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15CV52

Fifth Semester B.E. Degree Examination, Jan./Feb. 2021 Analysis of Indeterminate Structures

Time: 3 hrs.

Max. Marks: 80

- Note:** 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. Assume missing data suitably.

Module-1

- 1 Analyze the frame shown in Fig.Q1. Using slope deflection method. Also draw BMD and sketch the elastic curve.

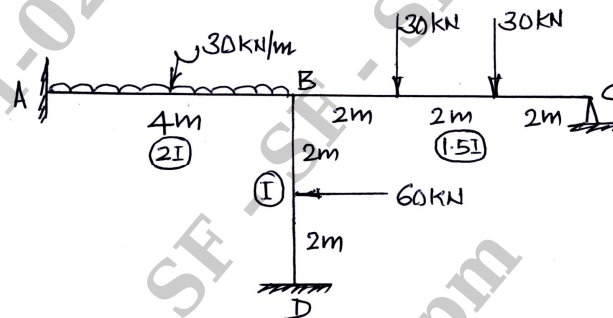


Fig.Q1

(16 Marks)

OR

- 2 Analyze the frame shown in Fig.Q2. Using slope deflection method. Also draw BMD and sketch the elastic curve.

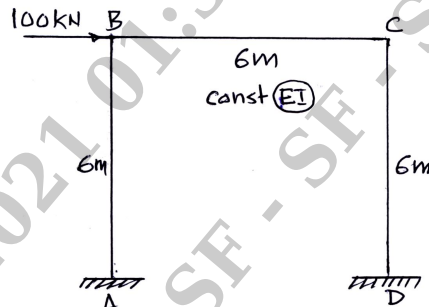


Fig.Q2

(16 Marks)

Module-2

- 3 Analyze the frame shown in Fig.Q3 by the method of Moment Distribution. Draw BMD, SFD and also sketch the elastic curve.

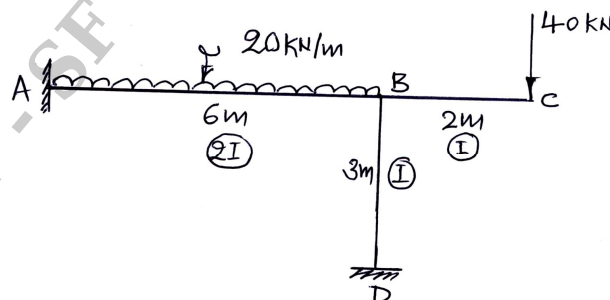


Fig.Q3

(16 Marks)

OR

- 4 Analyze the continuous beam shown in Fig.Q4 by the method of moment distribution. Draw BMD, SFD and also sketch the elastic curve.

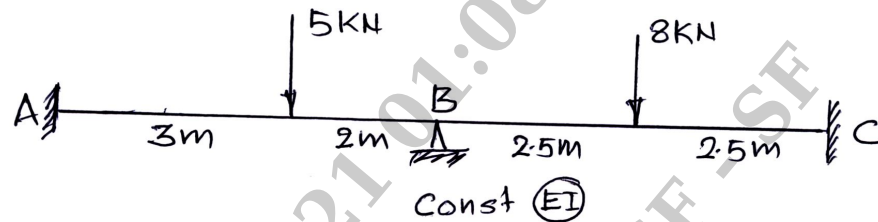


Fig.Q4

(16 Marks)

Module-3

- 5 Analyze the frame shown in Fig.Q5 by using Kani's method. Draw BMD and also sketch the elastic curve.

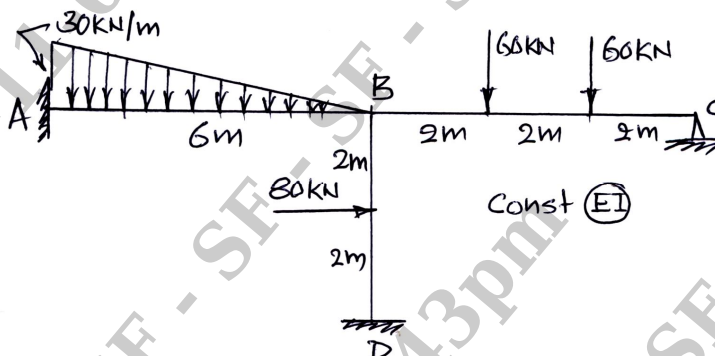


Fig.Q5

(16 Marks)

OR

- 6 Determine the support moments for the continuous beam shown in Fig.Q6 by Kani's method. The relative I values are indicated along the member in each span. E is constant. Draw BMD and elastic curve.

