

Seat
No.

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CAI1327

Theory of Structures - II (New) (1070)

P. Pages : 4

Time : Three Hours

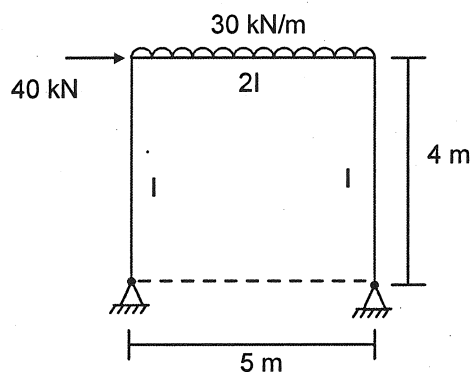
Max. Marks : 100

Instructions to Candidates :

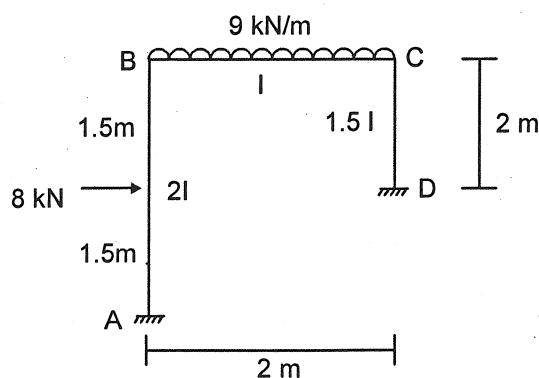
1. Do not write anything on question paper except Seat No.
2. Answersheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. Solve **any one** question from each unit.
5. Use of non programmable calculator is allowed.

UNIT- I

1. a) Explain the theorem of least work 5
b) Analyse the portal frame by method of minimum energy plot BMD. 15

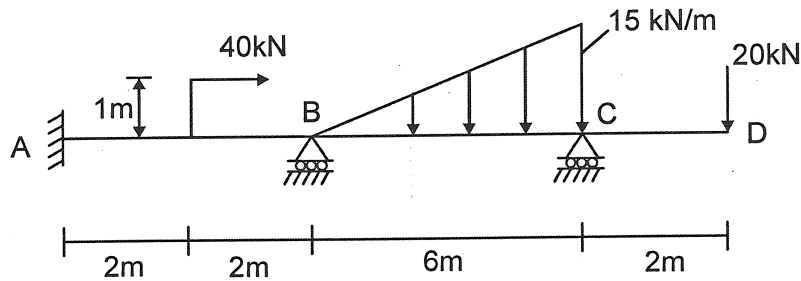


2. Analyse the frame shown in fig. by slope deflection method and draw BMD. 20

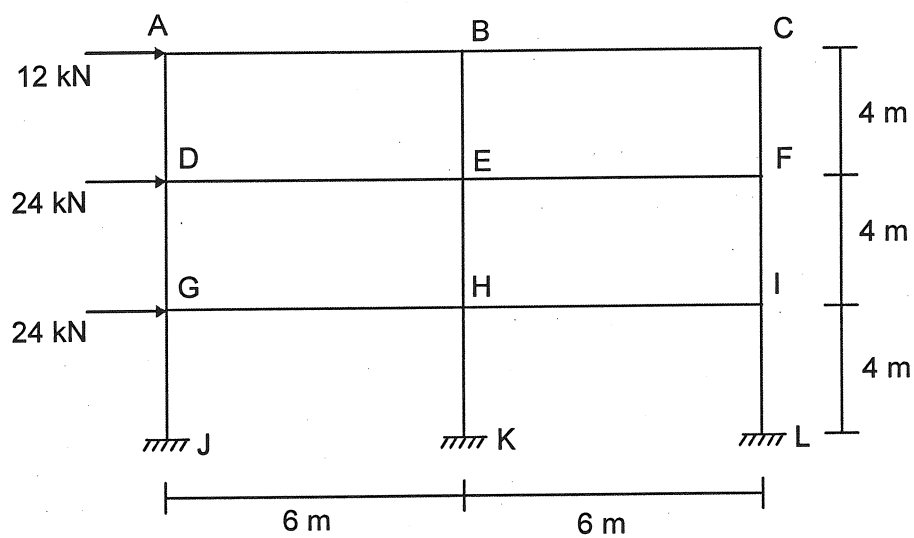


UNIT - II

3. Analyse the continuous beam as shown in fig. by moment distribution method. Sketch the BMD and SFD. 20

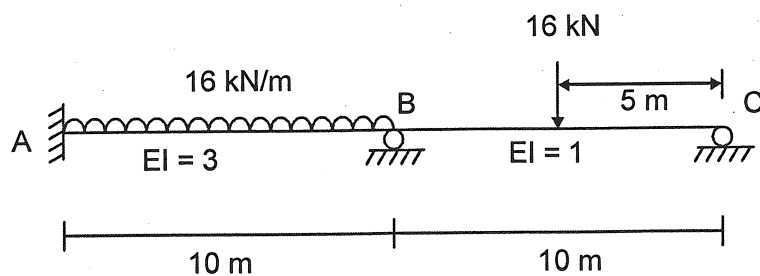


4. a) Explain the assumptions for substitute frame method. 5
b) Analyse the frame by portal method. 15



