R18 Regulation *Subject code: 2P5AA*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech V Semester Supplementary Examinations, June 2024

STRUCTURAL ANALYSIS - II

(CE)

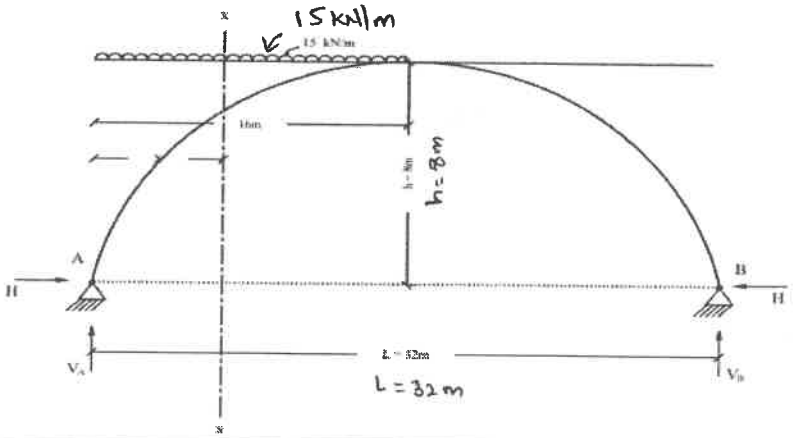
Maximum Marks: 70 Date:19.07.2024 Duration: 3 hours

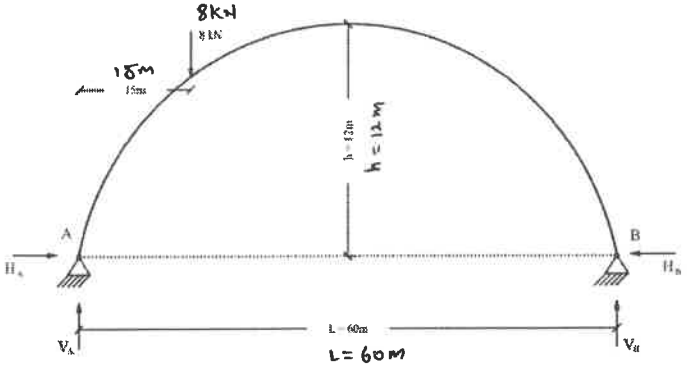
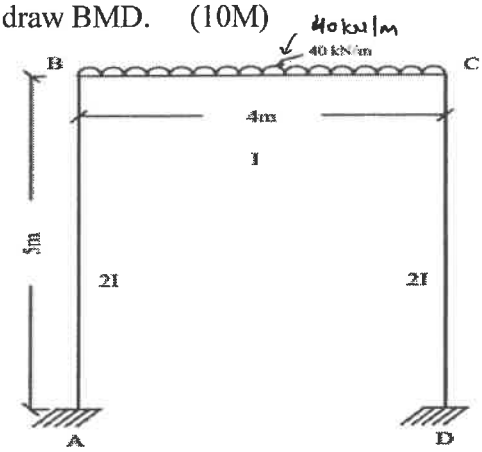
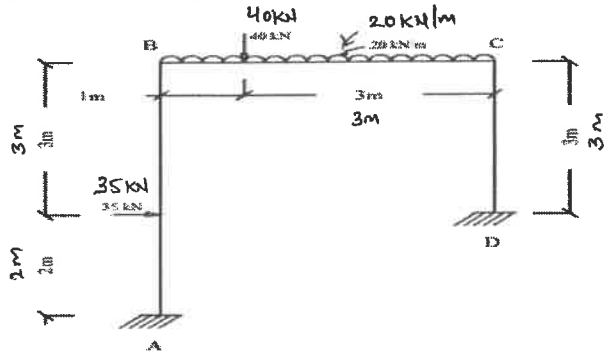
Note: 1.This question paper contains two parts A and B.
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

