

U.S.N.

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

June / July 2025 Semester End Main Examinations

Programme: B.E.

Semester: V

Branch: Civil Engineering

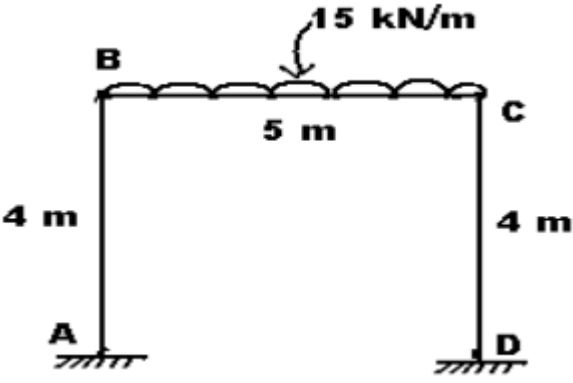
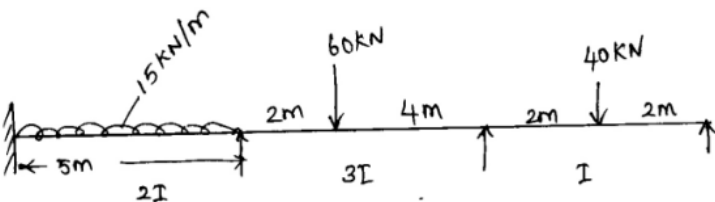
Duration: 3 hrs.

Course Code: 23CV5PCSSA / 22CV5PCSSA

Max Marks: 100

Course: Structural System Analysis

- Instructions:** 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.		UNIT - I	CO	PO	Marks
	1	Analyze the frame shown in Fig.1 using slope deflection method. Draw BMD and elastic curve.  Fig. 1	01	02	20
		OR			
	2	Analyze the continuous beam shown in Fig. 2 using slope deflection method. Draw BMD and elastic curve.  Fig. 2	01	02	20
		UNIT - II			
	3	Analyze the continuous beam shown in Fig. 3 using moment distribution method. Draw BMD and elastic curve.	01	02	20

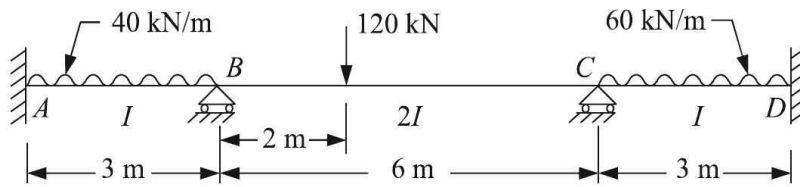


Fig. 3

OR

4

Analyze the frame shown in Fig. 4 using moment distribution method. Plot B.M.D. and elastic curve.

01

02

20

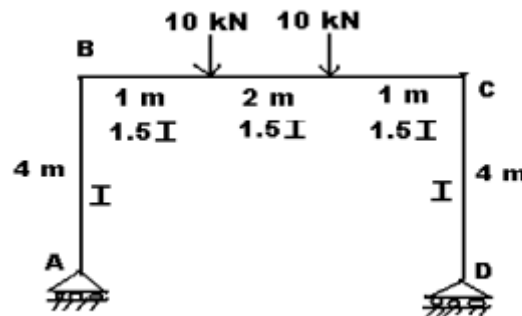


Fig. 4

UNIT - III

5

Analyze the frame shown in Fig. 5 using moment distribution method. Plot B.M.D. and elastic curve.

01

02

20

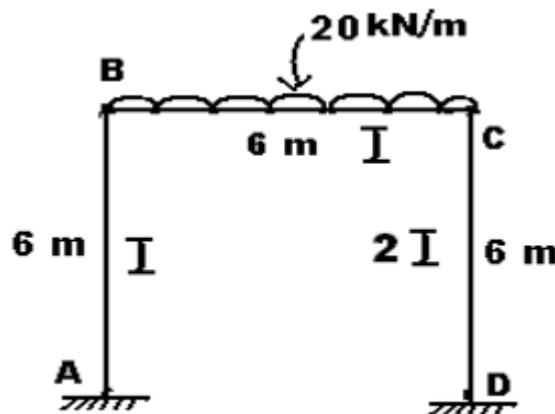


Fig. 5

OR

6

Analyze the frame shown in Fig. 6 using slope deflection method. Plot B.M.D. and elastic curve.

