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T.E. (Civil)
STRUCTURAL ANALYSIS - II
(2015 Pattern) (Semester - I)

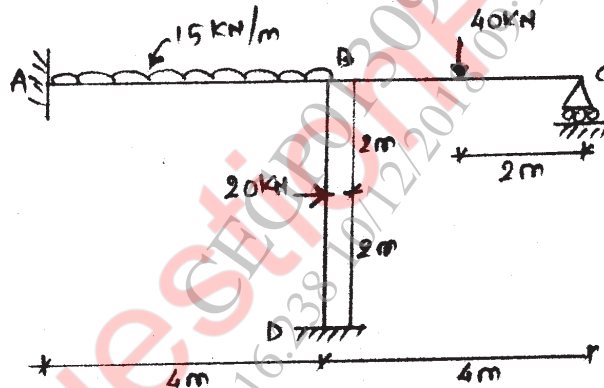*Time : 2½ Hours]*   *[Max. Marks : 70*
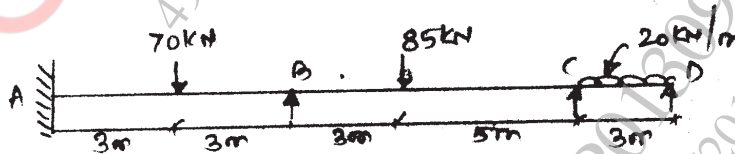
Instructions to the candidates:

    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 = const.   **[10]**
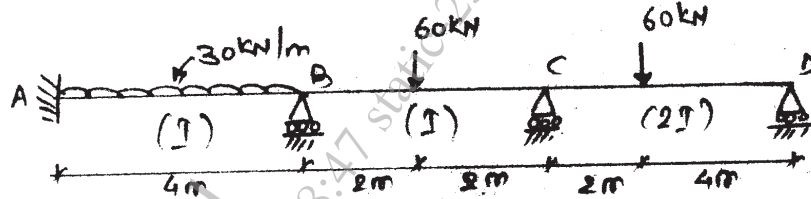

    b) Analyse the continuous beam shown in fig. using flexibility method & draw the BMD.   **[10]**
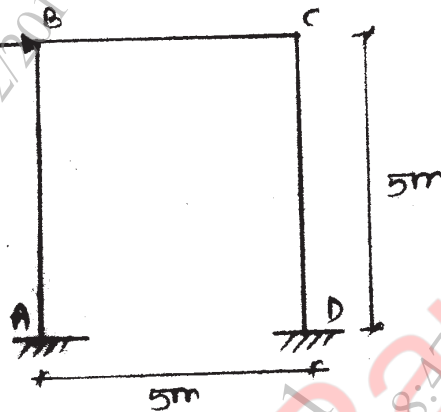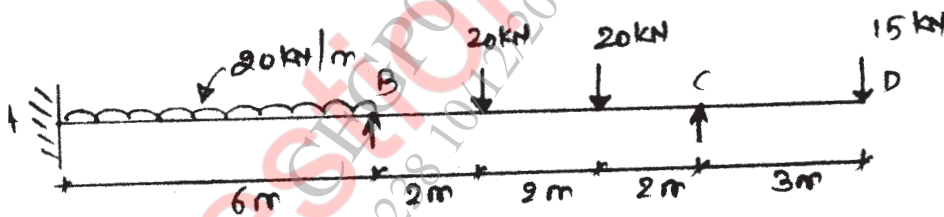

OR.

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

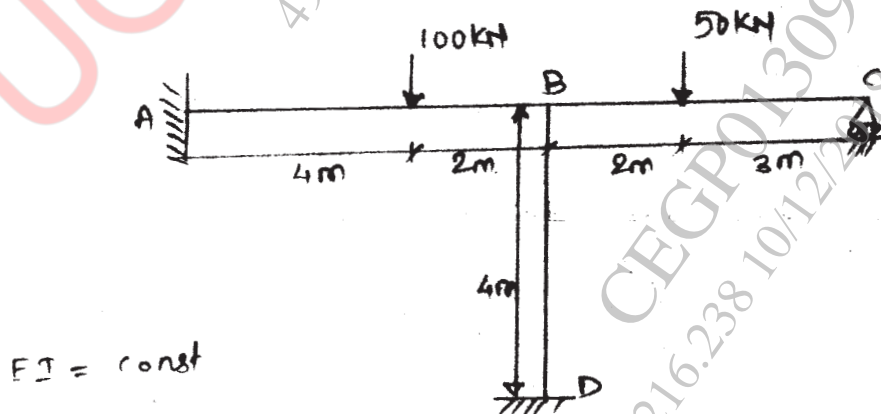b) Analyse the frame shown in fig. by moment distribution method. Draw BMD. **[10]**

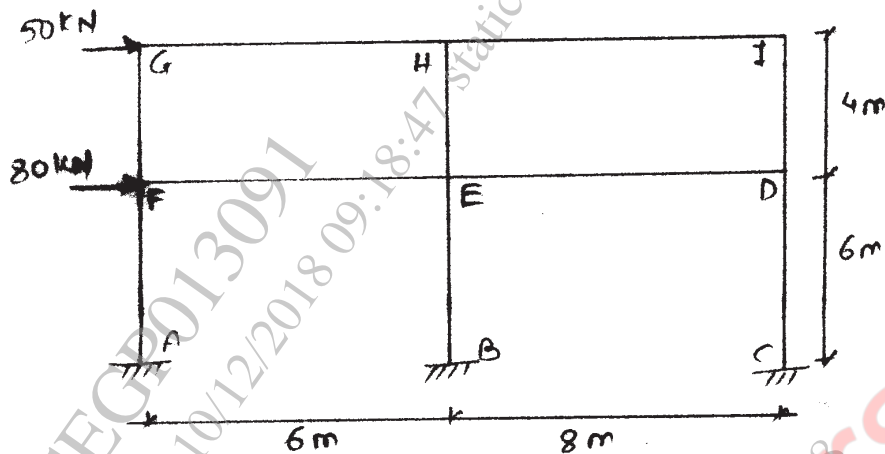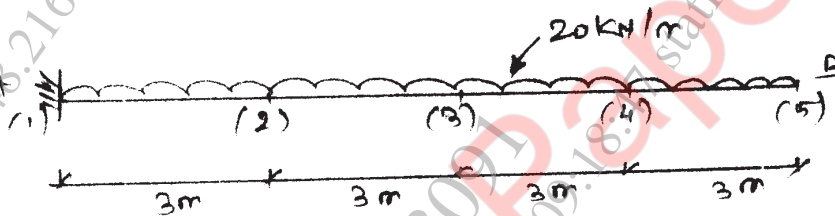*Q3)* Analyse the continuous beam by stiffness matrix method. Draw BMD. **[16]**

OR

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

EI = const

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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]**

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