

AU - 2836

Four Year Seventh Semester B. E. (Civil Engg.) Examination

THEORY OF STRUCTURES - II

Paper - 7 CE 01

(USC - 10213)

P. Pages : 5

Time : Three Hours]

[Max. Marks : 80

- Note :** (1) All questions carry equal marks.
(2) Assume suitable data wherever necessary.
(3) Illustrate your answer wherever necessary with the help of neat sketches.
(4) Use pen of Blue/Black ink/refill only for writing the answer book.

1. Analyse the Portal frame as shown in Fig. 1 by slope deflection method, also draw BMD.

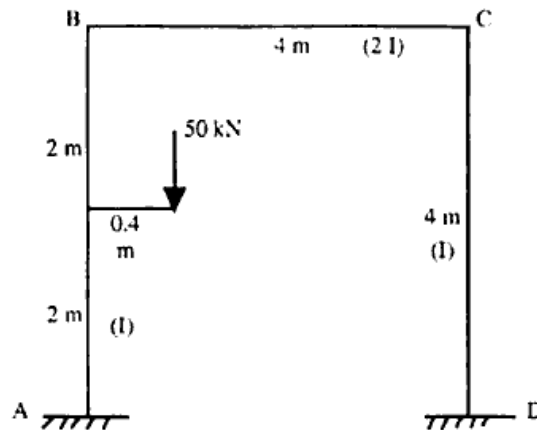


Fig. 1

14

OR

2. Analyse the Portal frame as shown in Fig. 1 by moment distribution method, also draw BMD.

14

3. Analyse the continuous beam shown in Fig. 2 by Kani's method, also draw BMD.

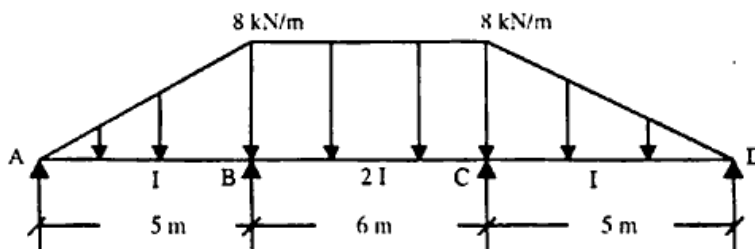


Fig. 2

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OR

4. Analyse the frame as shown in Fig. 3 by Kani's method, also draw BMD.

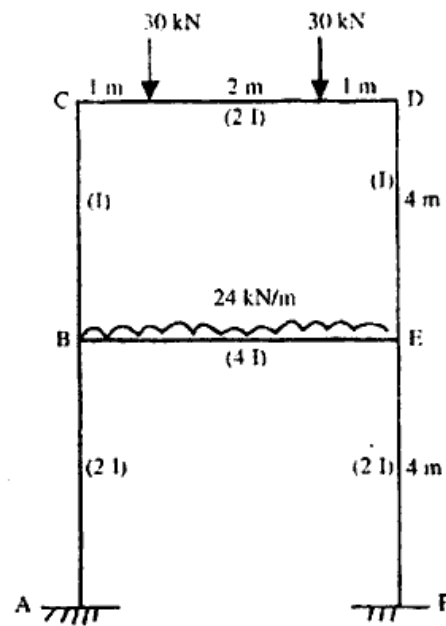


Fig. 3

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5. Analyse the Portal frame shown in Fig. 4 by Castigliano's Second theorem.

