

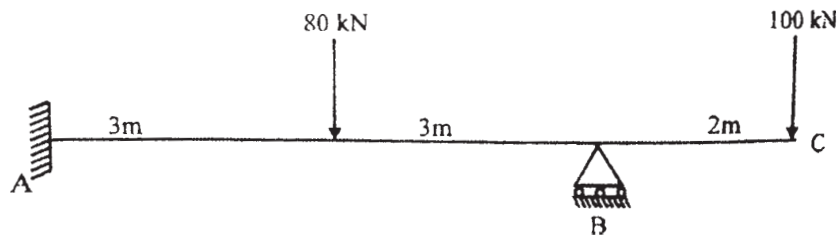
[4858] - 1002

**T.E.(Civil) (Semester - I)**  
**STRUCTURAL ANALYSIS - II**  
**(2012 Pattern) (End - Sem)**

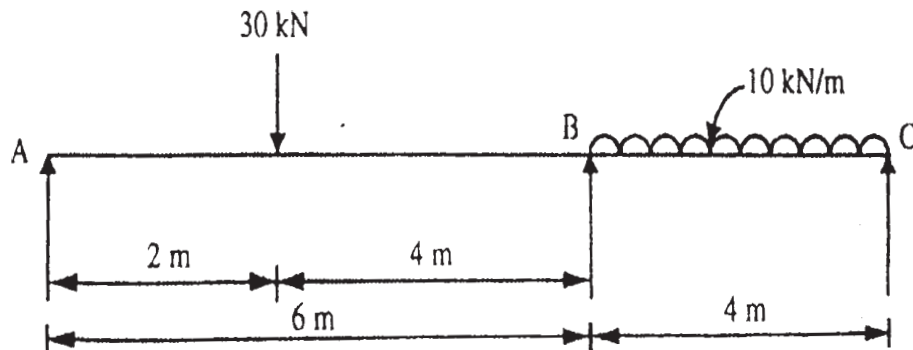
*Time : 2½ Hours]**[Max. Marks : 70**Instructions to the candidates :-*

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

- Q1) a)** Analyse the beam loaded as shown in figure below by slope deflection method and draw bending moment diagram and shear force diagram, EI is constant. **[10]**



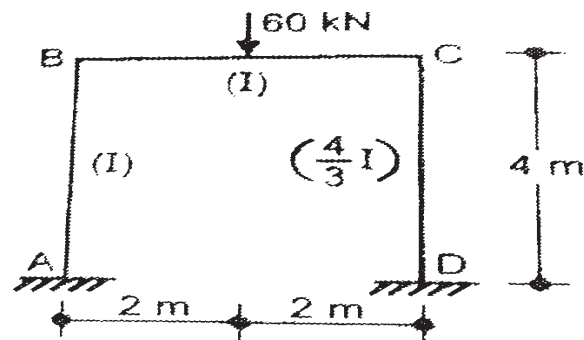
- b)** Analyse the continuous beam shown in figure below using the Flexibility method and draw the bending moment diagram. **[10]**



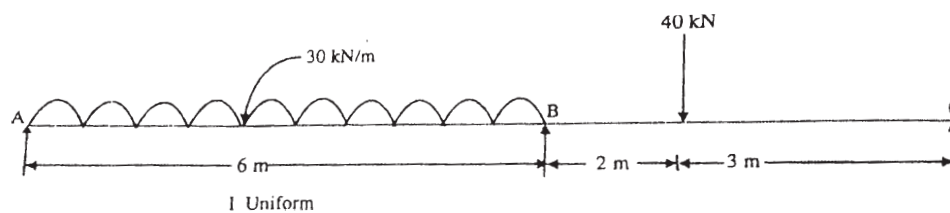
OR

*P.T.O.*

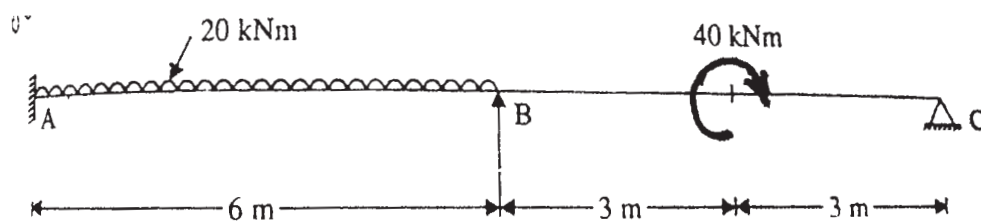
**Q2) a)** Analyse the frame as shown in figure below by slope deflection method. [10]



