Total No. of Questions :8]

SEAT No. :

P3561

[Total No. of Pages : 3

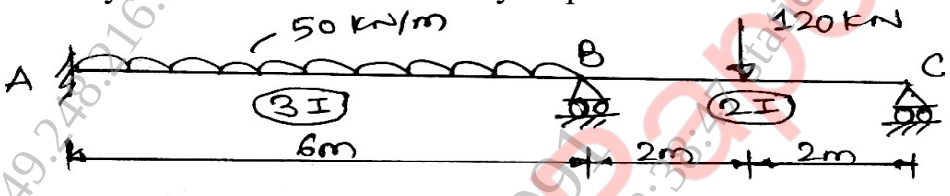
[5560]-504
T.E (Civil)
STRUCTURAL ANALYSIS-II
(2015 Pattern) (Semester - I) (End Sem.)

Time : 2½ Hours] *[Max. Marks : 70*

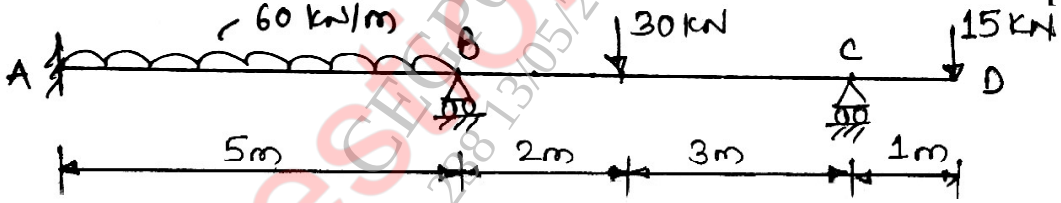
Instructions to the candidates:

1) ***Solve Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8.***
2) ***Figures to the right indicate full marks.***
3) ***Use of non-programmable calculator is allowed.***
4) ***Assume suitable data if necessary.***

Q1) a) Analyze the contineous beam by slope deflection method. Draw BMD **[10]**

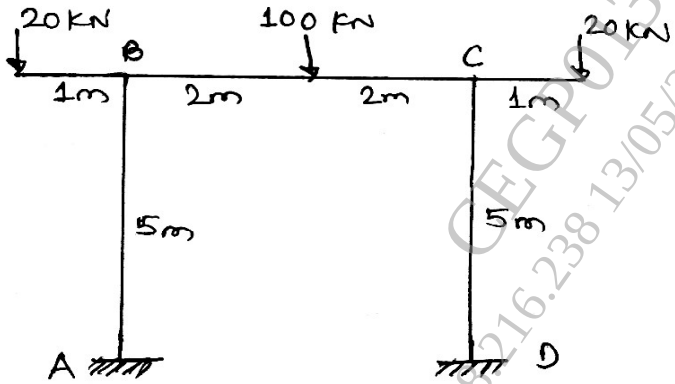


b) Analyze the contineous beam by moment distribution method. Draw BMD. **[10]**



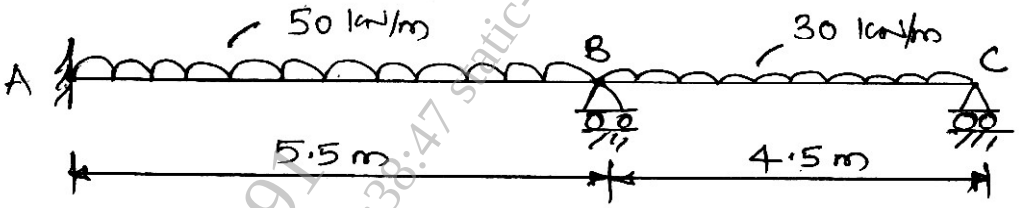
OR

Q2) a) Analyze the frame by Slope deflection method draw BMD **[10]**

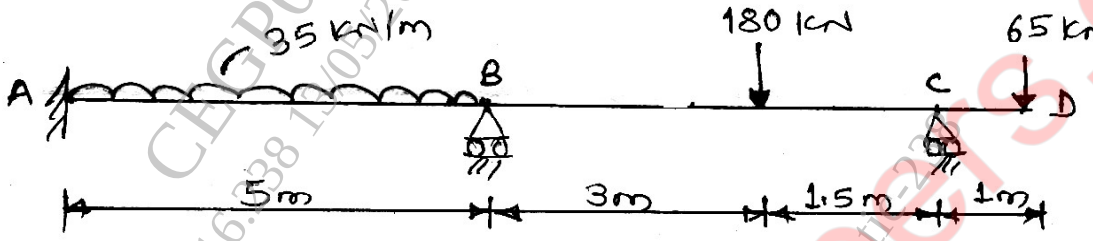


P.T.O.

b) Analyze the contineous beam by Flexibility matrix method. Draw BMD. Take EI constant. **[10]**

