

ADMISSION NUMBER

School of Engineering B.TECH Civil Engineering

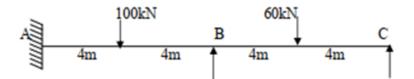
Mid Term Examination - Nov 2023

Duration: 90 Minutes Max Marks: 50

Sem V - G1UA504T - Advanced Structural Analysis

General Instructions Answer to the specific question asked Draw neat, labelled diagrams wherever necessary Approved data hand books are allowed subject to verification by the Invigilator

1)	Describe the role of the yield moment in the plastic analysis of beams and portals.	K2 (2)
2)	Define "moment-curvature relationship" and its significance in plastic analysis.	K1 (3)
3)	Why is it important to identify plastic hinges in the analysis of continuous beams and portals?	K2 (4)
4)	Explain the Flexibility matrix method	K2 (6)
5)	Calculate the plastic moment of resistance for a concrete T-section beam given its dimensions and material properties.	K3 (6)
6)	Determine the value of shape factor for a diamond section .	K3 (9)
7)	Investigate the behavior of a continuous beam with multiple plastic hinges under various loading conditions, considering the redistribution of moments.	K4 (8)
8)	Evaluate the collapse load for a propped cantilever having W KN load at midspan .	K4 (12)
OR		
	Analyse the continuous beam shown in figure by stiffness method.	K4 (12)



Support B sinks by 300/EI units and support C sinks by 200/EI units