R18

Code No: 156AB

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, August/September - 2021

ADVANCED STRUCTURAL ANALYSIS

(Civil Engineering)

Time: 3 Hours **Max. Marks: 75**

Answer any five questions

All questions carry equal marks

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1. Develop flexibility and stiffness matrix which relates forces and displacements in the structural members with suitable examples. [15]

2. Discuss about local and global coordinate systems, also discuss about element stiffness matrix and load vector. [15]

3. Obtain joint load matrix and stiffness matrix for the beam loaded as shown in figure 1. [15]

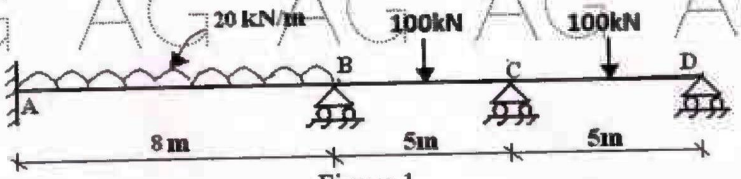

Figure 1

4. Draw the flow chart for the analysis of continuous beam having three degrees of freedom using stiffness method. [15]

5. Analyze the beam loaded as shown in figure 2, using flexibility method. [15]

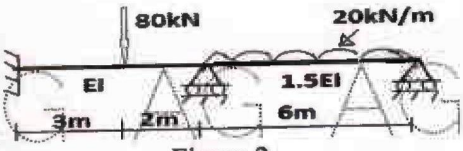

Figure 2

6. Analyze the frame loaded as shown in figure 3 using flexibility method. [15]

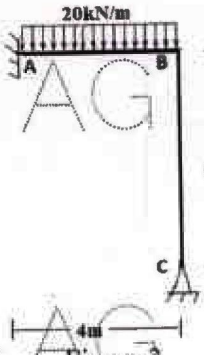

Figure 3

7. Analyze the beam shown in Figure 4 using Stiffness method. [15]

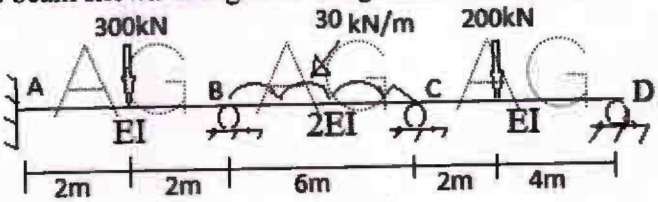

Figure 4

8. What are "shear walls"? Describe the structural behavior of large frames without and with shear walls with examples. [15]

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