

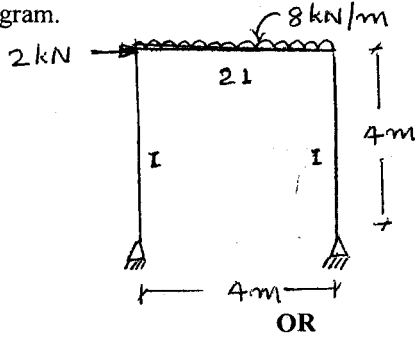
B.Tech. Degree V Semester (Supplementary) Examination
June 2008

CE 502 ANALYSIS OF STRUCTURES II
(1999 Scheme)

Time: 3 Hours

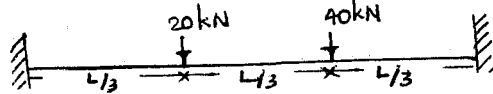
Maximum Marks: 100

- I a) What are the advantages and disadvantages of indeterminate structures? (4)
 b) Analyse the portal frame shown in figure by strain energy method. Draw the bending moment diagram. (16)

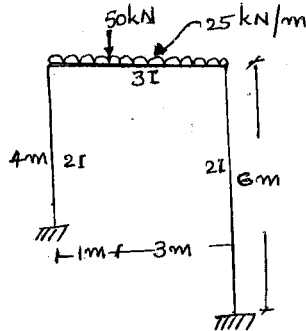


OR

- II a) State Claperon's theorem of three moments and its limitations. (5)
 b) Draw SFD and BMD for the fixed beam shown in figure. Use the theorem of three moments. (15)

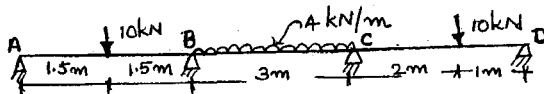


- III Analyse the frame given in figure by slope deflection method and draw bending moment diagram. (20)

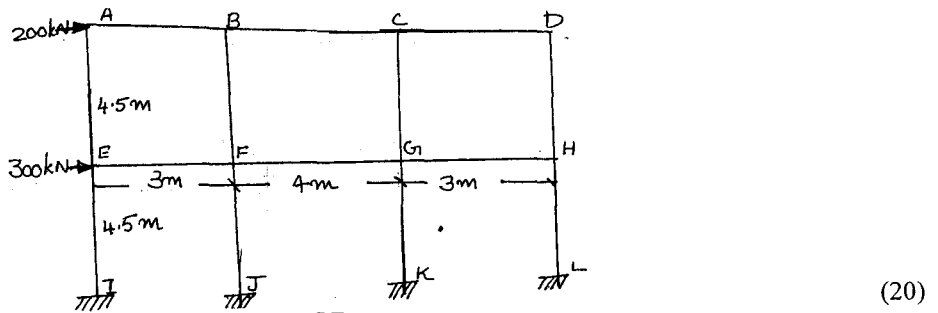


OR

- IV Analyse the continuous beam shown in figure and plot BMD by moment distribution method. Support C sinks by 10mm. Take $E = 2 \times 10^5 \text{ N/mm}^2$ and $I = 2.4 \times 10^6 \text{ mm}^4$. (20)

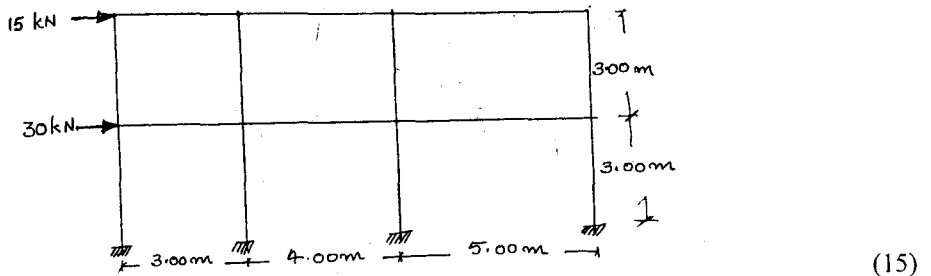


V Analyse the frame shown in figure using Portal method and sketch the BMD. (20)



OR

VI a) Explain the patterns of distributing live loads on building frames to obtain max. sagging moment at mid span and max. hogging moment at supports of beams. (5)
 b) Analyze the frame shown in figure by cantilever method and draw the bending moment diagram. (15)



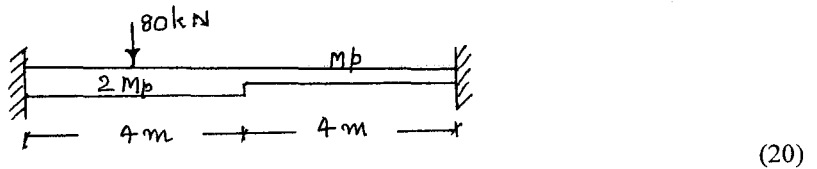
VII Locate the shear centre of the channel section shown in the figure. (20)



OR

VIII A curved beam is in the form of full continuous circle in plan with a radius of 5 m and is supported continuously on six columns. The beam carries a uniformly distributed load of 3kN/m length inclusive of self weight. Determine the shear force, bending moment and twisting moment at salient points and plot the diagrams. (20)

IX Determine the plastic moment capacity of the beam if the loads shown in figure are working loads. Take load factor = 1.5 (20)



OR

X a) What are the assumptions in plastic theory of analysis of structures? (5)
 b) Find the collapse load for the portal frame shown in figure. (15)