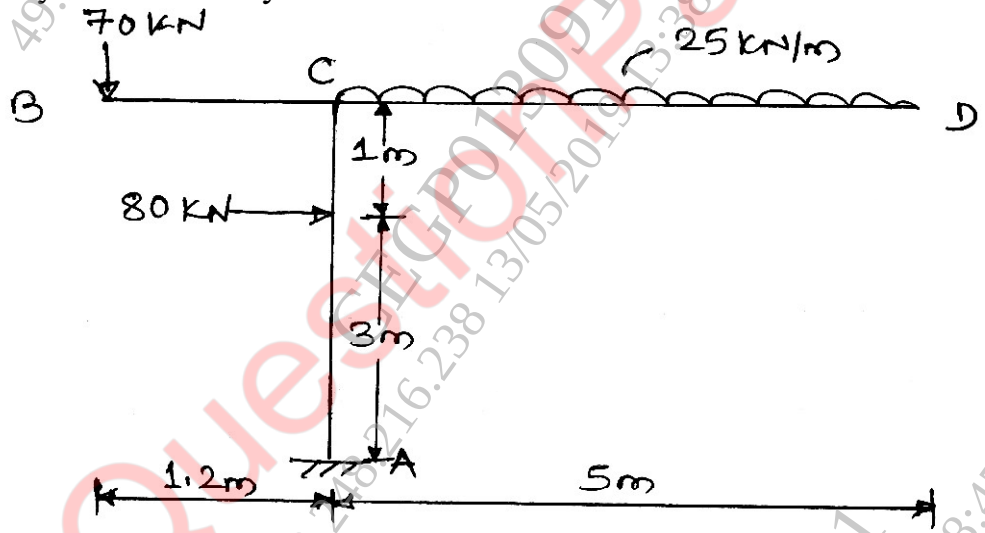


Q3) Analyze the beam by Stiffness Matrix method Draw BMD. **[16]**

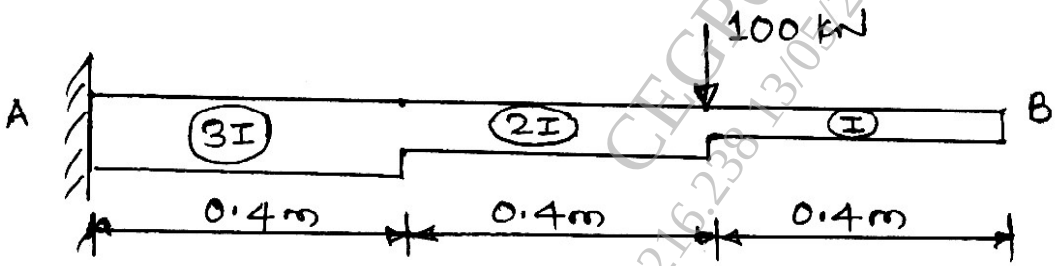


OR

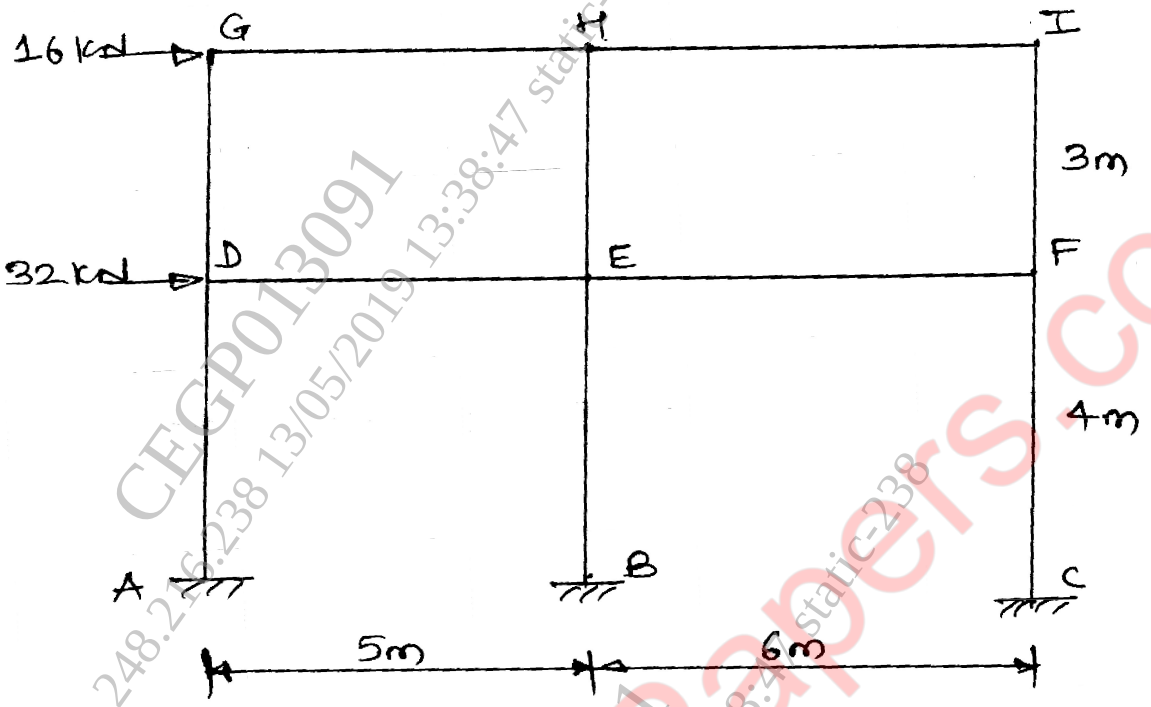
Q4) Analyze the frame by stiffness matrix method. Draw BMD. **[16]**



Q5) A cantilever beam of span 1.2m with varying moment of inertia, carries a concentrated load as shown. Determine deflection at free end. Take 4 nodal points. **[8]**



b) Analyze frame by portal frame method. Determine approximate values of moment. Shear force and axial force in each member. **[10]**



OR

Q6) a) A simply supported beam of span 10m is carrying ud1 of 6 KN/m over the entire span. Determine deflection at nodal points, take fine nodes. Take EI= constant. **[8]**

b) Determine the approximate values of moment, shear and axial forces in members of frame as given in Q5b), using cantilever method. **[10]**

Q7) a) Explain plain stress and plain strain problem with example. **[8]**

b) Explain the principal of minimum potential energy. **[8]**

OR

Q8) a) Determine the shape functions for four noded rectangular element using Lagrange polynomial. **[7]**

b) Explain the terms **[9]**

i) Nodes

ii) Discretization

iii) 2D Pascal Triangle

✡ ✡ ✡