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

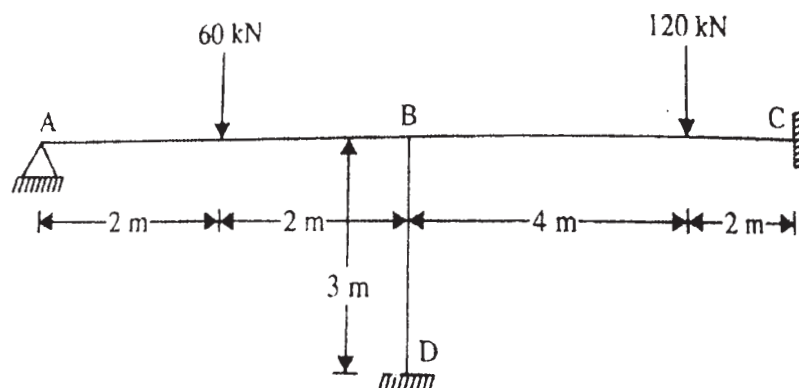


**Q3) a)** A two span continuous beam ABC is fixed at A and simply supported over the supports B and C. AB = 6m and BC = 6m. The moment of Inertia is constant throughout. It is loaded as shown in figure. Analyze the beam by matrix stiffness method. [16]

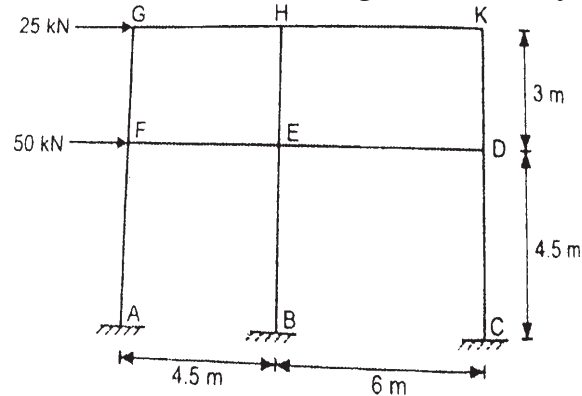


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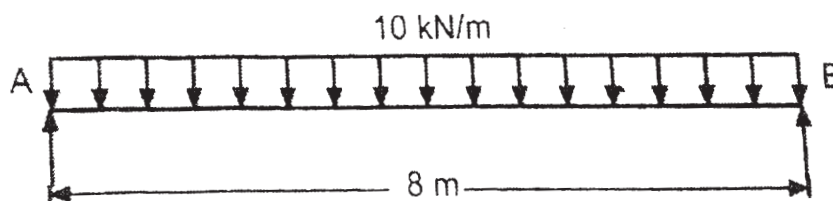
**Q4) a)** Analyse the frame by matrix stiffness method and sketch the Bending Moment Diagram. [16]



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



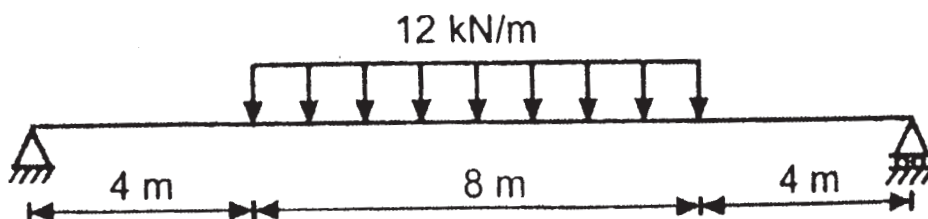
- b) A simply supported beam of length 8m is loaded as shown in figure. Determine the maximum deflection. [8]



OR

- Q6) a)** Analyse the frame as shown in Q.5a) by Cantilever Method. [10]

- b) The beam is loaded and supported as shown in figure. Determine deflection at nodal points. Take 5 nodes. [8]



- Q7) a)** Explain Convergence criteria for FEM. [8]

- b) Explain Plain stress and plain Strain problem. [8]

OR

- Q8) a)** Explain principle of minimum potential energy. [6]

- b) Explain Rectangular elements. [10]

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