Total No. of Questions :8]

SEAT No. :

P1682

[Total No. of Pages :4

[5058]-302

T.E. (Civil)

STRUCTURAL ANALYSIS - II

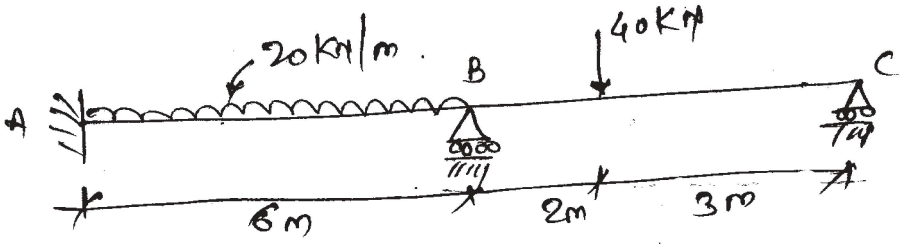
(2012 Course) (Semester - I)

Time : 2½ Hours] *[Max. Marks :70*

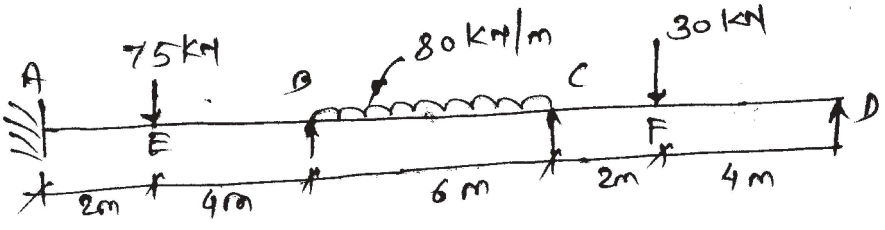
Instructions to the candidates:

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

Q1) a) Analyse the beam by slope deflection method. Draw BMD & SFD. Take EI = 3900 kN-m^2. The support 'B' sinks by 30mm. **[10]**



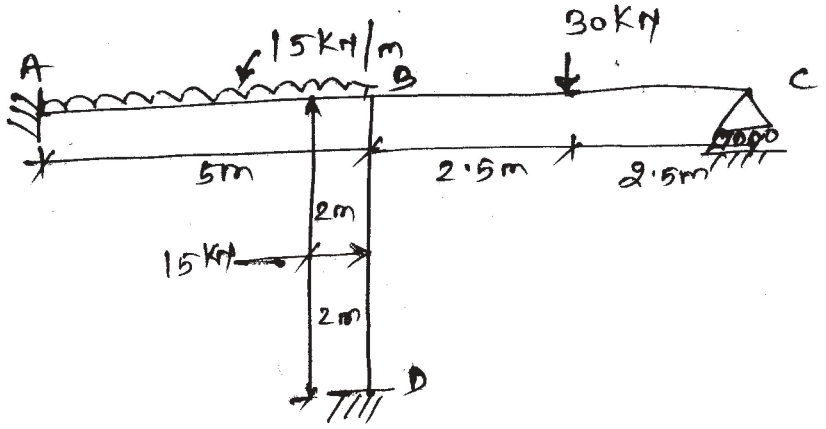
b) Analyse the continuous beam shown in figure using flexibility method & draw the bending moment diagramme. **[10]**



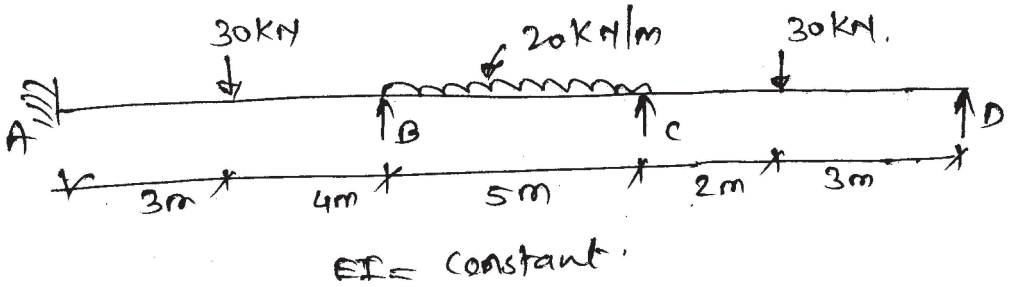
OR

P.T.O.

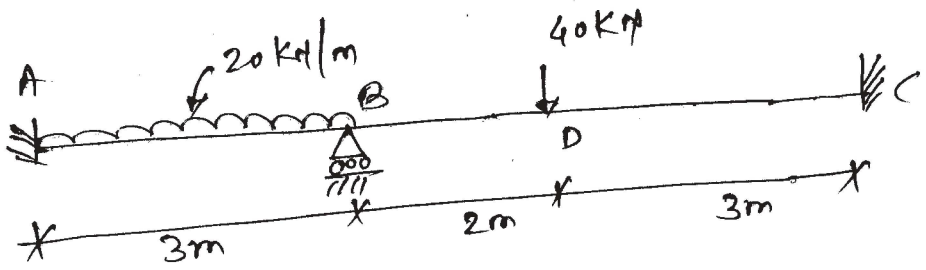
Q2) a) Analyse the frame as shown in figure. EI is constant. Use slope deflection method. **[10]**



b) Analyse the continous beam shown in figure by moment distribution method. Draw BMD & SFD. **[10]**

