the qualities of Good Building stone.	10	L1	CO1
OR					
Q.2	a.	Explain : i) Transportation Engineering ii) Geotechnical Engineering	10	L2	CO1
	b.	What is RCC? List the advantages and uses of RCC.	10	L1	CO1
Module – 2					
Q.3	a.	List the sustainable development goals. Explain briefly any two them.	10	L1	CO2
	b.	Write a short note on : i) Urban Air Pollution Management ii) Clean City Concept.	10	L1	CO2
OR					
Q.4	a.	Explain with few examples the smart city concept.	10	L2	CO2
	b.	Write a short note on : i) Smart Buildings ii) Solid Waste Management.	10	L1	CO2
Module – 3					
Q.5	a.	State and derive the parallelogram law of forces.	10	L2	CO3
	b.	Determine the magnitude, direction of resultant force for the system shown. Locate the resultant force with respect to point D for Fig Q5(b)	10	L3	CO3

Fig Q5(b)

OR

Q.6	a.	Explain the basic concept of idealization.	5	L1	CO3
	b.	State and prove Lami's Theorem.	5	L2	CO3
	c.	A light string ABCDE is fixed to weight w_1 and w_2 at B and C and a weight 100N at free end E. Find the tensions in the string w_1 and w_2 . [Fig Q6(c)].	10	L3	CO3

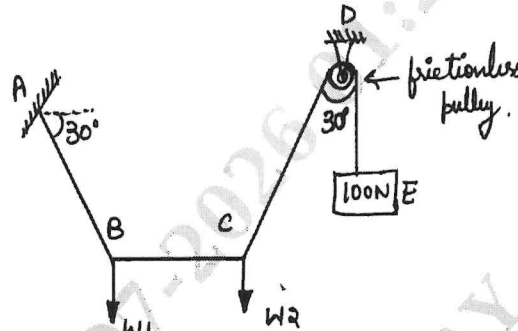


Fig Q6(c)

Module – 4

Q.7	a.	Find the centroid of a triangle using first principle.	10	L3	CO4
	b.	Find the centroid for the given shaded area. Refer Fig Q7(b).	10	L3	CO4

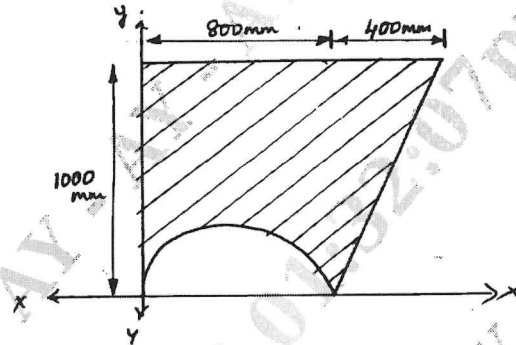


Fig Q7(b)

OR

Q.8	a.	Find centroid of semicircle using first principle.	10	L3	CO4
	b.	Determine the centroid of the shaded area shown in Fig Q8(b).	10	L3	CO4

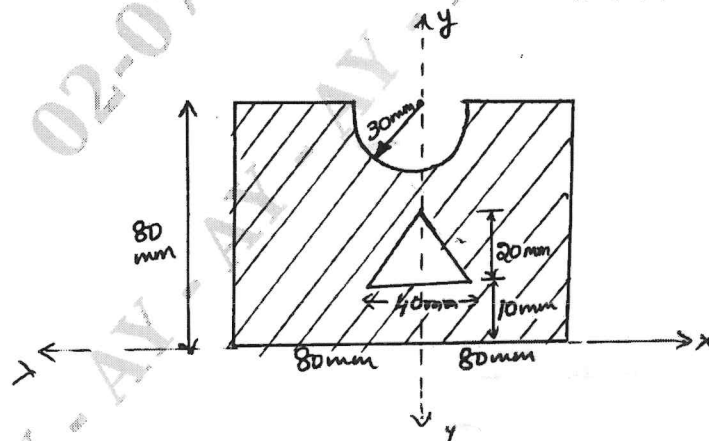


Fig Q8(b)

Module – 5

Q.9	a.	Derive the moment of inertia of a quarter circle using first principle.	10	L3	CO5
	b.	Find the moment of inertia along horizontal and vertical axis passing through the centroid of a section shown in Fig Q9(b).	10	L3	CO5
Fig Q9(b)					
OR					
Q.10	a.	Derive an expression for moment of Inertia of a triangle using first principle.	10	L2	CO5
	b.	Find moment of inertia for the area shown in Fig Q10(b) about base AB and centroidal axis parallel to AB.	10	L3	CO5
Fig Q10(b)					
