

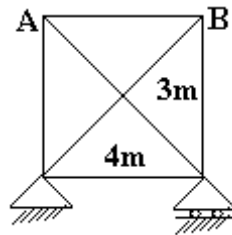
III B.Tech II Semester Supplementary Examinations, January 2005
STRUCTURAL ANALYSIS-II
(Civil Engineering)

Time: 3 hours

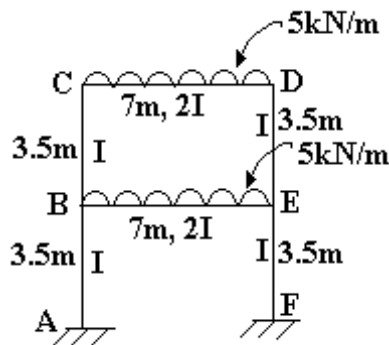
Max Marks: 80

Answer any FIVE Questions
 All Questions carry equal marks

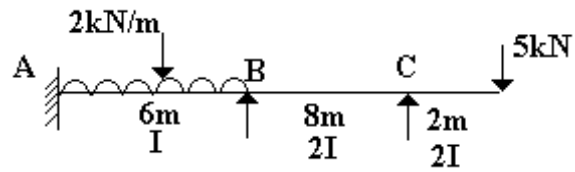
1. A symmetrical three hinged circular arch has a span of 16m and a rise to the central hinge of 4m. It carries a vertical load of 20 kN at 5m from the left hand end. Find (i) the magnitude of the thrust at the springings (ii) the reactions at the supports, and (iii) the maximum +ve and -ve B.M.
2. A suspension cable, stiffened by a three hinged girder has 100m span and 10m dip. The girder carries a load of 10 kN/m. A live load of 15kN rolls from left to right. Determine (i) the maximum BM anywhere in the girder, and (ii) the maximum tension in the cable.
3. Find the forces in all the members of the truss shown in figure. The member AB is 20 mm short in length, 'AE' is same for all the members.



4. Analyse the frame shown in figure by Kani's method and draw the BMD.



5. Analyse the continuous beam shown in figure by slope-deflection method and draw the SFD and BMD. Support B sinks by 2 mm. Take $E=210\text{kN/mm}^2$ and $I=2\times 10^8\text{ mm}^4$.



6. Solve the problem in question number 5 by moment distribution method.
7. Solve the problem in question number 5 by stiffness method.
8. Solve the problem in question number 5 by flexibility method.