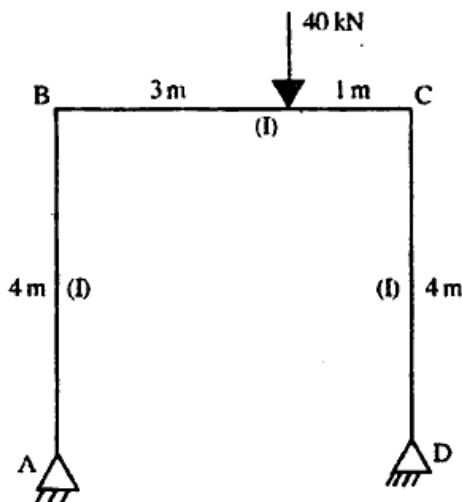


Fig. 4

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OR

6. Analyse the truss as shown in Fig. 5. All members of same material and have the same sectional area.

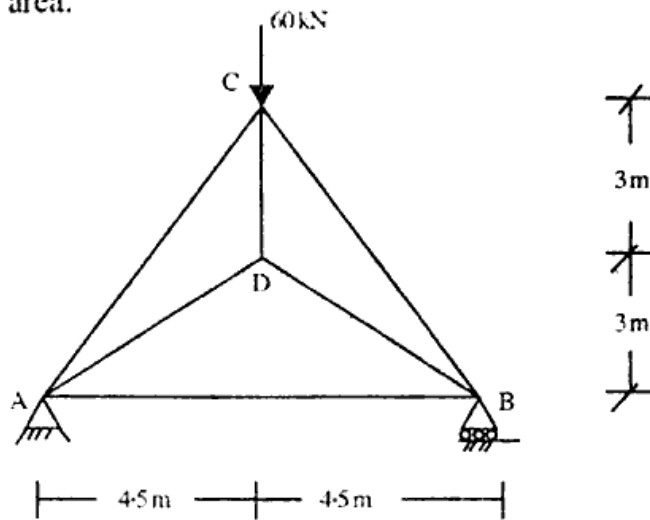


Fig. 5

13

7. (a) Explain Betty's theorem.
(b) Plot I.L.D for M_b , R_A and R_b for two span continuous beam as shown in Fig. 6. Determine ordinates at 1 m interval.

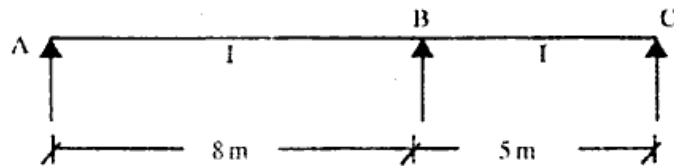


Fig. 6

10

OR

8. Analyse the frame as shown in Fig. 7, by tension coefficient method.

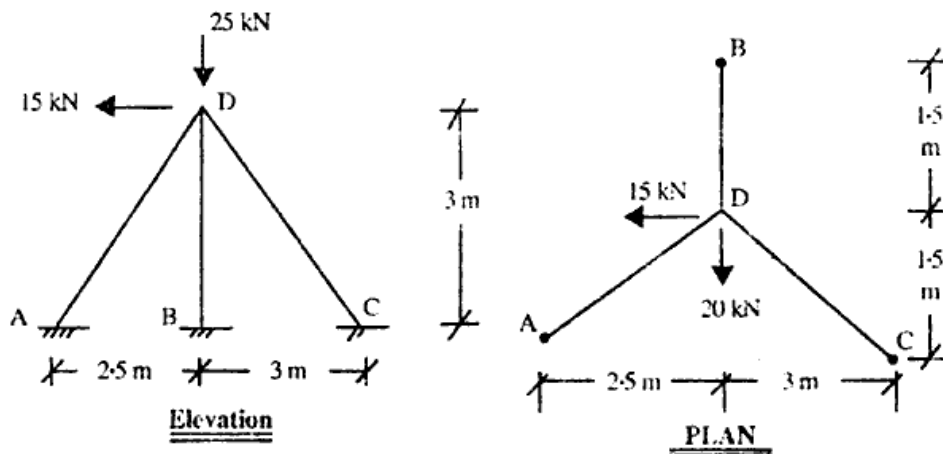


Fig. 7

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9. Analyse the continuous beam shown in Fig. 8, if the downward settlement of support B and C are 10 mm and 5 mm respectively. Take $EI = 18 \times 10^{11} \text{ N}\cdot\text{mm}^2$. Use flexibility matrix method.

