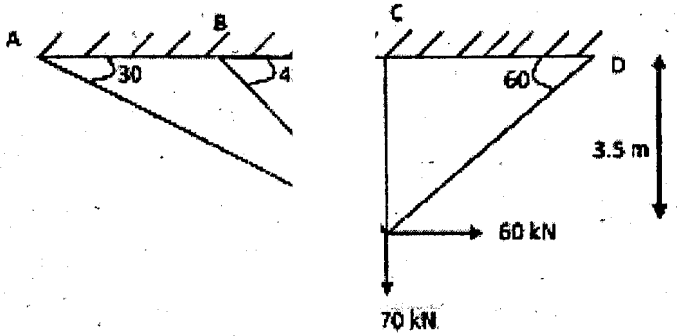
7. What is matrix n … l of analysis? Why stiffness meth… is called a displacement me… Write down the difference bet… force and displacement meth… (20)

8. Analyse the pin-jo… truss shown in fig. by stiffness matri… thod. Take area of cross-section for a… mbers = 1500 mm² and modulus of ela… E = 200 kN/mm². (20)



Roll No. .....

23377

M. Tech. 1st Sem. Civil Engg. (Specialisation in Structural Engineering) Examination– December, 2016

ADVANCED STRUCTURAL ANALYSIS

Paper : CE-611/MTSD-102

Time : 3 hours ***Max. Marks : 100***

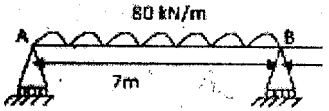
Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard will be entertained after the examination.

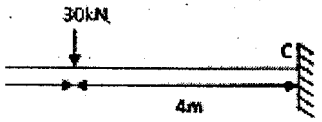
Note: Attempt any **five** questions.

1. How do the flexibility and stiffness matrices depend on static and kinematic indeterminacies? Also explain why is stiffness matrix of a liner elastic structure symmetric? (20)

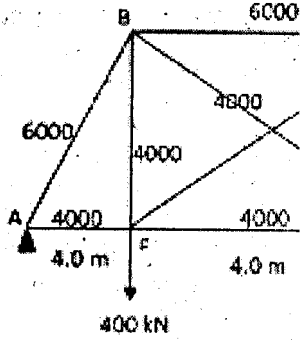
2. Analyze the continuous beam shown by flexibility method in which support reaction at A and B are treated as redundant. Hence, calculate the bending moment at B. Assume

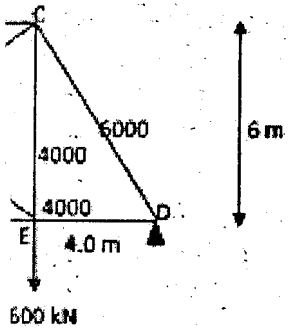
flexural rigidity E constant for all the beams. (20)



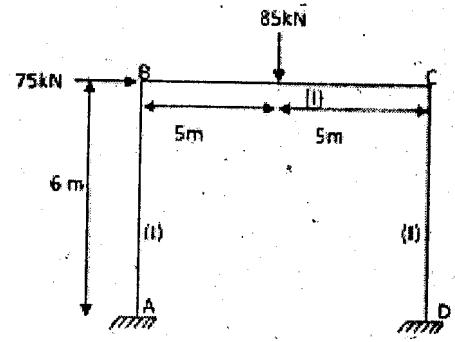


3. Analyse the pin-j plane frame shown in fig. by flexil matrix method. The numbers in parer s are cross-sectional area of the membe mm^2. (20)

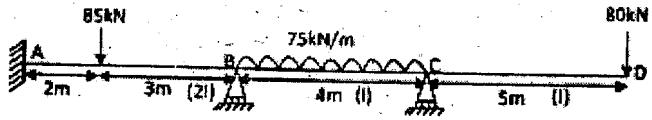




4. Analyze the rigid shown in fig. given below by flexibility x method. (20)



5. Analyze the beam by stiffness matrix method. (20)



6. Using stiffness matrix method, analyse the frame shown in fig. Take EI constant throughout. (20)