

[5460]-504

T.E. (Civil)

STRUCTURAL ANALYSIS - II

(2015 Pattern) (Semester - I)

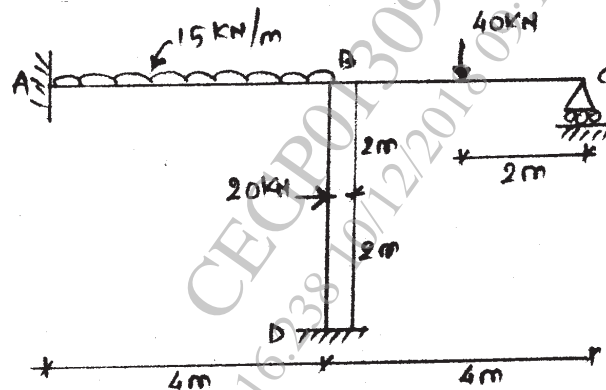
Time : 2½ Hours]

[Max. Marks : 70

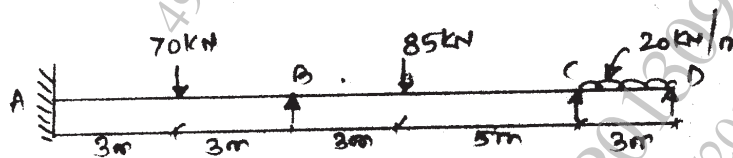
Instructions to the candidates:

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

- Q1)** a) Analyse the frame shown in fig. by slope deflection method. Draw BMD. Take $EI = \text{const.}$ [10]



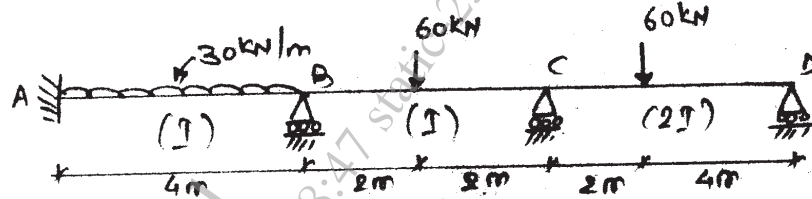
- b) Analyse the continuous beam shown in fig. using flexibility method & draw the BMD. [10]



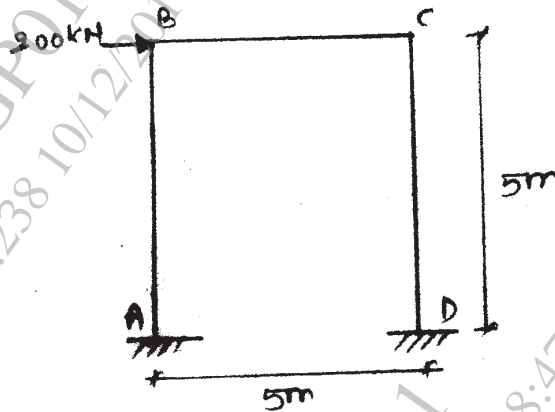
OR.

P.T.O.

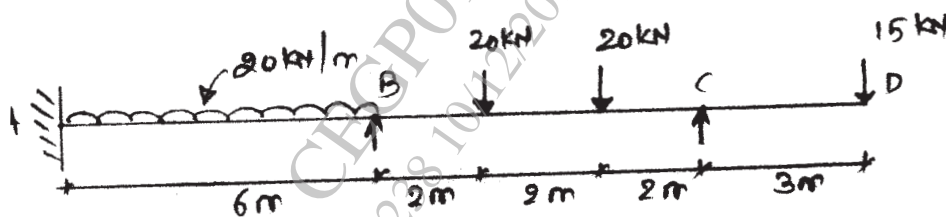
- Q2) a) Analyse the continuous beam shown in fig. by slope deflection method. [10]



- b) Analyse the frame shown in fig. by moment distribution method. Draw BMD. [10]

