Regulation R18 *Subject code: 2P5AA*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A' Grade)

B.Tech V Semester Supplementary Examinations, January 2023

STRUCTURAL ANALYSIS - II

(CIVIL ENGINEERING)

Maximum Marks: 70 06-01-2023 Duration: 3 hours

Part-A

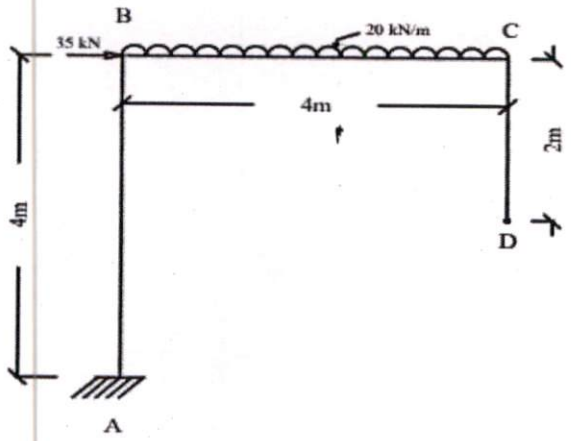
All the following questions carry equal marks (10x2M=20 Marks)

1 Define Static Indeterminacy?
2 Write formula for radial shear in two hinged arch?
3 Two hinged arches have degree of indeterminacy.
4 What is the maximum bending moment for point load 'W' kN acting on mid span, whose length is L.
5 What is the Fixed end moment Mab & Mba for Point load placed at mid span.
6 Find the Fixed end moment for span AB=5m carrying udl 12/m in Kani's method?
7 Draw Single bay- Double storey frame.
8 Name types of matrix methods of analysis.
9 Name Approximate method of analysis.
10 Define ILD?

Part-B

Answer All the following questions. (5X10M=50Marks)

11. Determine the vertical and horizontal displacement at the free end 'D' in the frame shown in fig. Take EI=12×[10]^3 N-mm^2 Use Castigliano's theorem. [10]

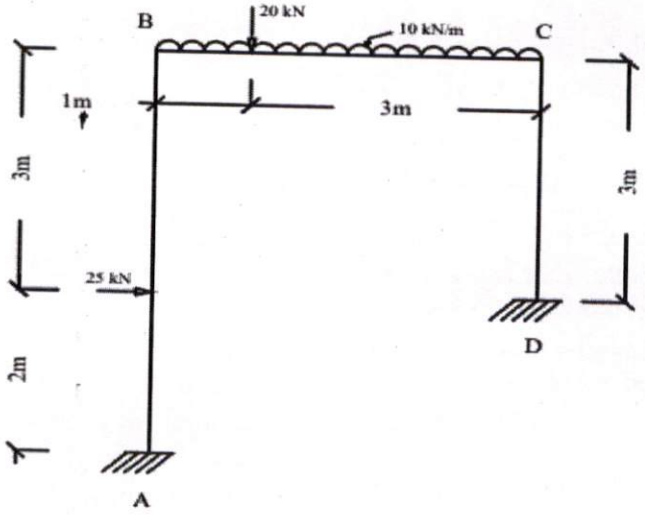


[10]

OR

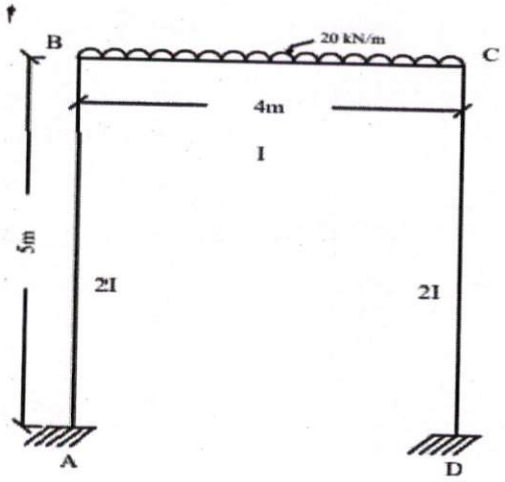
12. A two hinged parabolic arch of span 36 m and central rise 8 m carries a uniformly distributed load of 32 kN/m over the left half of the span. Determine the position and value of maximum bending moment. Also find the normal thrust and radial shear at the section. Assume that the moment of inertia at a section varies as secant of the slope at the section. [10]

13. Using slope deflection method Analyse the frame loaded and supported as shown in fig. Also draw BMD and deflected shape of frame. [10]

