R18

ANURAG Engineering College
(An Autonomous Institution)
III B.Tech I Semester Supplementary Examinations, June/July-2024
STRUCTURAL ANALYSIS – II
(CIVIL ENGINEERING)

Time: 3 Hours | Max. Marks: 75

Section – A (Short Answer type questions)   (25 Marks)
Answer All Questions

		Course Outcome	B.T Level	Marks
1.	Explain about static indeterminacy and kinematic indeterminacy?	CO1	L1	3M
2.	What are the advantages of arches? Write the procedure to determine horizontal reaction for 2 hinged arches.	CO1	L1	2M
3.	What is the advantage of moment distribution method over slope deflection method?	CO2	L1	2M
4.	Define carry over moment and Distribution factor?	CO2	L1	3M
5.	Define displacement factor in Kani's Method?	CO3	L1	2M
6.	Outline the purpose of Kani's method in analysing of structures?	CO3	L1	3M
7.	Explain why stiffness method is more suitable that flexibility method?	CO4	L1	2M
8.	What is called Space Frame? Explain the difference between plane frame & Space Frame.	CO4	L1	3M
9.	Briefly write the procedure for generating flexibility matrix for trusses?	CO5	L1	2M
10.	Indicate the matrix form of Global Stiffness Matrix and mention each term in it?	CO5	L1	3M

Section B (Essay Questions)
Answer all questions, each question carries equal marks.   (5 X 10M = 50M)

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11. A)	A simply supported beam AB of length L carries a uniformly distributed load of W per unit run. Find the slope at each support and the deflection at center of the beam, by using Unit load method.	CO1	L3	10M

OR

B)	A Two hinged parabolic arch is carrying a udl of 30kN/m over the left portion and a PL of 120kN at right quarter span. The central rise is 6m. Determine horizontal thrust, Normal thrust, shear force and bending moments at a section 10m from right support? Span of arch 30m.	CO1	L3	10M

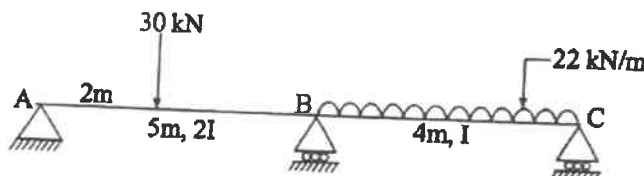|				
12. A)	Analyse the frame shown in figure by Moment Distribution Method	CO2	L3	10M

OR
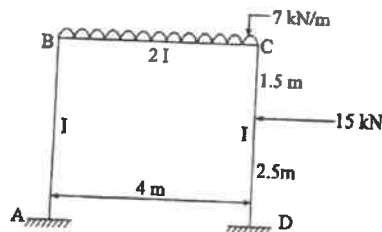
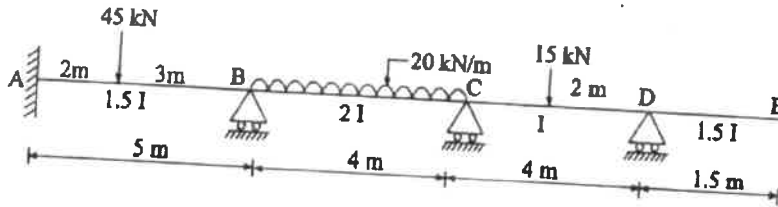|				
B)	Analyse the continuous beam shown in figure by Moment Distribution Method	CO2	L3	10M

13. A) Analyse the continuous beam shown in figure using Kani's Method?   CO3   L3   10M
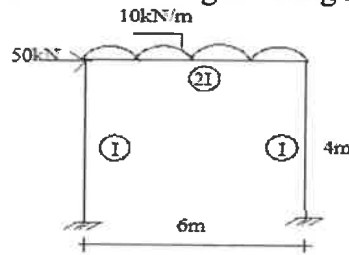

OR

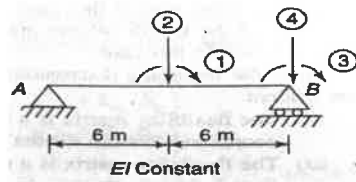B) Analyse the continuous frame shown in figure using Kani's Method?   CO3   L3   10M

14. A) Develop the flexibility matrix for the simply supported beam AB with reference to the coordinates?   CO4   L3   10M
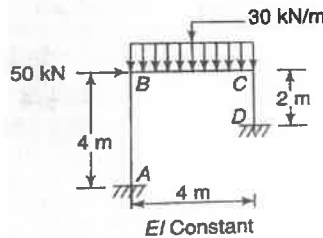

OR

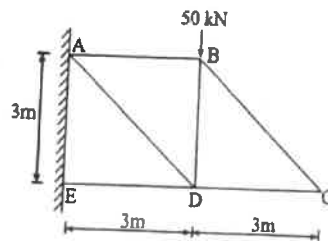B) Analyse the portal frame ABCD as shown using Displacement Method?   CO4   L3   10M

15. A) Analyse the truss shown in figure using Flexibility Matrix Method?   CO5   L3   10M

OR

B) Analyse the truss shown in figure using Stiffness Method. All dimensions are in mm.   CO5   L3   10M