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17CV52

## Fifth Semester B.E. Degree Examination, July/August 2022 Analysis of Indeterminate Structures

Time: 3 hrs.

Max. Marks: 100

**Note: Answer any FIVE full questions, choosing ONE full question from each module.**

### Module-1

- 1 Analyze the continuous beam shear in Fig Q1 by slope deflection method. Take  $EI = 15000\text{kN-m}^2$ , support 'B' sinks by 8mm, sketch BMD.

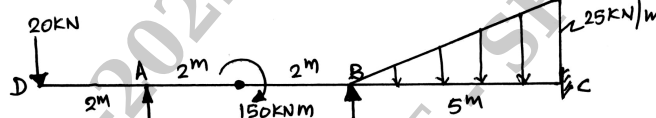


Fig Q1

(20 Marks)

OR

- 2 A portal frame is loaded as shown in Fig Q2. Analyze the frame by slope deflection method sketch BMD.

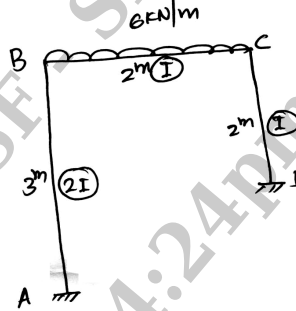


Fig Q2

(20 Marks)

### Module-2

- 3 Analyze the continuous beam shown in Fig Q3 by moment distribution method. The support 'C' sinks by 9mm. Take  $EI = 1000\text{kN-m}^2$ .

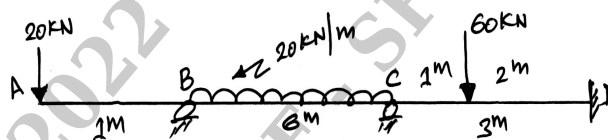


Fig Q3

(20 Marks)

OR

- 4 Analyze the Non sway rigid frame shown in Fig Q4 by moment distribution method, sketch BMD, EI is constant for all members.

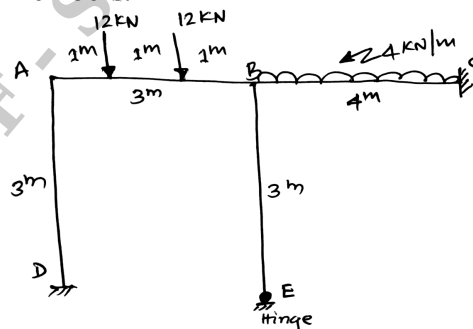


Fig Q4

(20 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.

**Module-3**

- 5 Analyse the Non sway Rigid frame shown in Fig Q5 by KANI's Rotation method, sketch BMD. Assume EI constant for all members.

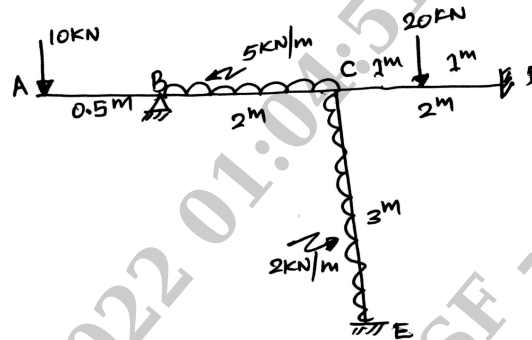


Fig Q5

(20 Marks)

OR

- 6 Analyse the frame shown in Fig Q6, by Kani's rotation method, sketch BMD.

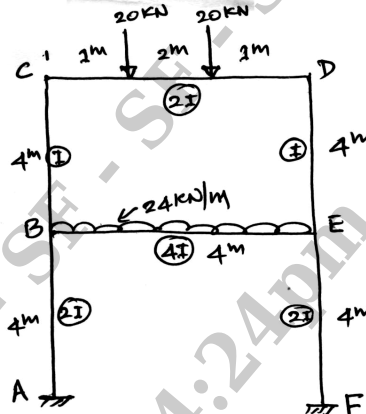


Fig Q6

(20 Marks)

**Module-4**

- 7 Using Flexibility Matrix Method, analyse the beam shown in Fig Q7. Sketch BMD, Assume EI constant.

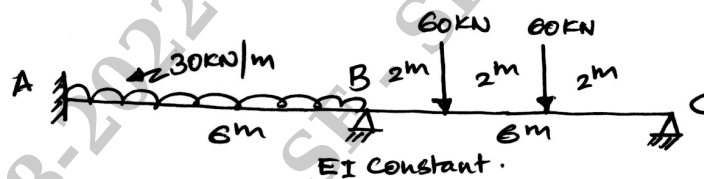


Fig Q7

(20 Marks)

OR

- 8 Analyse the continuous beam shown in Fig Q8, by using flexibility matrix method, sketch BMD.

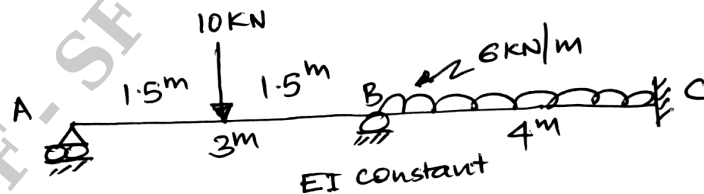


Fig Q8

(20 Marks)

**Module-5**

- 9 Analyse the continuous beam shown in Fig Q9, by stiffness matrix method. Assume EI constant sketch BMD.

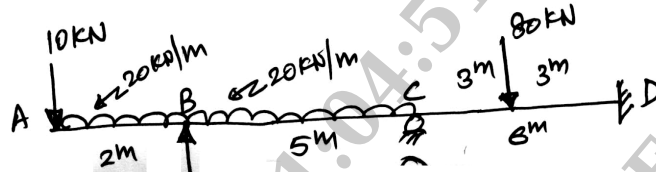


Fig Q9

(20 Marks)

OR

- 10 Analyse the rigid Non sway frame by Stiffness Matrix Method shown in Fig Q10, EI constant for all members.

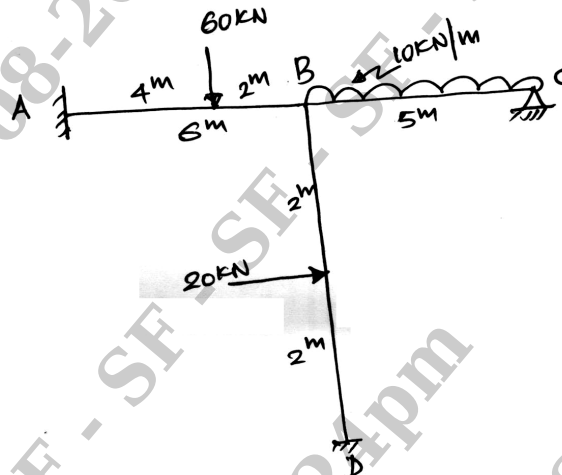


Fig Q10

(20 Marks)

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