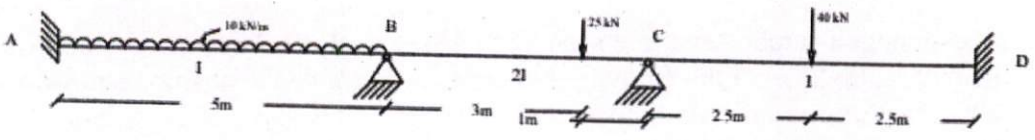


OR

14. Analyse the Non- sway frame by using Moment distribution method and draw BMD. [10]

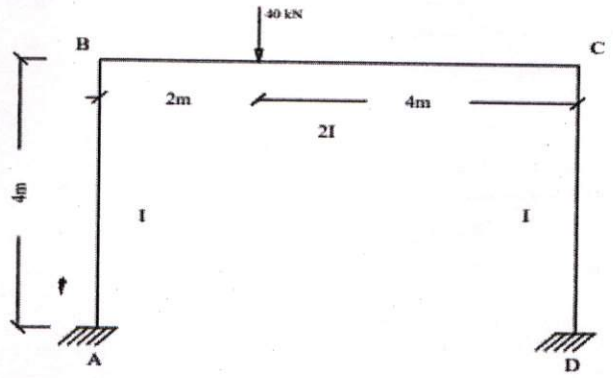


15. Analyse the continuous beam show in fig. using Kani's method. [10]

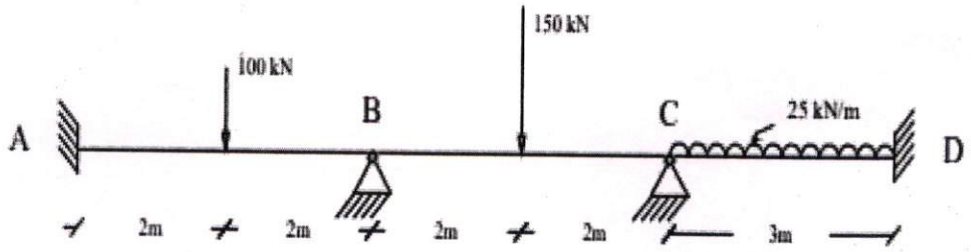


OR

16. Analyse the single bay-single storey frame using kani's method .Whose both ends are fixed as shown in figure. [10]

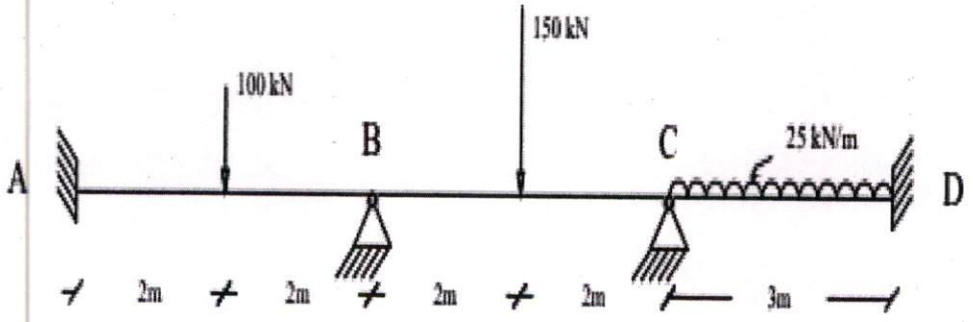


17. Using Stiffness matrix method analyse the Continuous beam and draw B.M.D. [10]

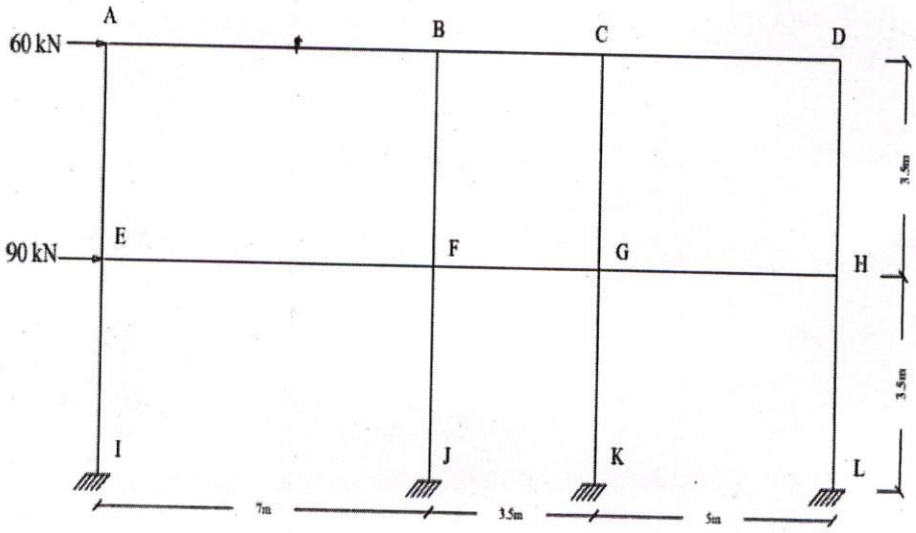


OR

18. Using Flexibility matrix method analyse the Continuous beam and draw B.M.D. [10]



19. Analyse the Frame by portal method. [10]



OR

20. Analyse the Frame by Cantilever method. [10]