

THE KAVERY ENGINEERING COLLEGE
(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV /DEC 2024

Fifth Semester

Civil Engineering

CE3502 – Structural Analysis I

Regulations - 2021

Duration : 3 Hrs

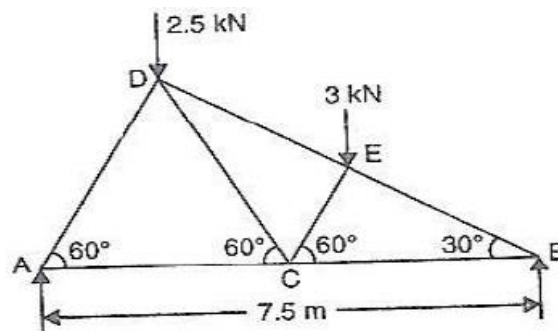
Maximum : 100 Marks

PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)

Q.No	Questions	BLT	CO	Marks
1.	Compare deficient and redundant frame.	UN	1	2
2.	What is meant by tension coefficient?	RE	1	2
3.	Write down the general slope deflection equations and state what each term represents.	RE	2	2
4.	Recall the assumptions made in slope-deflection method?	RE	2	2
5.	Define carry over moment?	UN	3	2
6.	What is sway correction?	RE	3	2
7.	What is meant by compatibility condition?	RE	4	2
8.	What are the different methods of analysis of indeterminate structures?	RE	4	2
9.	Define relative stiffness of a member?	UN	5	2
10.	Explain the steps involved in stiffness matrix method of analysis.	UN	5	2

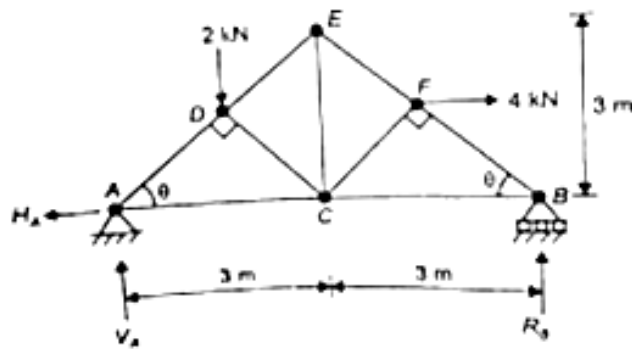
PART – B (ANSWER ALL QUESTIONS) (Marks 5*13 = 65)

Q.No	Questions	BLT	CO	Marks
11. a	Analyze the truss by method of Joints	AN	1	13

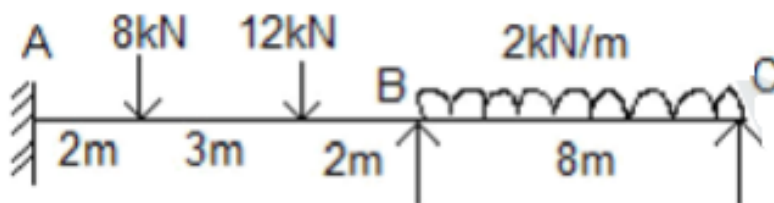


Or

- b Find the forces in the EF, CF, CB members of the truss shown in fig by method of section. RE 1 13

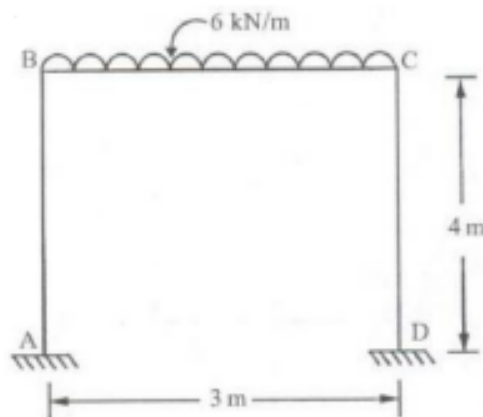


12. a Find the bending moments at A, and C by slope deflection method for the two-span continuous beam ABC. EI is constant. RE 2 13



