Total No. of Questions : 8]

SEAT No. :

P3338

[Total No. of Pages : 4

[5353]-504

T.E. (Civil)

STRUCTURAL ANALYSIS - II

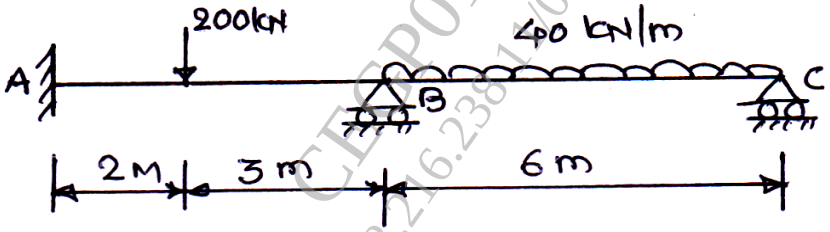
(2015 Pattern) (Semester - I)

Time : 2½ Hours] *[Max. Marks : 70*

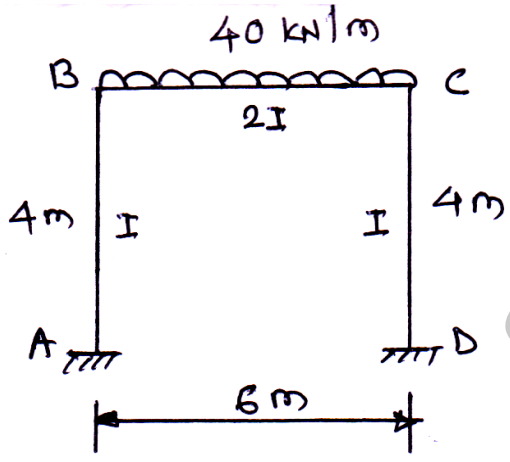
Instructions to the candidates:

1) ***Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.***
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 beam by slope deflection method. Draw B.M.D. Take EI = constant. **[10]**



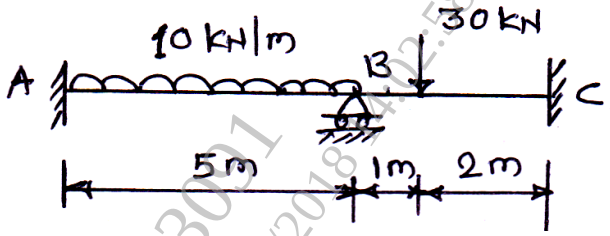
b) Analyze the frame as shown by moment distribution method. Draw B.M.D. **[10]**



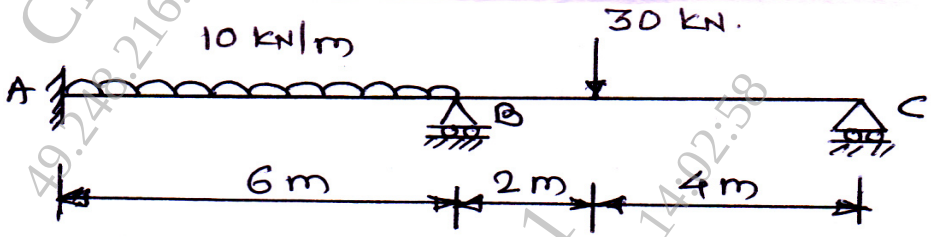
OR

P.T.O.

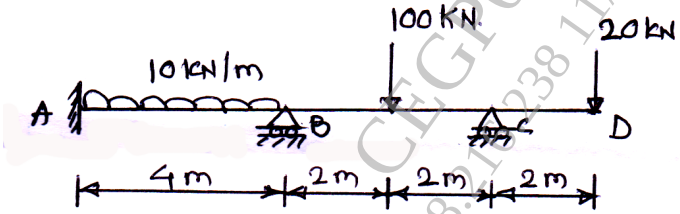
Q2) a) Analyze the continuous beam by moment distribution method. Draw S.F.D. and B.M.D. **[10]**



b) Analyze the beam by flexibility method if support B sink by 25mm. Take EI = 3800kN.m^2. **[10]**

