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15CV52

Fifth Semester B.E. Degree Examination, Dee.2018/.1an.2019
Analysis of Indeterminate Structures

Time: 3 hrs. Max. Marks: 80

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

Module-1

1 Analyze the continuous beam shown in Fig.Q.l by slope deflection method and draw BMD. **(16 Marks)**

SOLN

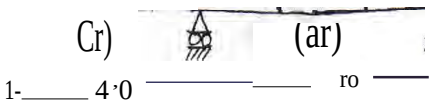
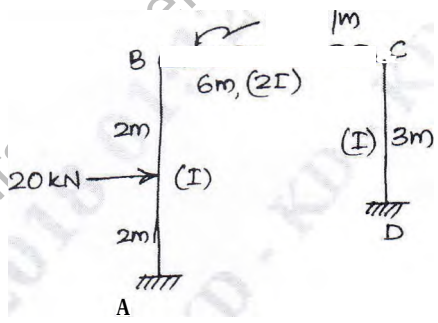


Fig.Q.1

OR

2 Analyze the rigid frame shown in Fig.Q.2 by slope deflection method and draw BMD. **(16 Marks)**



Module-2

3 Analyze and draw BMD for the continuous beam shown in Fig.Q.3 by moment distribution method if support 'B' sinks by 30mm and support 'C' sinks by 20mm.
Take EI = 24,000 **kNm²**. **(16 Marks)**

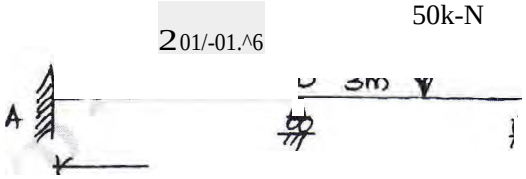


Fig.Q.3

OR

4 Analyze the rigid frame shown in Fig.Q.4 by moment distribution method and draw BMD. (16 Marks)

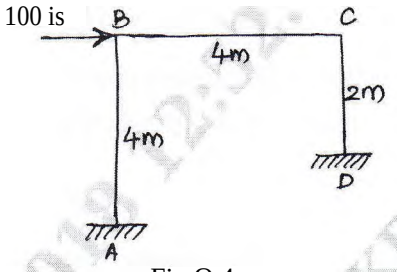


Fig.Q.4

Module_3

5 Analyze and draw BMD for the continuous beam shown in Fig.Q.5 by Kani's method, if support `B' sinks by 10mm and E = 2 x 10^5 N/mm^2, I = 1.2 x 10^{-4} m^4. (16 Marks)

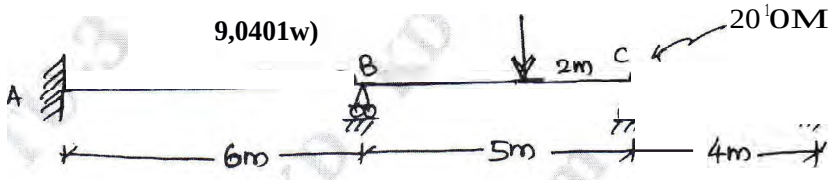


Fig.Q.5

OR

6 Analyze the rigid frame shown in Fig.Q.6 by Kani's method and draw BMD. (16 Marks)

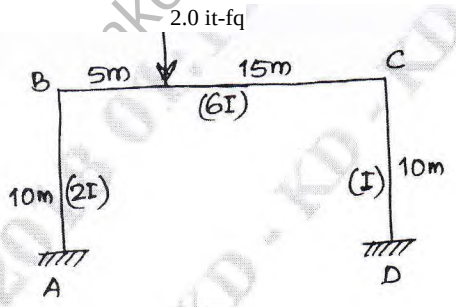


Fig.Q.6

Module-4

7 Analyze the continuous beam shown in Fig.Q.7 by matrix flexibility method using system approach and draw BMD. Take moments as redundants. (16 Marks)

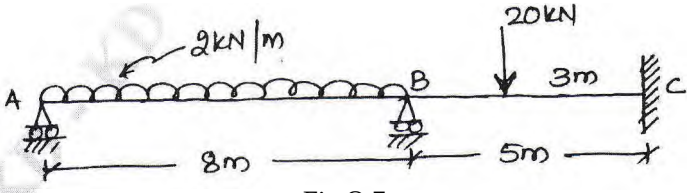


Fig.Q.7

OR

8 Analyze the pin-jointed truss shown in Fig.Q.8 by matrix flexibility method of system approach and determine forces in all the members. Take force in member 'OA' as redundant. (16 Marks)

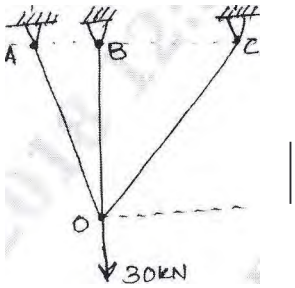
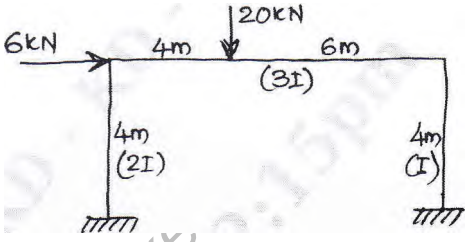


Fig.Q.8

Module-5

9 Analyze the rigid frame shown in Fig.Q.9 by matrix stiffness method and draw BMD. (16 Marks)



OR

10 Analyze the pinjointed frame shown in Fig.Q.10 by matrix stiffness method and find forces in all the members. The numbers in parentheses are the C/S areas of members in sqmm. (Take E = constant). (16 Marks)

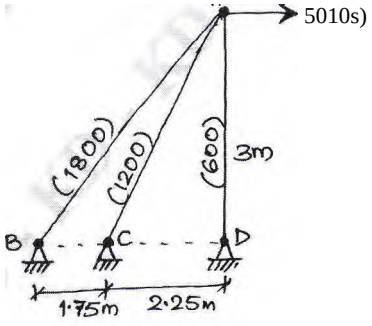


Fig.Q.10

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