Or

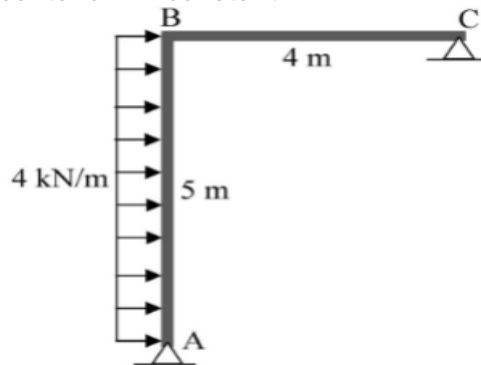
- b Analyse the frame by moment distribution method and draw bending moment diagram AP 2 13



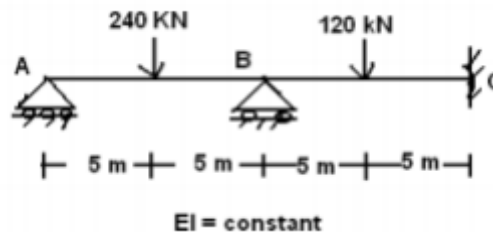
13. a A Continuous beam ABCD fixed at A and D and continuous over supports B and C. The span AB=5m carries a central concentrated load of 10kN. The span BC = 4m carries a uniformly distributed load of 4 kN/m over the entire span of BC. The span CD = 6m carries a non-central concentrated load of 8 kN acting at a distance of 2m from the end D. Draw bending moment diagram using moment distribution method and tabulate the results. AP 3 13

Or

- b Find the bending moment for the segment given below, by moment distribution method take $EI = \text{constant}$ RE 3 13

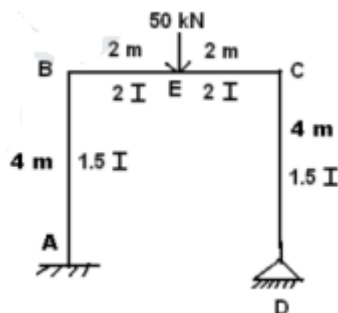


14. a Analyse the continuous beam ABC shown in Fig below by flexibility matrix method and draw the bending moment diagram. AN 4 13

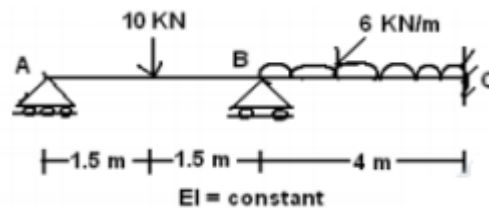


Or

- b Solve the portal frame ABCD shown in Fig below by flexibility matrix method and sketch the bending moment diagram. CR 4 13

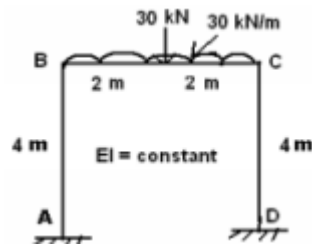


15. a Examine the continuous beam ABC shown in Fig below by stiffness method and also draw the shear force diagram. CR 5 13



Or

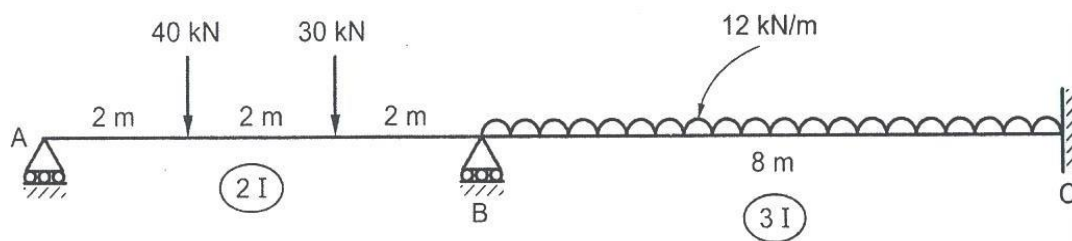
- b Analyse the portal frame ABCD shown in Fig below by stiffness method EV 5 13
and also sketch the bending moment diagram.



PART - C (Marks 1*15 = 15)

Q.No	Questions	BLT	CO	Marks
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16. a Examine the moment of the continuous beam shown in Fig below by flexibility method. AN 4 15



Or

- b Analyse the frame by moment distribution method and draw bending moment diagram AN 3 15