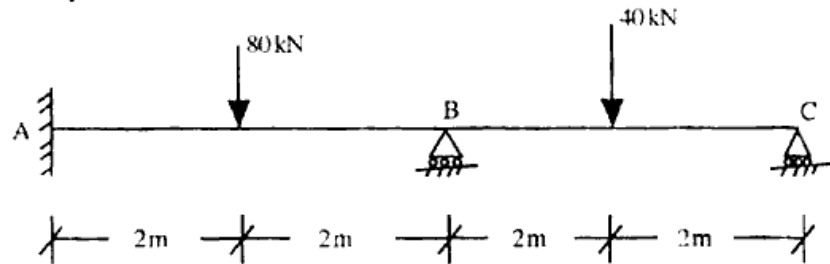


Fig. 8

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OR

10. (a) State the assumptions made in Plastic theory of analysis.
(b) Determine the shape factors of the T-Section as shown in Fig. 9.

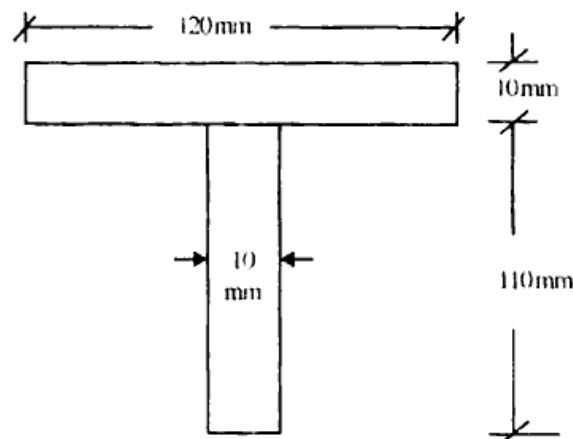


Fig. 9

8

11. Analyse the continuous beam shown in Fig. 10 by Stiffness method, also draw BMD.

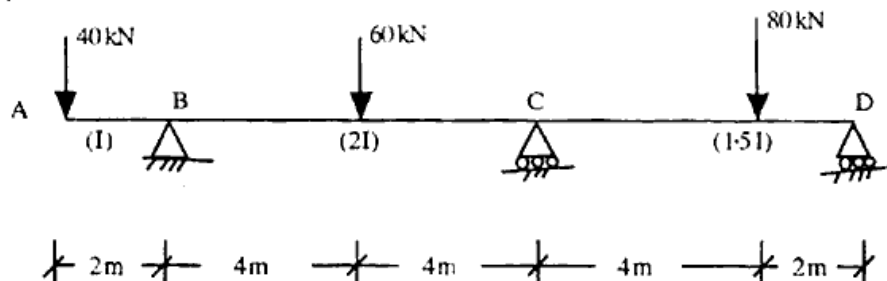


Fig. 10

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OR

12. Using Stiffness method, analyse the frame shown in Fig. 11 :—

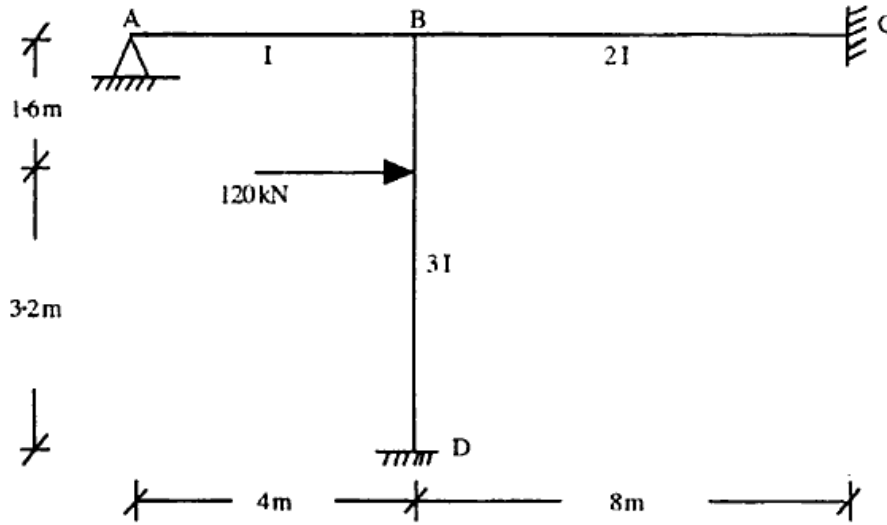


Fig. 11

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