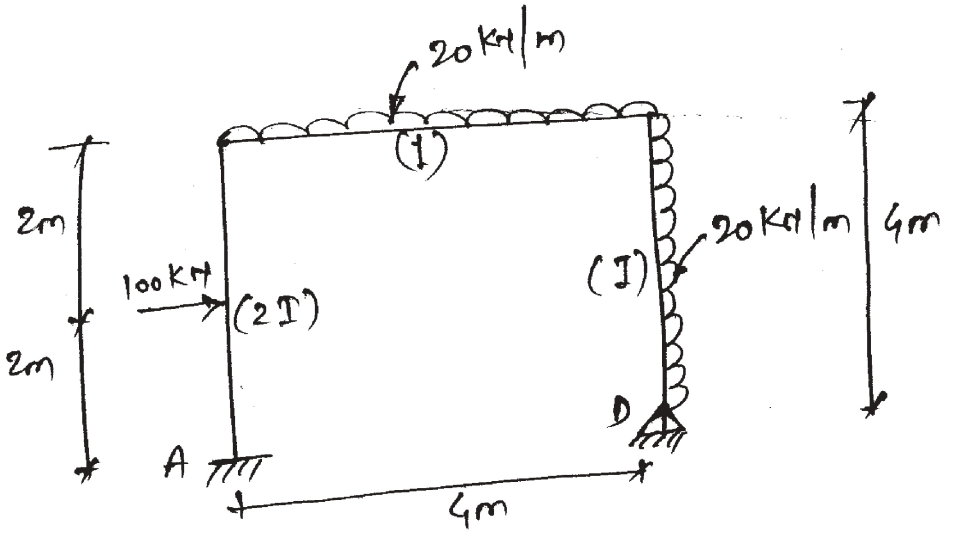


Q3) Analyse the beam shown by stiffness matrix method. Draw BMD & elastic curve. EI = constant. **[16]**

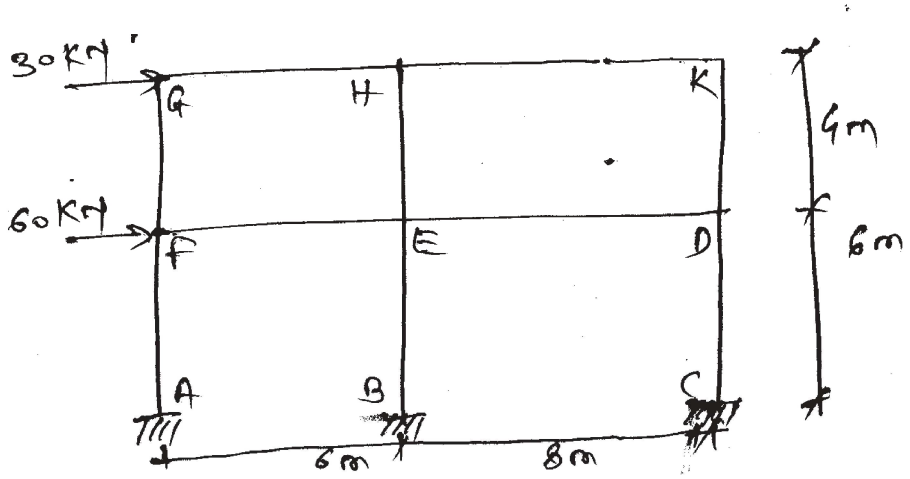


OR

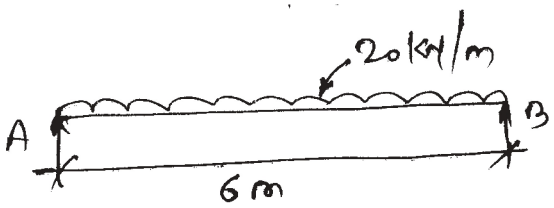
Q4) Analyse the frame by stiffness matrix method & sketch BMD. **[16]**



Q5) a) Determine the approximate values of moment, shear & axial forces in member of the frame loaded & supported as shown in figure using cantilever method of analysis. **[12]**



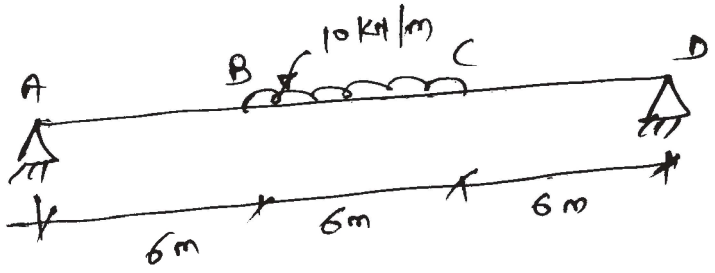
b) A simply supported beam of length 6m is loaded as shown in figure. Determine the maximum deflection. **[6]**



OR

Q6) a) Analyse the frame as shown in Q.5 (a) by portal method. **[10]**

b) The beam is loaded & supported as shown in fig. Determine deflection at nodal points. Take 3 nodes. **[8]**



Q7) a) Explain the terms: **[8]**

i) Constant strain Triangle.

ii) Linear strain Triangle.

iii) Higher order elements.

iv) Nodes.

b) Explain shape function for Quadratic rectangular element. **[8]**

OR

Q8) a) Explain shape function & state properties of shape function. **[8]**

b) Differentiation between Axisymmetric & Isoparametric elements. **[8]**

EEE