Name. _____ **Student Admn. No.: _____**	**Printed Pages:02**

School of _____

Backlog Examination, June 2023

[Programme:] [Semester:] [Batch:]

Course Title: Advanced Structural Analysis **Course Code:** BTCE3014	**Max Marks: 100** **Time: 3 Hrs.**

Instructions:

1. *All questions are compulsory.*
2. *Assume missing data suitably, if any.*

		K Level	COs	Marks
	SECTION-A (15 Marks) 5 Marks each			
1.	Explain the concept of stiffness and its significance in the analysis of structures	K2	CO1	5
2.	Define shape factor, load factor, Plastic section modulus. Derive shape factor for an I section.	K1	CO2	5
3.	Explain the steps used in concept of flexibility matrix method.	K2	CO3	5
	SECTION-B (40 Marks) 10 Marks each			
4.	Derive the value of stiffness, when far end is fixed.	K1	CO1	10
5.	Define moment carrying capacity of steel section with the help of diagram.	K3	CO2	10
6.	Analyse the beam shown in fig 2, using flexibility matrix method	K4	CO3	10
7.	Analyse the beam shown in fig 1, using stiffness matrix method. Or Analyse the beam shown in fig 3, using stiffness matrix method.	K4	CO4	10
	SECTION-C (45 Marks) 15 Marks each			
8.	Explain in brief about the distribution factor and carryover factor in moment distribution method.	K5	CO1	15
9.	Explain in detail about the significance and application of stiffness matrix method.	K5	CO4	15
10	Discuss the steps of analysis followed in substitute frame method. Or Discuss the steps of analysis for a cantilever method of approximate analysis.	K5	CO5	15

Note: Figure 1, 2 and 3 on the back side.

PTO

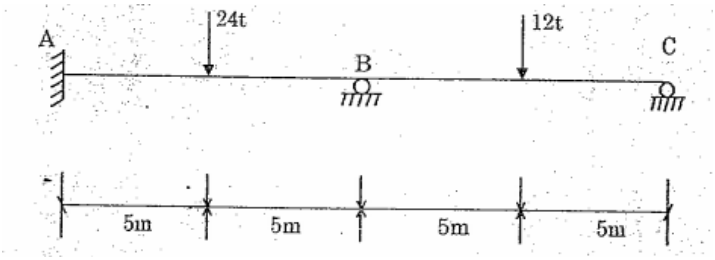

Fig. 1

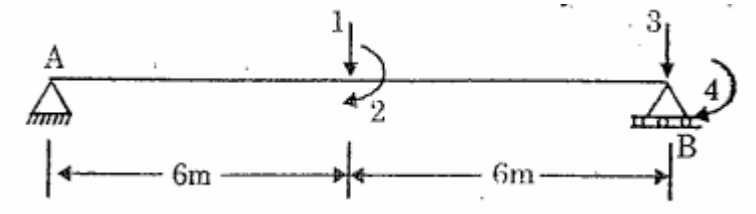

Fig. 2

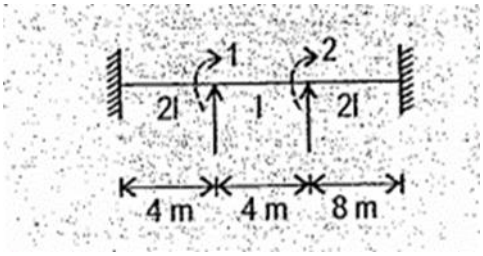

Fig 3