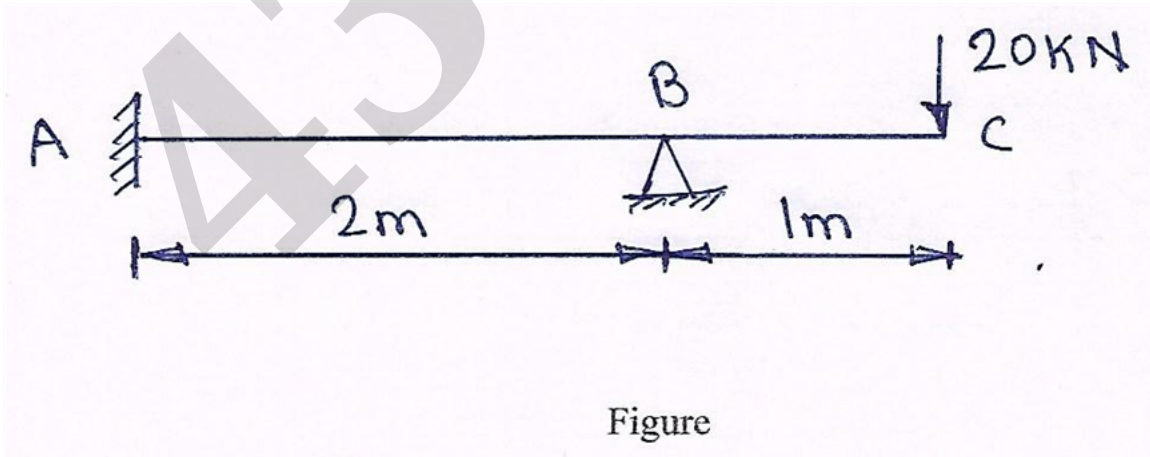


Seat No. **OCT-NOV 2025 WINTER EXAMINATION****1154 B.Tech. CBCS****Sub. Name: Theory of Structures****Sub. Code: 66873/81515/81792****Day and Date: Friday ,12-12-2025****Total Marks: 70****Time: 10:30 AM To 01:00 PM****Instructions:**

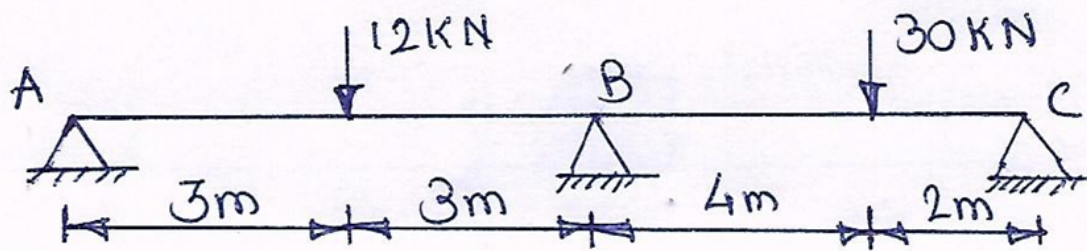
- Special Inst.:**
- 1) Q. No. 1 & Q. No. 5 are compulsory questions.
  - 2) Solve any two questions from Q. No. 2 to Q. No. 4 and any two questions from Q. No. 6 to Q. No. 8.
  - 3) Figures to the right indicate full marks.
  - 4) Assume suitable data if necessary and state them clearly.
  - 5) Use of non-programmable calculator is allowed.

- Q1)** Write a short Note on the following [7]
- a. Explain in detail static indeterminacy of the structure. [2]
  - b. Explain in detail Clapeyron's theorem of three moments. [3]
  - c. What is Unit load method explain in detail. [2]

- Q2)** Analyse the propped cantilever beam loaded as shown in the figure by using [14]  
Consistent deformation method. Also draw SFD and BMD.

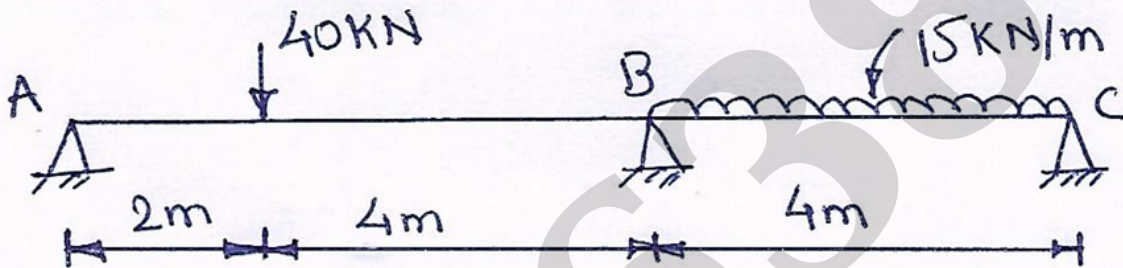


- Q3)** A continuous beam ABC is loaded as shown in the figure below. Find out supports [14]  
moments and reactions by using Clapeyron's theorem of three moments. Also draw  
BMD.



