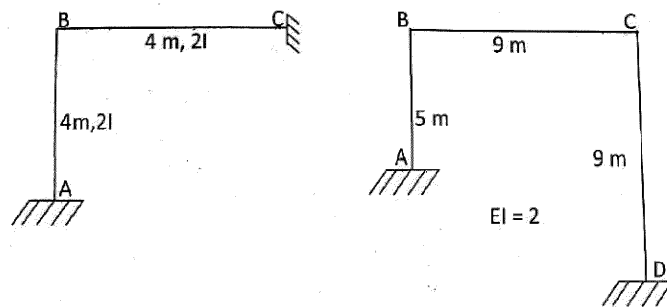**Unit III**

5. Explain the term transformation matrices. List the differen types of transformation matrices encountered in matrix method fo structural analysis. **15**

6. Develop the displacement transformation matrix for the structures shown in fig. and hence derive the stiffness matrix. Assume EI constant for all the members. **15**

Unit IV

7. What are the advantages of Finite element Method (FEM) and also write down its application in engineering field. **15**

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M. Tech. EXAMINATION, May 2019

(First Semester)

(C Scheme) (Re-appear)

CSE (SE)

CES501C

ADVANCED STRUCTURAL ANALYSIS

Time : 3 *Hours*]   [*Maximum Marks :* 75

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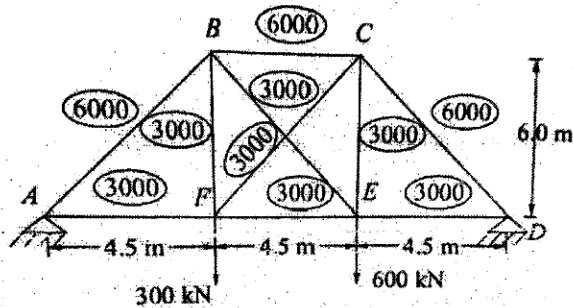
Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. Assume any data if missing in the question-paper.
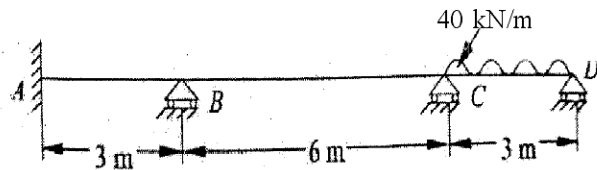
Unit I

1. Analyze the pin-jointed plane frame shown in fig. by flexibility matrix method. The numbers in parenthesis are cross-section areas of the members in mm^2. **15**
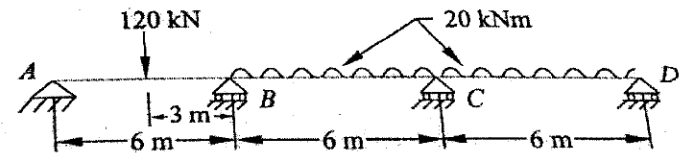

2. Support B of continuous beam shown in Fig. has a downward settlement of 30 mm. Calculate the support reactions at D by flexibility matrix method. Take EI = 5600 km^2. **15**
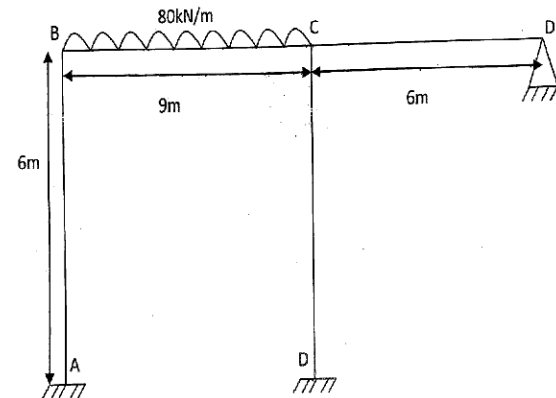

Unit II

3. Analyses the continuous beam ABCD shown in fig. by stiffness matrix method. Take EI same throughout. **15**

4. Using stiffness matrix method, analyses the frame shown in fig. Take EI constant throughout. **15**

8. Define Finite Element Method (FEM) also explain hybrid and mixed approaches in detail. **15**