

Total No. of Questions : 8]

SEAT No. :

P1513

[5460]-104

[Total No. of Pages : 3

T.E. (Civil)

**STRUCTURAL ANALYSIS - II**  
**(2012 Pattern) (Semester-I)**

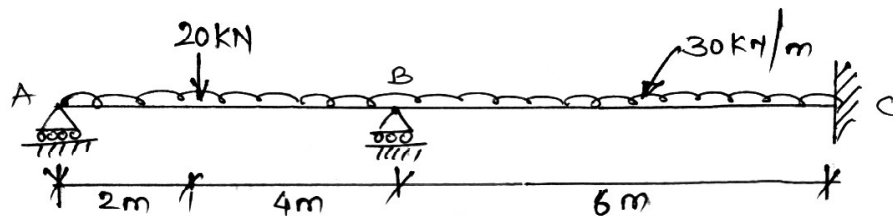
Time : 2 ½ Hours]

[Max. Marks : 70

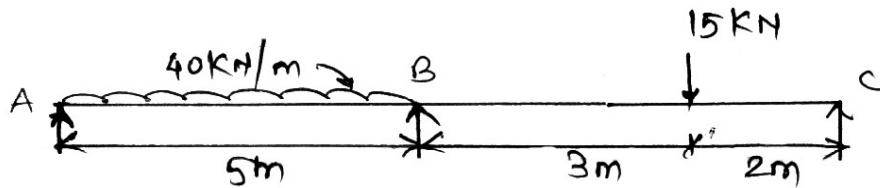
Instructions to the candidates:

- 1) Answer questions Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8.
- 2) Figures to the right side indicate full marks.
- 3) If necessary, assume suitable data & indicate clearly.
- 4) Use of electronic pocket calculator is allowed.

Q1) a) Analyse the beam by slope deflection method. Draw BMD & SFD. Take  $EI=3900 \text{ kN-m}^2$ . [10]

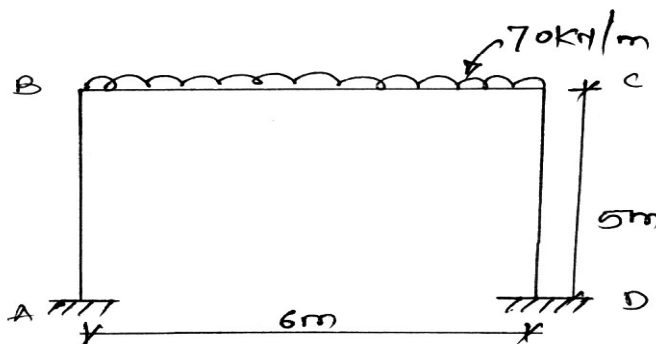


b) Analyse the continuous beam shown in figure below using the Flexibility method & draw the bending moment diagram. [10]



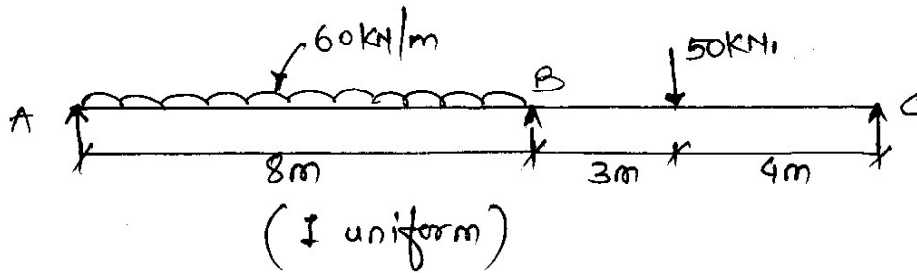
OR

Q2) a) Analyse the frame by slope deflection method. Draw BMD. [10]



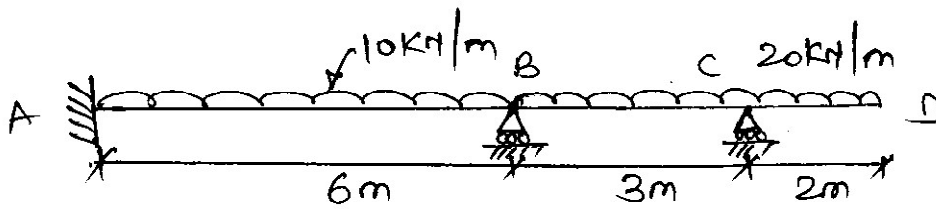
P.T.O.

- b) Analyse the continuous beam shown in figure below by method of moment distribution. [10]



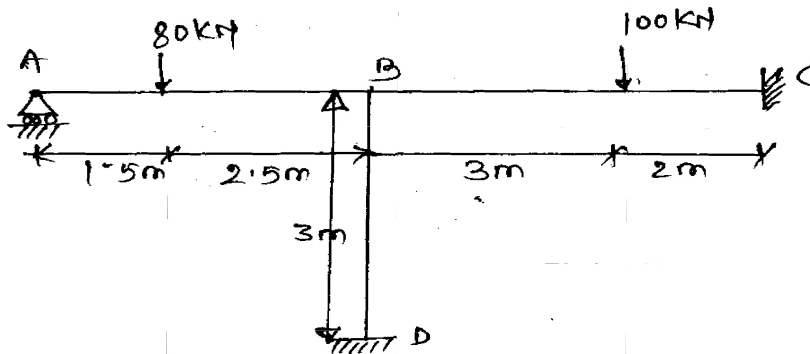
- Q3) Find the end moments of the beams as shown in figure by stiffness matrix method. Draw SFD & BMD. [16]

Take  $EI = 3800 \text{ kNm}^2$

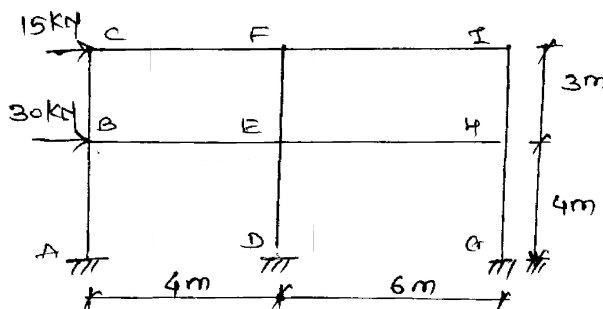


OR

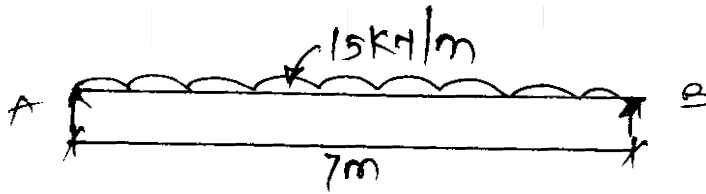
- Q4) Analyse the frame by matrix stiffness method & sketch the bending moment diagram. [16]



- Q5) a) Analyse the frame shown in figure below by portal method. [10]



- b) A simply supported beam of length 7 m is loaded as shown in figure. Determine the maximum deflection. [8]



OR

- Q6)** a) Analyse the frame as shown in figure Q.5 (a) by cantilever method. [10]  
b) A cantilever beam loaded with udl of 30 kN/m, find the maximum deflection span of the beam is 2m [8]

- Q7)** a) Explain [8]  
i) Nodes  
ii) CST  
iii) LST  
iv) QST  
b) Explain shape function for Quadratic rectangular element. [8]

OR

- Q8)** a) Differentiation between Axisymmetric & Iso parametric elements. [8]  
b) Explain rectangular elements. [8]

