



B.Tech V Semester Supplementary Examinations, February 2024

STRUCTURAL ANALYSIS - II
(CIVIL ENGINEERING)

Maximum Marks: 70

Date: 15.02.2024 Duration: 3 hours

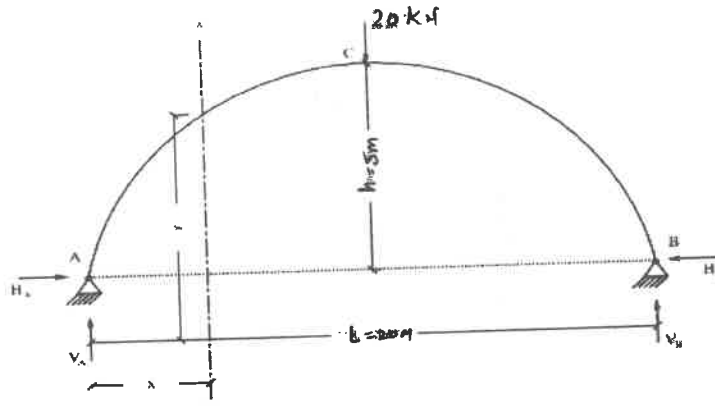
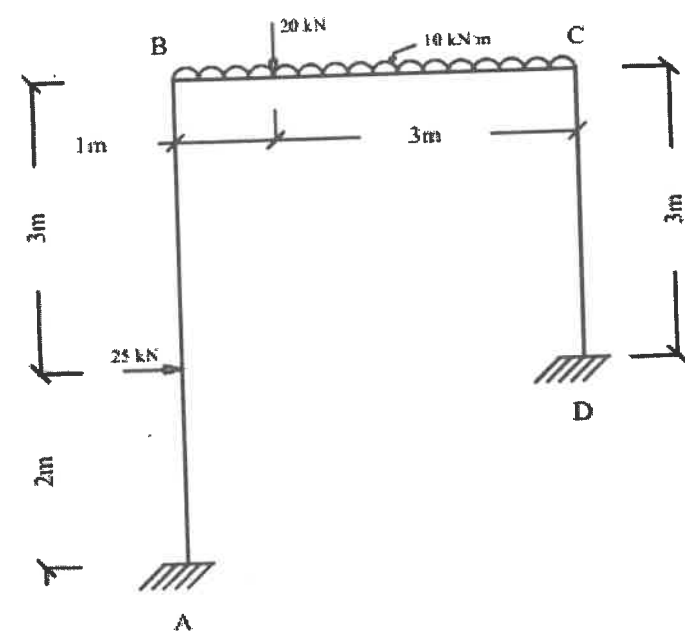
- Note:**
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 10 marks. Answer all questions in Part A.
 3. Part B consists of 5 Units. Total 10 questions it consists.
 4. Part-B each question carries 12 marks and may have a, b, c, d as sub questions.

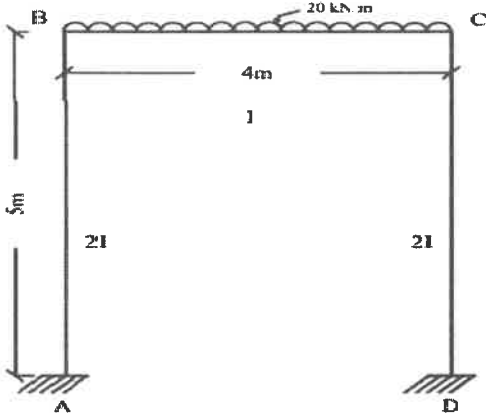
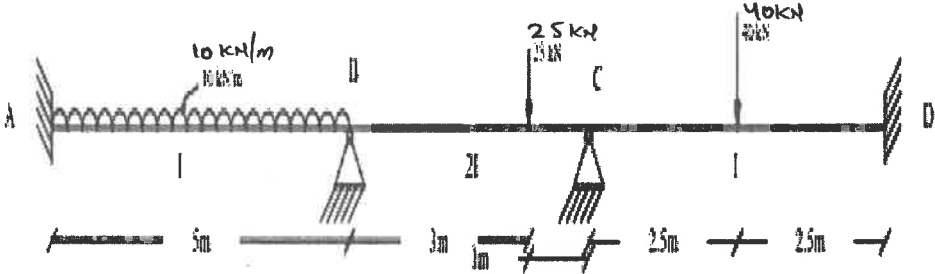
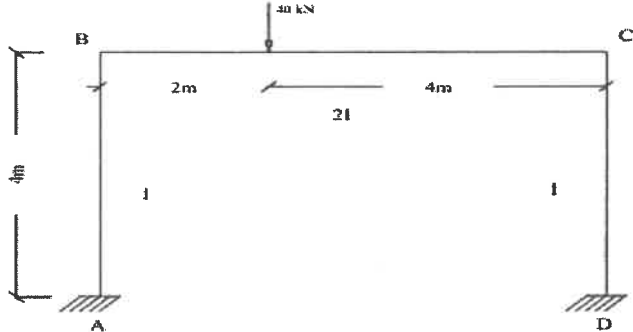
Part-A

