

CBCS SCHEME



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BESCK204A/BESCKA204

Second Semester B.E./B.Tech. Degree Examination, June/July 2024

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 the scope of following branches of Civil Engineering i) Geotechnical Engineering ii) Irrigation engineering and water resources	10	L1	CO1
	b.	Explain any four tests on bricks.	10	L1	CO1
OR					
Q.2	a.	Explain the following : i) Reinforced Cement Concrete (RCC) ii) Construction chemicals iii) Structural Steel	10	L1	CO1
	b.	Explain the functions of the following structural elements of a building i) Beam ii) Column iii) Foundation.	10	L1	CO1
Module – 2					
Q.3	a.	Explain the advantages and disadvantages of Infrastructural development of a nation.	10	L1	CO2
	b.	Explain Sustainable development. What are the goals of sustainable development?	10	L1	CO2
OR					
Q.4	a.	Explain the concept of i) Smart city ii) Clean city.	10	L1	CO2
	b.	Explain management of i) Urban Air Pollution ii) Solid waste.	10	L1	CO2
Module – 3					
Q.5	a.	Explain classification of force system with neat sketches.	10	L2	CO3
	b.	Find the resultant, magnitude, direction and distance from point A of the force system shown in Fig Q5(b).	10	L3	CO3

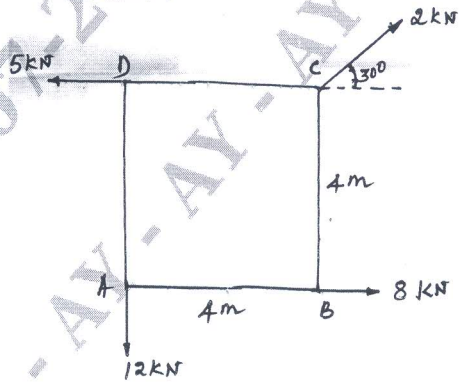


Fig Q5(b)

OR			
Q.6	a.	State and prove Varignon's theorem.	10 L3 CO3
	b.	Find the forces in all the wires (AB, BC and CD) and the load W_1 to keep the system in equilibrium. Take $W_2 = 1000\text{N}$, (Refer Q6(b)).	10 L3 CO3

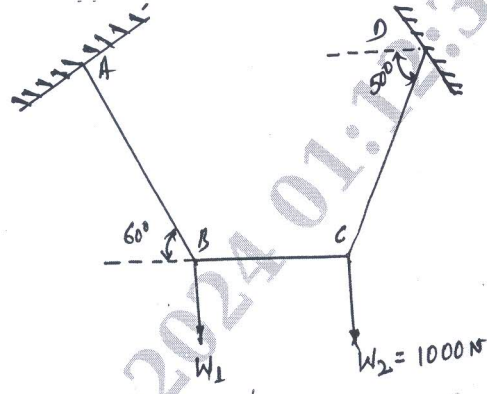


Fig Q6(b)

Module - 4			
Q.7	a.	Explain the following : i) Centroid ii) Center of Gravity iii) Lamina iv) Centroidal Axis v) Axis of Symmetry.	10 L1 CO4
	b.	Determine the centroid of I/O, Fig Q7(b)	10 L2 CO4

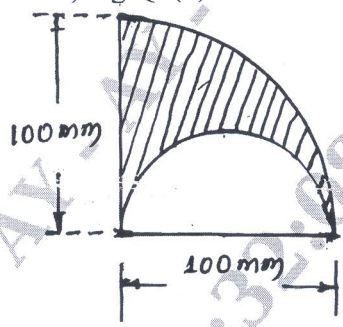


Fig Q7(b)

OR			
Q.8	a.	Determine the centroid of a Semicircle of radius 'r' from the first principle.	10 L1 CO4
	b.	Locate the centroid of the lamina shown in Fig Q8(b)	10 L2 CO4

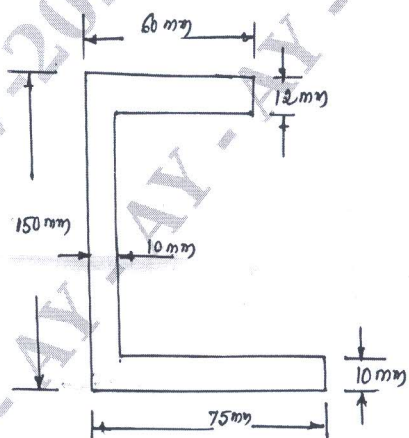


Fig Q8(b)

Module – 5

Q.9	a. State and prove parallel axes theorem.	10	L2	CO5
	b. Determine the moment of inertia about horizontal centroidal axis for the Fig Q9(b).	10	L2	CO5

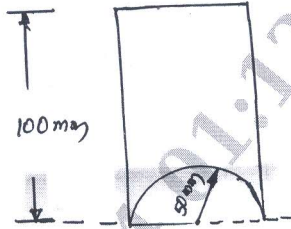


Fig Q9(b)

OR

Q.10	a. Derive an expression for moment of inertia of a semicircle.	10	L1	CO5
	b. Determine the moment of inertia of Fig Q10(b) as shown below. Determine radius of gyration.	10	L2	CO5

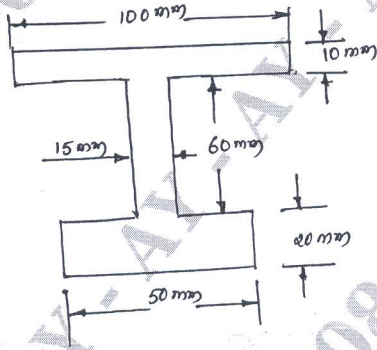


Fig Q10(b)
