Q.P. Code: 20CE1001 **R20**

Reg. No: | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

M.Tech I Year I Semester Regular Examinations July-2021

ADVANCED STRUCTURAL ANALYSIS

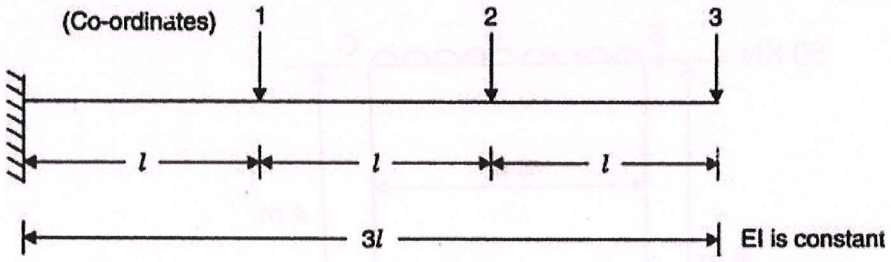
(Civil Engineering)

Time: 3 hours Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

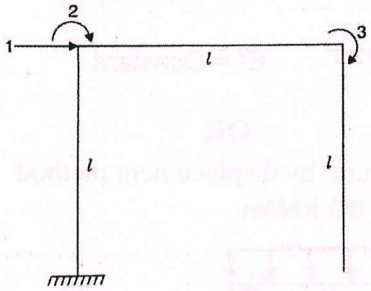
UNIT-I

1 Develop the flexibility matrix for the cantilever with coordinates as shown below **L3 12 M**



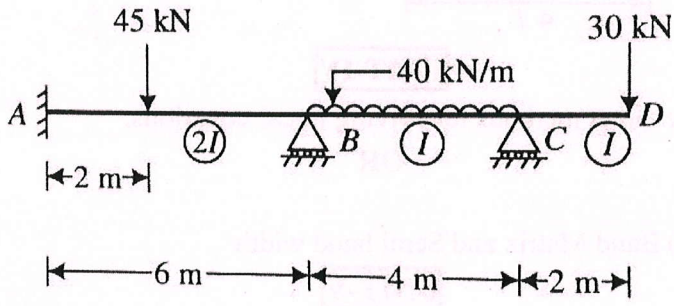
OR

2 Develop the flexibility matrix for structure with coordinates shown below. **L3 12 M**



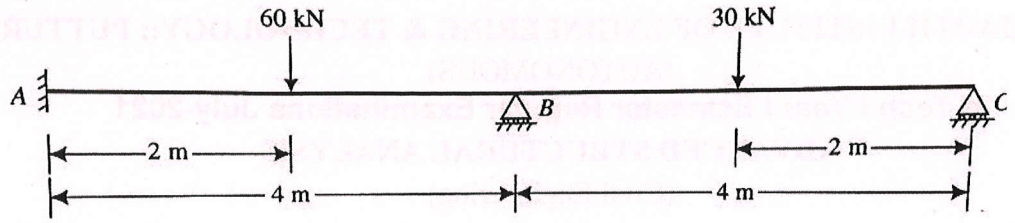
UNIT-II

3 Analyze the continuous beam shown below by displacement method **L4 12 M**



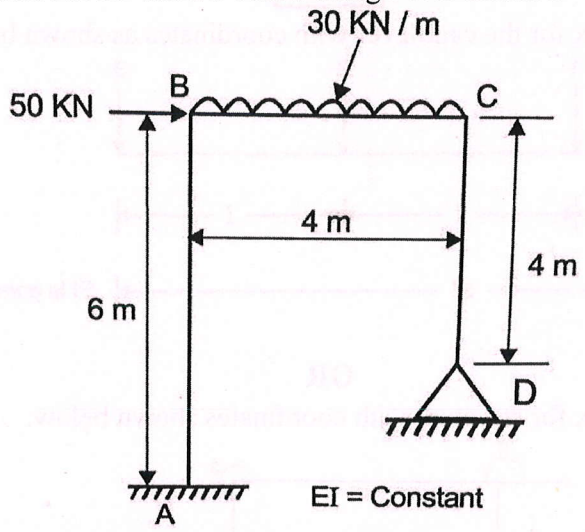
OR

4 Analyze the continuous beam shown below, if the downward settlement of supports B and C are 12 mm and 6 mm respectively. Given EI= 20 x 10^{12} N-mm^2. Use Flexibility matrix method **L4 12 M**



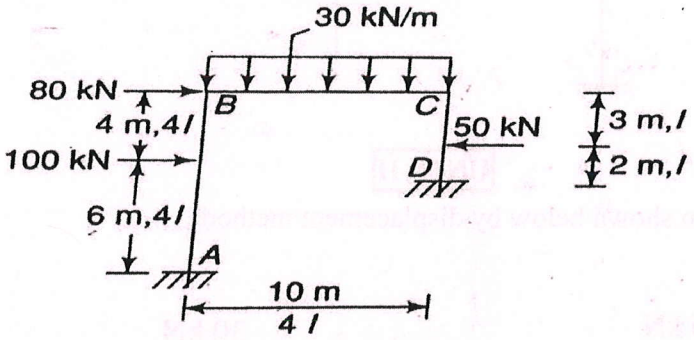
UNIT-III

5 Analyze the portal frame ABCD shown below using Force Method **L4 12 M**



OR

6 Analyze the portal frame shown in figure by displacement method **L4 12 M**



UNIT-IV

7 List out and explain the direct methods for solving linear equations. **L2 12 M**

OR

8 Explain briefly about **L2 12 M**
i) Cholesky Method ii) Band Matrix and Semi band width

UNIT-V

9 Determine the influence of a constant axial force on transverse vibrations of beams? **L3 12 M**

OR

10 Determine the stability analysis of a simple truss using displacement method. **L3 12 M**

*** END ***