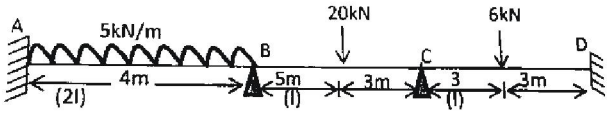
7. Define Finite Element Method (FEM) and also explain displacement and force approach in detail. **20**

8. A continuous beam is loaded with ultimate loads as shown in fig. Determine the requirement plastic moment of resistance. **20**



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W471

B. Tech. EXAMINATION, May 2019

(Fourth Semester)

(Weekend) (Re-appear Only)

STRUCTURAL ANALYSIS-II

CEW202

Time : 3 *Hours*] [*Maximum Marks :* 100

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

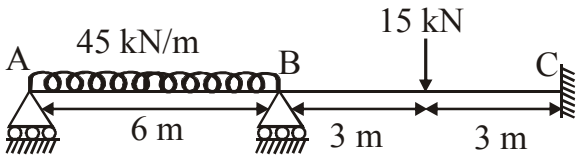
Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Assume any data if missing in the question paper.

1. (a) Write down the difference between flexibility and stiffness matrix.

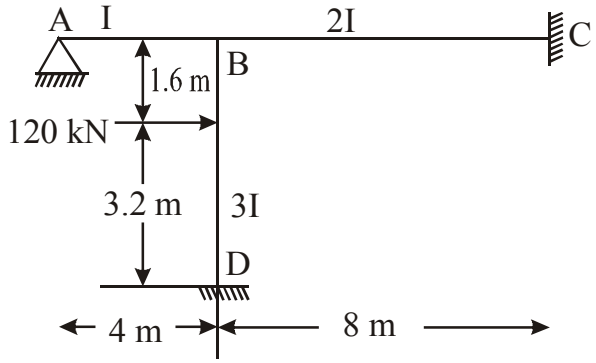
(b) List the properties of stiffness matrix. Also write down the difficulties with direct stiffness method of formulation.

20

2. Analyze the continuous beam shown by flexibility method in which support reaction at A and B are treated as the redundant. Hence, calculate the bending moment at B. Assume flexural rigidity EI as constant for all the beams. **20**



3. Using the displacement method, analyse the frame shown fig. **20**



4. Differentiate global and local co-ordinate. Illustrate with an example in detail. **20**

5. Explain, how flexibility and stiffness matrices are transformed from one co-ordinate to another co-ordinate system ? **20**

6. A suspension cable of span 50 m and dip 5 m is stiffened by a three hinged girder. The dead load is 7.5 kN/m. Determine the maximum bending moment anywhere in the girder when a load of 100 kN rolls from left to right. Determine the maximum tension in the cable. **20**