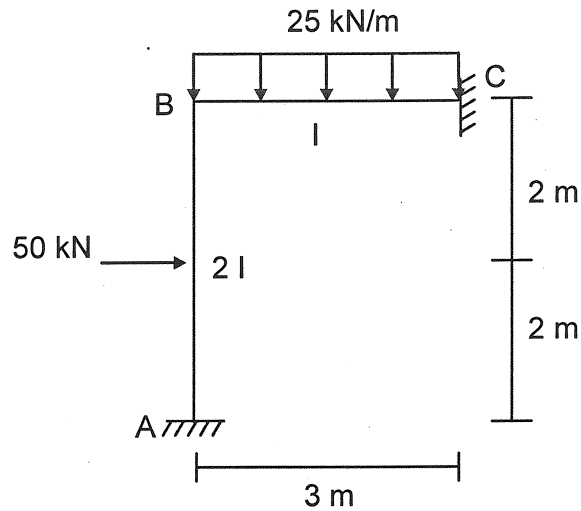
UNIT - III

5. Analyse the continuous beam by flexibility method. 20



6. Analyse the frame by flexibility method.

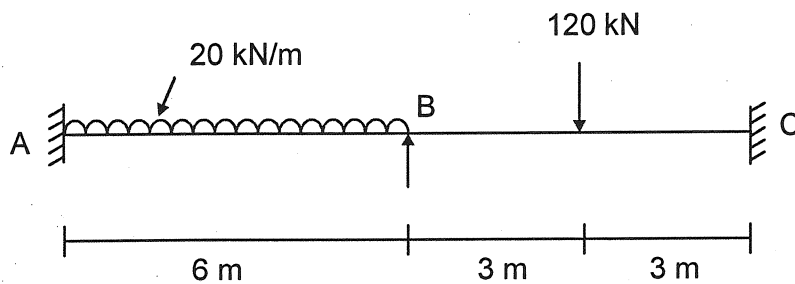
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UNIT - IV

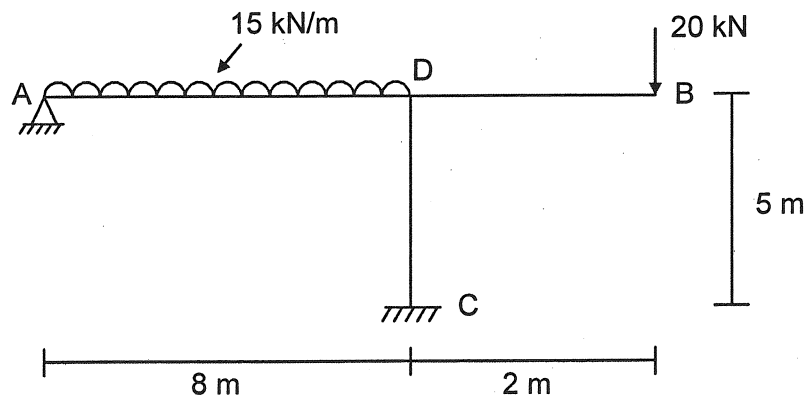
7. Analyse the continuous beam by stiffness method. Draw BMD.

20



8. Formulate the stiffness matrix for the bent as shown in fig. treating rotations at A & D as unknowns.

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UNIT - V

9. a) Define :

8

i) Shape factor.

ii) Plastic hinge.

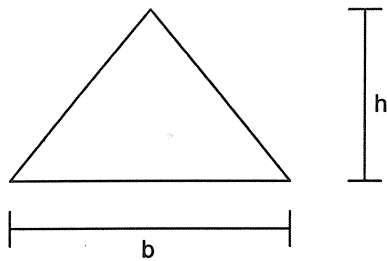
iii) Plastic moment.

iv) Collapse mechanism.

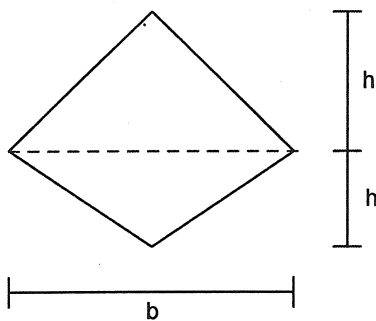
b) Find the shape factor for

i) Triangle section

12



ii) Diamond section

10. Determine the collapse load W for the frame as shown in fig.

20

