

# CBCS SCHEME



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BESCK204A/BESCKA204

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

## Introduction to Civil Engineering

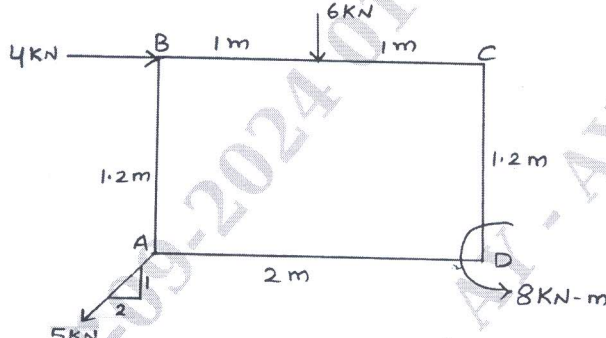
Time: 3 hrs.

Max. Marks: 100

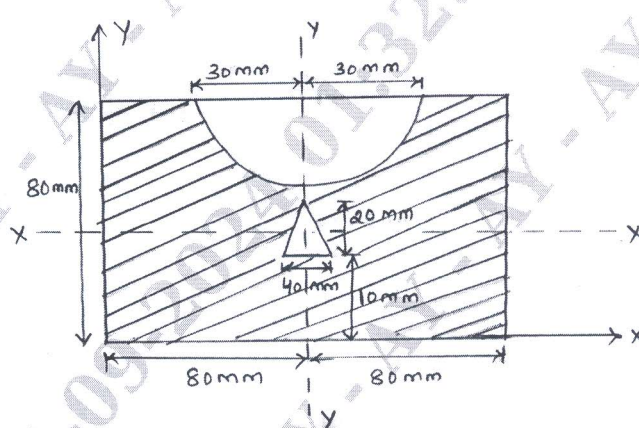
*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.  
2. M : Marks , L: Bloom's level , C: Course outcomes.*

Module – 1		M	L	C		
Q.1	a.	Explain briefly the scope of following branches of Civil Engineering: i) Geotechnical Engineering ii) Surveying iii) Structural Engineering		10	L2	CO1
	b.	List the qualities of good bricks. Also explain classes of bricks.		10	L2	CO1
<b>OR</b>						
Q.2	a.	Explain the following structural elements in a building: i) Lintel      ii) Staircase      iii) Foundation		10	L2	CO1
	b.	What is RCC? Explain its advantages and disadvantages.		10	L2	CO1
<b>Module – 2</b>						
Q.3	a.	Explain concept of i) Smart city      ii) Safe city		10	L2	CO2
	b.	Explain : i) Water supply and sanitary system ii) Identification of landfill sites.		10	L2	CO2
<b>OR</b>						
Q.4	a.	Write a note on energy efficiency buildings.		10	L1	CO2
	b.	Explain : i) Smart buildings      ii) Sound control in buildings.		10	L2	CO2
<b>Module – 3</b>						
Q.5	a.	Explain the classifications of force systems with neat sketches.		10	L2	CO3
	b.	Fig.Q.5(b) shows four coplanar forces acting at a point one of the force is unknown and its magnitude is represented by "F". The resultant 500kN acts along X-axis. Determine the force "F" and its inclination "θ" with respect to x-axis.		10	L3	CO3
		<p style="text-align: center;">Fig.Q.5(b)</p>				
1 of 3						

OR

Q.6	<p>a. State and prove the following:                  i) Lami's theorem    ii) Parallelogram law of forces.</p>	10	L2	CO3
	<p>b. Determine the magnitude, direction of the resultant force for the force system shown in Fig.Q.6(b). Locate the resultant force with respect to point D.</p>  <p style="text-align: center;">Fig.Q.6(b)</p>	10	L3	CO3

Module - 4

Q.7	<p>a. Derive an expression for centroid of a triangle by using the method of integration.</p>	7	L2	CO4
	<p>b. Define: i) Centroid    ii) Centre of gravity</p>	3	L1	CO4
	<p>c. Locate the centroid of shaded area shown in Fig.Q.7(c).</p>  <p style="text-align: center;">Fig.Q.7(c)</p>	10	L3	CO4

OR

Q.8	<p>a. Derive an expression for centroid of a quarter circle by using method of integration.</p>	7	L2	CO4
	<p>b. Define: i) Centroidal axis    ii) Axis of reference</p>	3	L1	CO4

c Determine the centroid of shaded area shown in Fig.Q.8(c).

10 L3 CO4

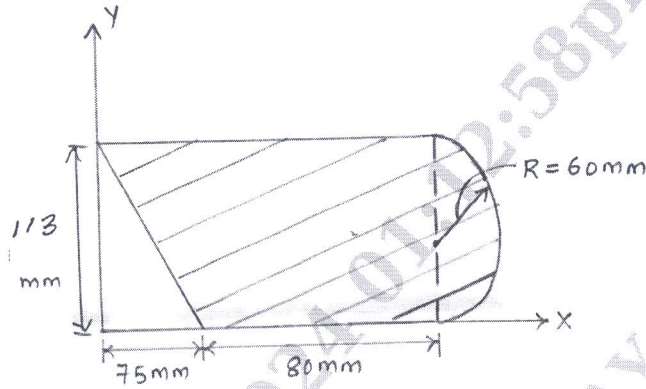


Fig.Q.8(c)

Module - 5

Q.9 a. Derive moment of inertia of a rectangle from first principle.

7 L2 CO5

b. Determine the moment of inertia about horizontal centroidal axis for the lamina shown in Fig.Q.9(b). Also find radius of gyration about the same axis.

13 L3 CO5

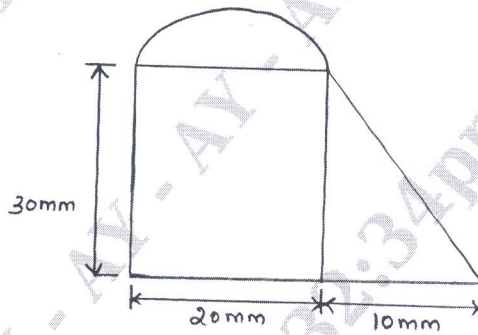


Fig.Q.9(b)

OR

Q.10 a. State and prove parallel axis theorem.

7 L2 CO5

b. Determine the moment of inertia about horizontal centroidal axis for the lamina shown in Fig.Q.10(b). Also find radius of gyration about the same axis.

13 L3 CO5

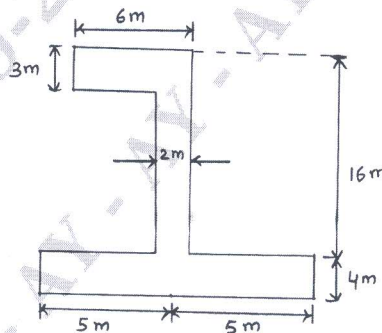


Fig.Q.10(b)

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