All the following questions carry equal marks		(10X2M=20 Marks)	CO	Bloom Tx
1	Illustrate Kinematic Indeterminacy?		1	L2
2	Outline two hinged arch with udl W/m on total span.		1	L2
3	State Castigliano's second theorem.		2	L2
4	Compare one difference between Sway & Non-sway frame.		2	L2
5	What are the conditions to be a Non-Sway Frame?		3	L1
6	Fixed end moment for span carrying udl W/m in Kani's method?		3	L3
7	Develop the Single bay- Double storey?		4	L3
8	List types of matrix methods of analysis.		4	L1
9	Classify Approximate method of analysis.		5	L2
10	Define ILD.		5	L1

Part-B

Answer All the following questions.		(5X10M=50Marks)		
11	A parabolic two hinged arch carrying UDL of intensity 'W' Kn/m throughout its span as shown in fig. Find the equation of horizontal thrust. [10]	1	L5	

OR			
12	<p>A Two Hinged Parabolic Arch of span 20m and central rise 5m carries point load of 20kN at the crown. Find the reactions at support and draw B.M.D for the Arch. [10]</p> 	1	L5
13	<p>Using slope deflection method Analyse the frame loaded and supported as shown in fig. Also draw BMD and deflected shape of frame. [10]</p> 	2	L4
OR			
14	<p>Analyse the Non- sway frame by using Moment distribution method and draw BMD. [10]</p>	2	L4

			
15	<p>Analyse the continuous beam show in fig. using Kani's method. [10]</p> 	3	L4
OR			
16	<p>Analyse the single bay-single storey frame using kani's method . Whose both ends are fixed as shown in figure. [10]</p> 	3	L4
17	<p>Using matrix method of analysis, calculate the final moments in the continuous beam shown in figure. [10]</p>	4	

<p>Diagram of a beam AD with supports at A, B, and C. A is fixed, B and C are roller supports, and D is fixed. A 50 kN point load is at 2m from A. A 100 kN point load is at 2m from B. A 20 kN/m UDL is from C to D (3m).</p>		L4
OR		
<p>18 Analyse the beam shown in figure by using stiffness matrix method. [10]</p> <p>Diagram of a beam AC with supports at A, B, and C. A is fixed, B and C are roller supports. A 30 kN point load is at 3m from A. A 12 kN point load is at 3m from B.</p>	4	L4
<p>19 Analyse the Frame by portal method. [10]</p> <p>Diagram of a frame with columns IJ, JK, KL and beams AB, BC, CD, DE, EF, FG, GH. Loads: 60 kN at A, 90 kN at E. Dimensions: horizontal 7m, 3.5m, 5m; vertical 1.5m, 3.5m.</p>	5	L4
OR		
<p>20 Analyse the Frame by Cantilever method. [10]</p> <p>Diagram of a frame with columns IJ, JK, KL and beams AB, BC, CD, DE, EF, FG, GH. Loads: 40 kN at A, 80 kN at E. Dimensions: horizontal 4m, 6m, 4m; vertical 3.5m, 4.5m.</p>	5	L4