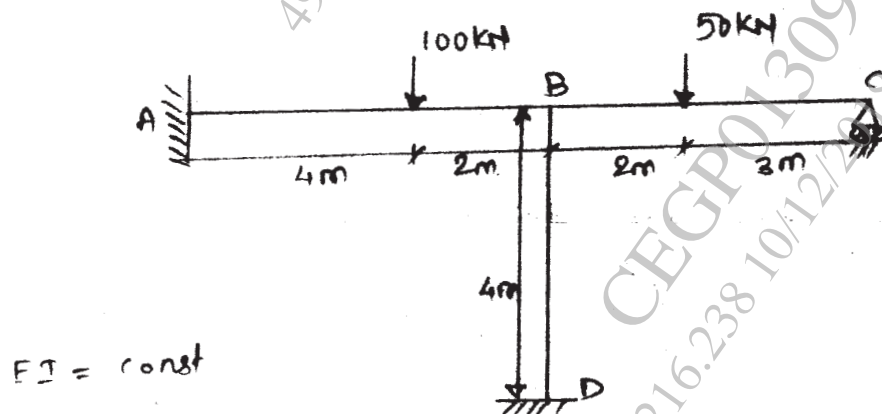


- Q3) Analyse the continuous beam by stiffness matrix method. Draw BMD. [16]

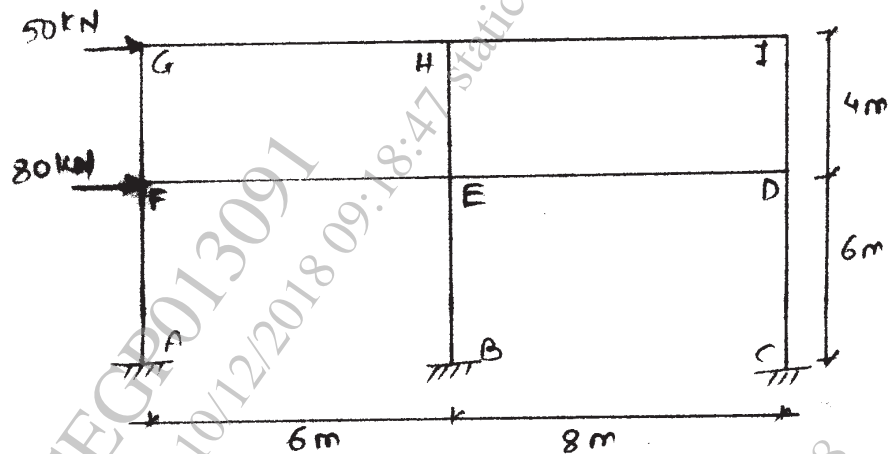


OR

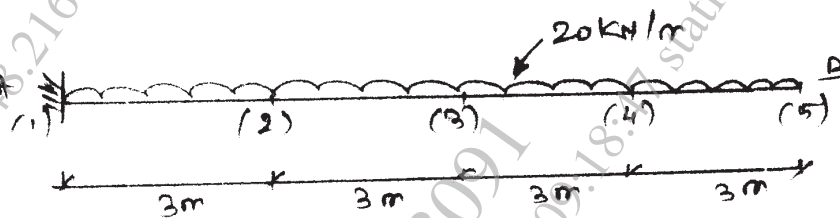
- Q4) Analyse the beam shown in fig. by stiffness matrix method. Draw BMD. [16]



- Q5)** a) Determine the approximate values of moment, shear & axial forces of the frame loaded & supported as shown in fig. using cantilever method. [10]



- b) Using finite difference method find nodal displacement for cantilever as shown in fig. [8]



OR

- Q6)** a) Analyse the frame given in Q.5(a) by portal method. Draw BMD. [10]

- b) Determine maximum deflection for cantilever beam of 2m span carrying 100 kN load at free end. Take 4 nodes. [8]

- Q7)** a) Explain constant strain triangle & linear strain triangle. [8]

- b) Explain convergence criteria of FEM. [8]

OR

- Q8)** a) Using La Grange function find shape function for four noded rectangular element. [8]

- b) Discuss Axisymmetric & Isoparametric elements. [8]

* * *