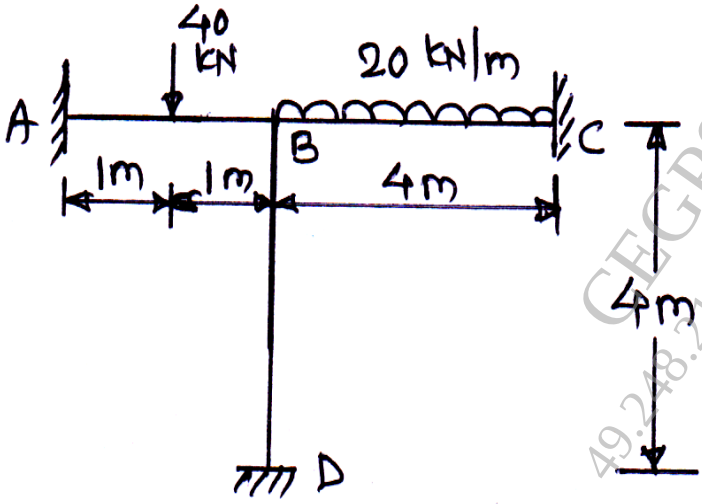


Q3) Analyze the beam by stiffness matrix method. Draw B.M.D. **[16]**

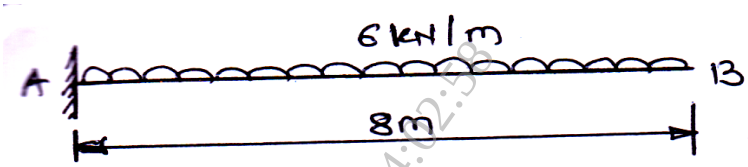


OR

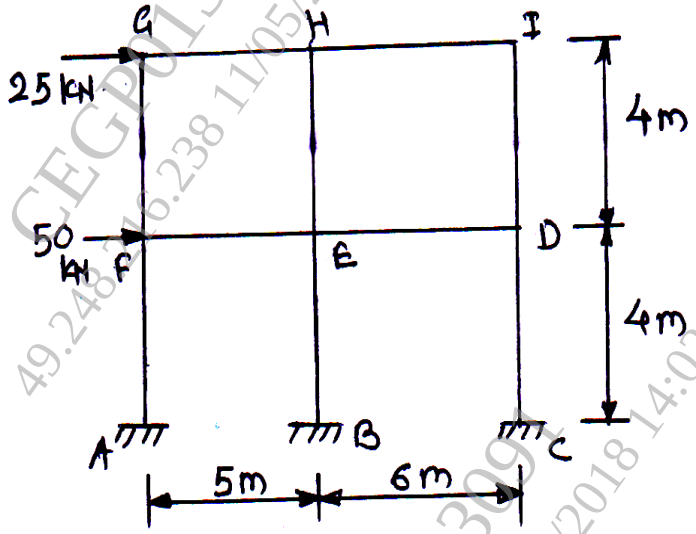
Q4) Analyze the frame by stiffness matrix method. Draw B.M.D. **[16]**



Q5) a) Find the nodal deflection for the beam by using FDM. Take 5 Nodes. **[6]**

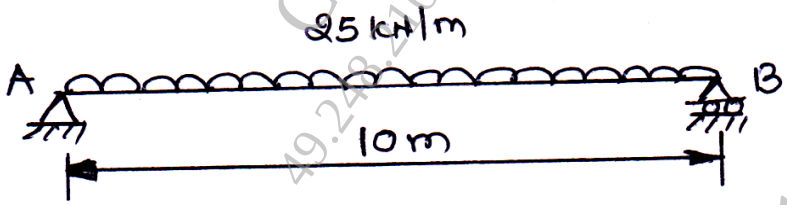


b) Analyze the frame by portal method. Draw B.M.D. **[12]**



OR

Q6) a) Find the maximum deflection for the beam by using FDM. Take 3 Nodes. **[6]**



b) Analyze the frame shown in fig. Q.5 (b) by cantilever method. Draw B.M.D. **[12]**

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

b) Explain the concept of Pascals Triangle. **[4]**

c) Define CST and LST. **[4]**

OR

Q8) a) Define : **[8]**

i) Isoparametric element

ii) Subparametric element

iii) Superparametric element

iv) Shape function

b) Explain the concept of Discretization with example. **[4]**

c) Derive the equation for minimum potential energy. **[4]**