01

02

20

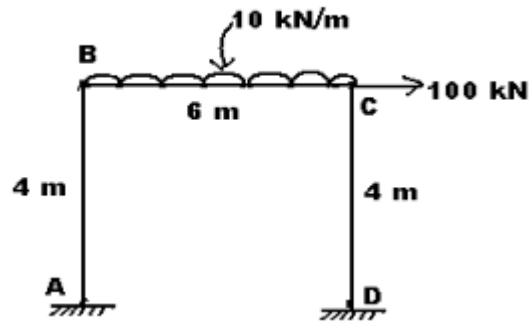


Fig. 6

UNIT - IV

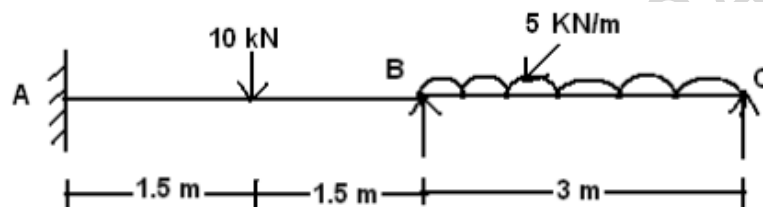
7

Analyze the continuous beam shown in Fig.7 by direct stiffness method. Plot B.M.D. and elastic curve.

02

02

20



$EI = \text{Constant}$

Fig. 7

OR

8

Analyze the frame shown in Fig. 8 by direct stiffness method. Plot B.M.D. and elastic curve.

02

02

20

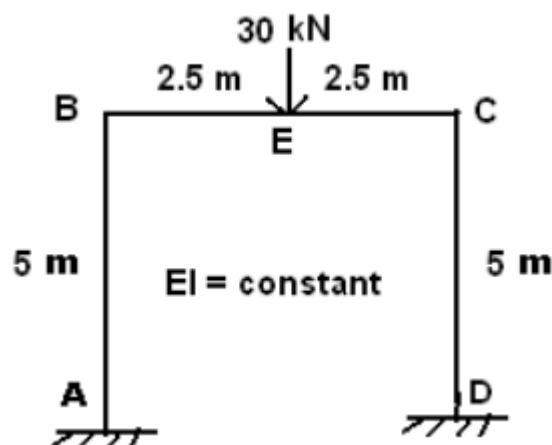


Fig. 8

UNIT - V

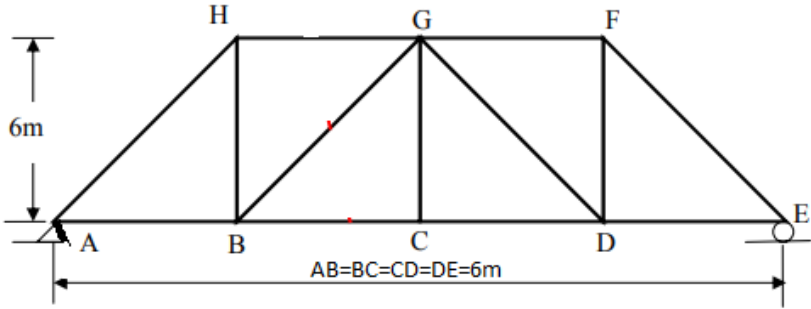
9

Two point loads of 100 kN and 200 kN spaced 3 m apart cross a girder of span 12 m from left to right with the 100 kN leading. Draw the ILD for shear force and bending moment and find the

03

02

20

			values of maximum shear force and bending moment at a section 4 m from the left hand support. Also evaluate the absolute maximum bending moment due to the given loading system.			
			OR			
	10		Construct the influence lines for force in member GB, HG and BC of the truss shown in Fig.10	03	02	20
 Fig. 9						