Figure

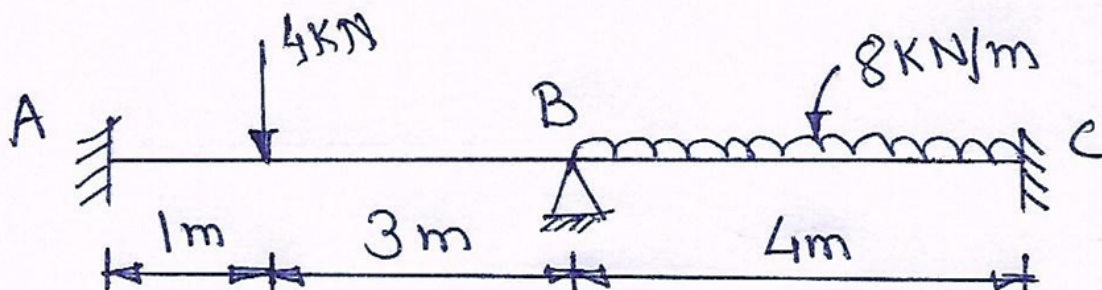
- Q4) A continuous beam ABC is loaded as shown in the figure below. Find out supports [14]  
moments and reactions by using Castiglione's theorem. Also draw BMD.



Figure

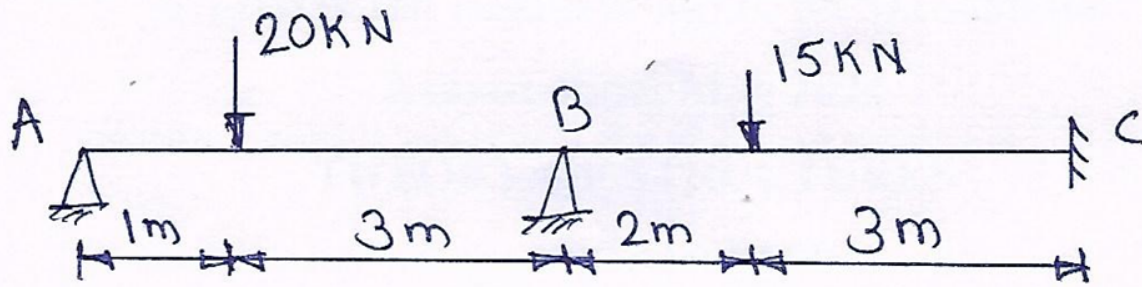
- Q5) Write short note on the following [7]
- Explain modified Slope and deflection method in detail. [2]
  - Explain distribution factor used in Moment distribution method. [2]
  - Write down properties of stiffness matrix. [3]

- Q6) A continuous beam is loaded as shown in the figure below. Find out supports [14]  
moments and reactions by using slope and deflection equation. Also draw BMD.



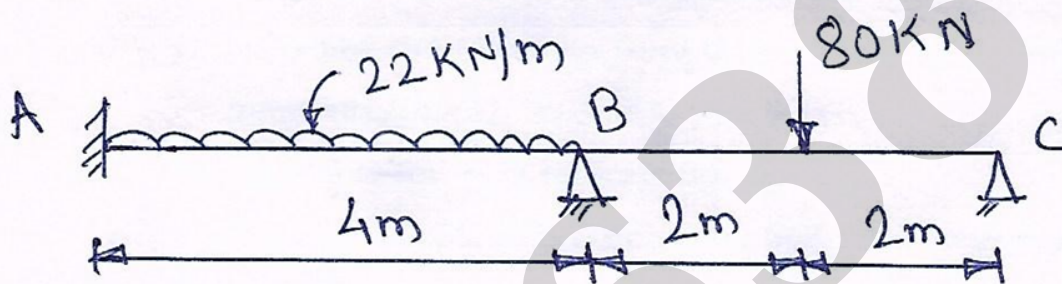
Figure

- Q7) A continuous beam ABC is loaded as shown in the figure below. Find out supports [14]  
moments and reactions by using moment distribution method. Also draw BMD.



Figure

- Q8)** A continuous beam is loaded as shown in the figure below. Find out supports [14] moments and reactions by using stiffness matrix method. Also draw BMD.



Figure

## End Of Question Paper

**Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -**

This Question Paper may be distributed for following Subjects as common code.

सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

- 1] (1154) B.Tech. CBCS (81515) Theory of Structures Part 3 SEM 6
- 2] (101) Bachelor of Engineering (81792) Theory of Structures Part 3 SEM 6
- 3] (101) Bachelor of Engineering (66873) Theory of Structures Part 3 SEM 6