Total No. of Questions : 8]

SEAT No. :

P3953

[Total No. of Pages : 3

[5253]-504

T.E. (Civil) (Semester - I)

STRUCTURAL ANALYSIS - II

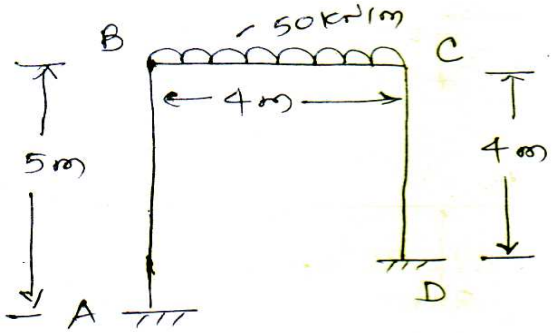
(2015 Pattern)

Time : 2½ Hours] *[Max. Marks : 70*

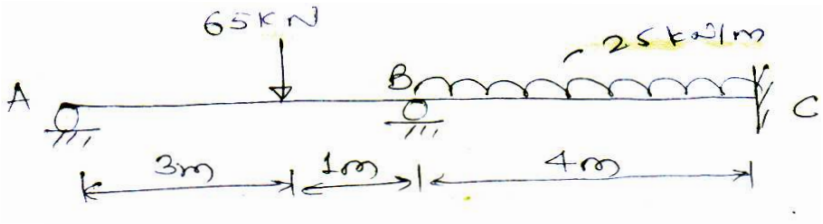
Instructions to the candidate :

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 & indicate clearly.*
4) *Use of electronic calculator is allowed.*

Q1) a) Analyse the frame by slope deflection method and draw BMD. **[10]**

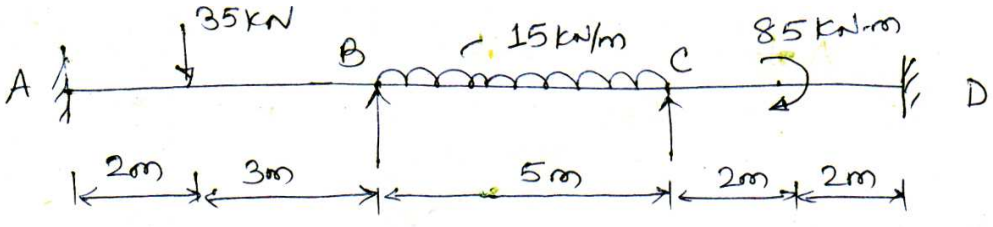


b) Analyse the continuous beam by flexibility method, Draw BMD. **[10]**



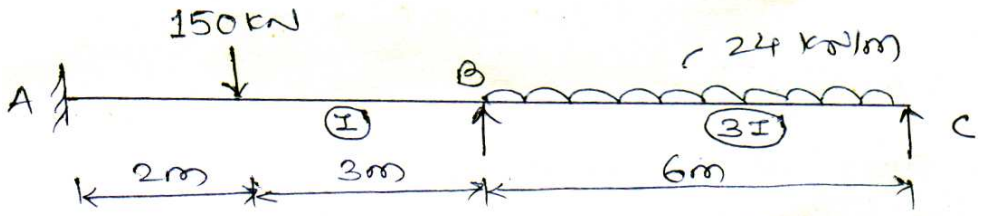
OR

Q2) a) Analyse the continuous beam by moment distribution method, Draw BMD **[10]**

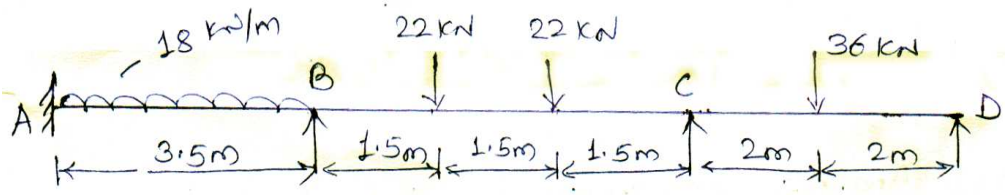


P.T.O.