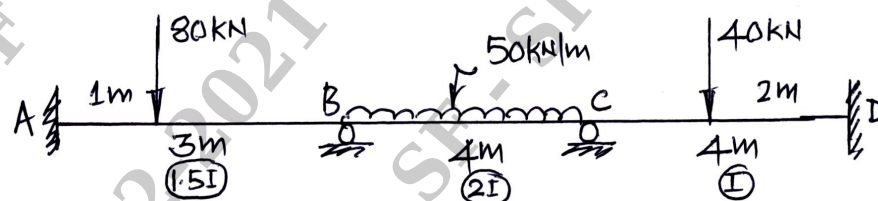


Fig.Q6

(16 Marks)

Module-4

- 7 Analyze the continuous beam shown in Fig.Q7 by flexibility matrix method. Take EI constant throughout. Draw BMD.

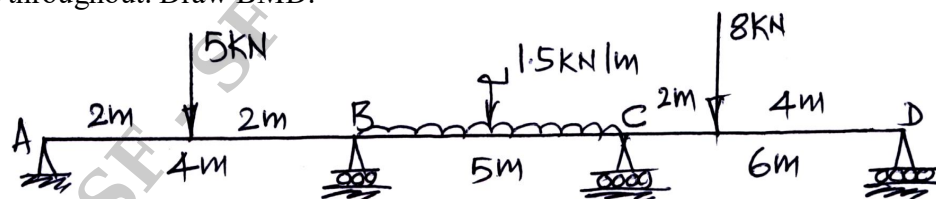
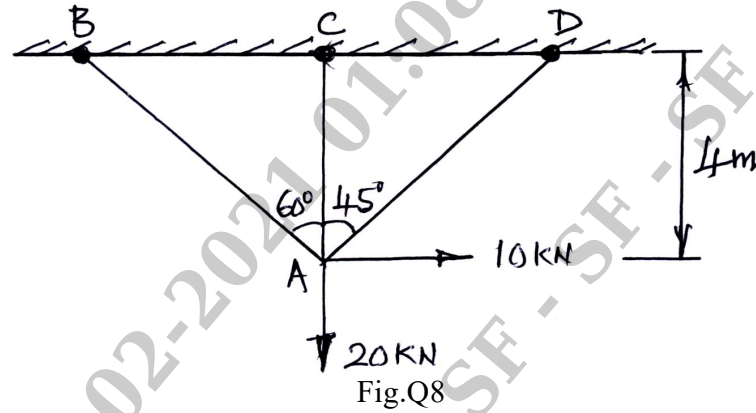


Fig.Q7

(16 Marks)

OR

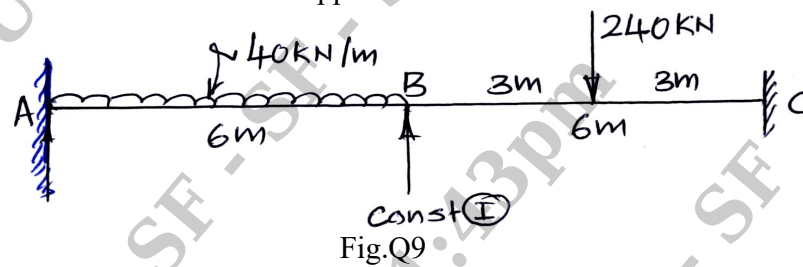
- 8 Analyze the truss shown in Fig.Q8 by flexibility matrix method. Choosing the force in member AD as redundant. Assume AE as constant for all members.



(16 Marks)

Module-5

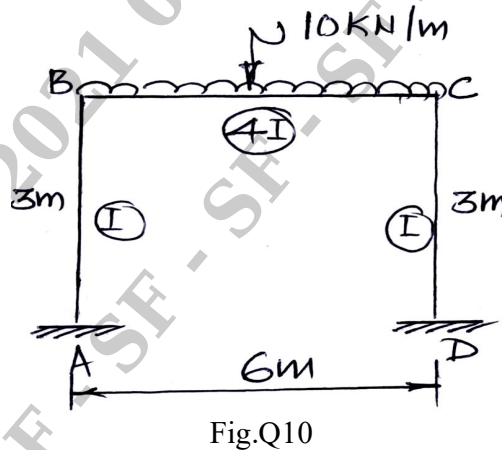
- 9 Analyze the continuous beam shown in Fig.Q9 by stiffness method, using system approach. Draw BMD, SFD and elastic curve. Supports A and C are fixed ends.



(16 Marks)

OR

- 10 Analyze the rigid jointed plane frame shown in Fig.Q10 by stiffness matrix method. Draw BMD.



(16 Marks)