b) Analyse continuous beam by slope deflection method, Draw BMD. **[10]**

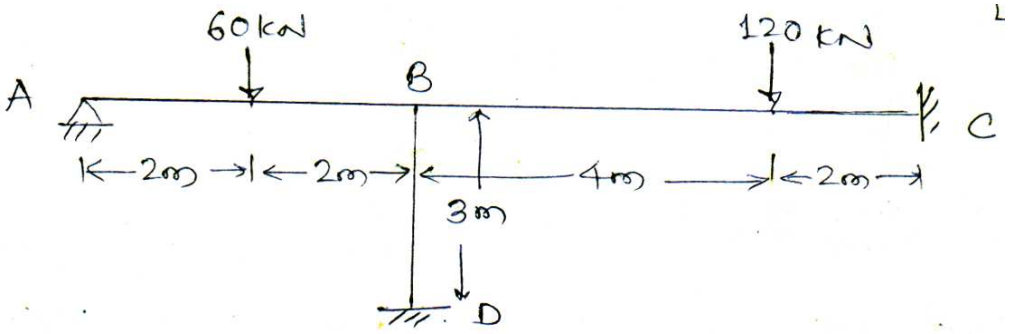


Q3) a) Analyse the continuous beam by stiffness matrix method, Draw BMD. **[16]**

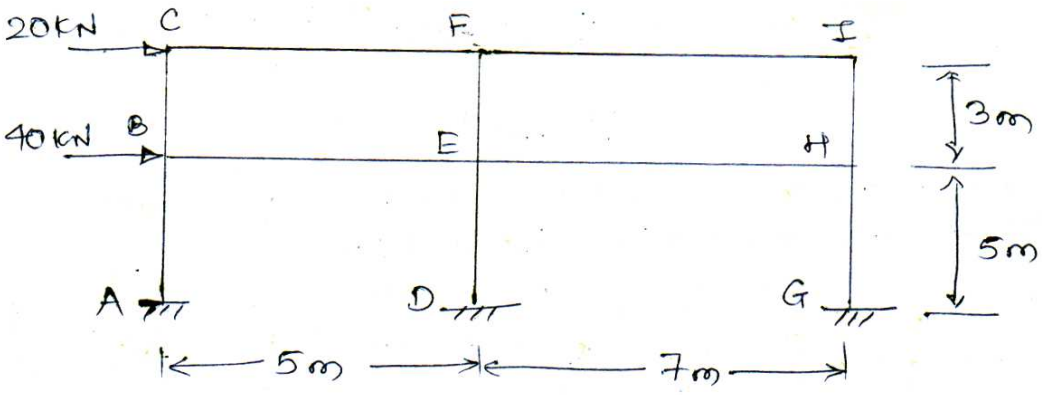


OR

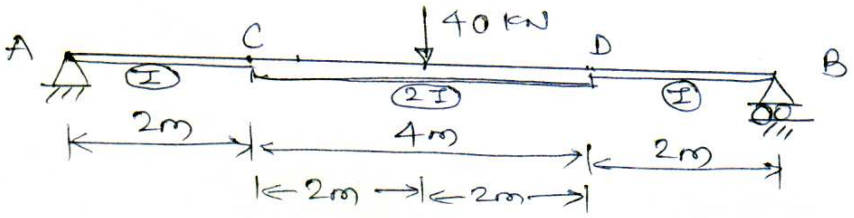
Q4) Analyse the frame by stiffness matrix method Draw BMD. **[16]**



Q5) a) Determine values of moment, shear and axial forces in members of the frame loaded and supported as shown using portal frame method draw BMD **[10]**



b) Determine deflection at the centre of beam using finite difference method. Take 5 nodes. **[8]**



OR

Q6) a) Analyse the frame given in Q5 (a) by cantilever method. Draw BMD.**[10]**

b) Determine maximum deflection for a cantilever Beam of 2m span, carrying concentrated load of 80kN at free end. Take 4 nodes. **[8]**

Q7) a) Explain principal of minimum potential energy. **[8]**

b) Derive expression for shape function for a two noded bar element taking natural co-ordinate. **[8]**

OR

Q8) a) Determine shape function for a CST element in terms of natural co-ordinate system. **[8]**

b) Explain plain stress & plain strain problem. **[8]**