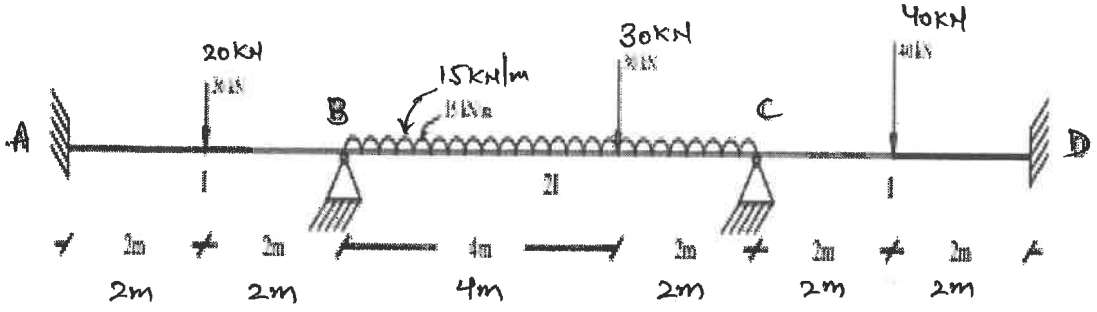
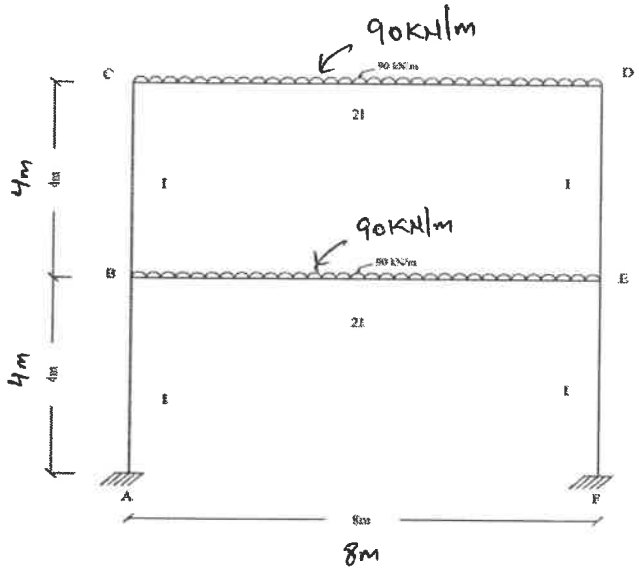
Part-A

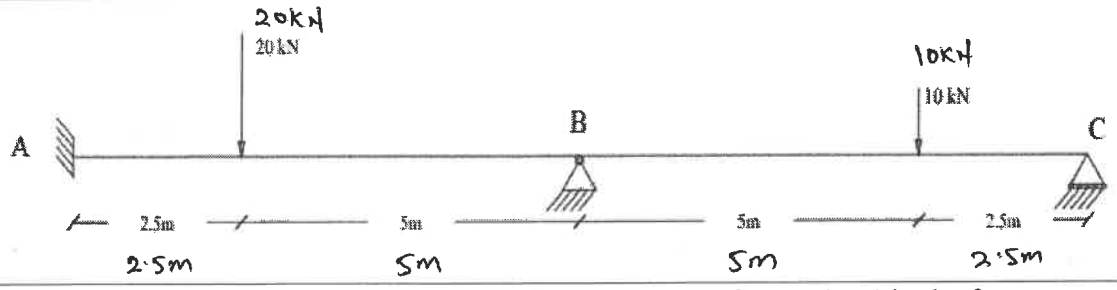
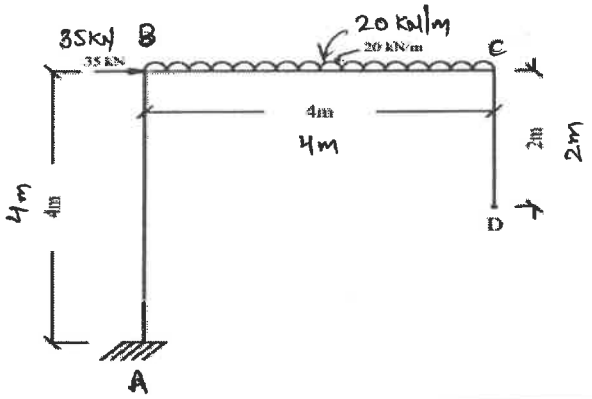
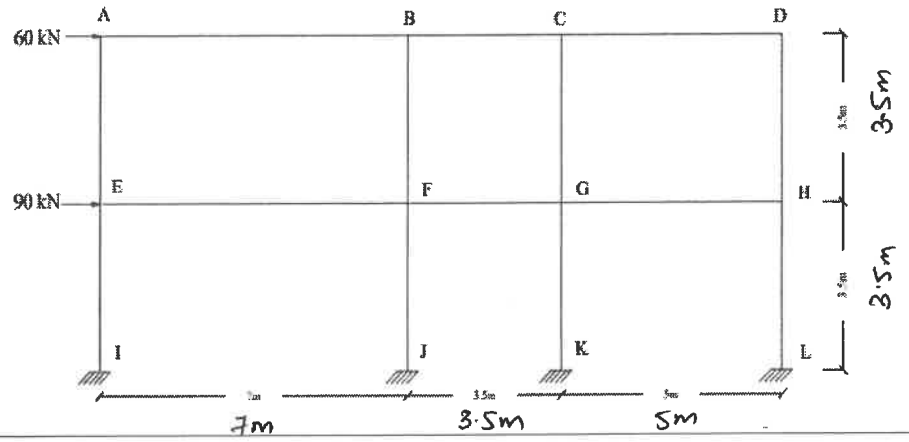
All the following questions carry equal marks (10X2M=20 Marks)		CO	Bloom Tx
1	Indeterminacy is sub classified into?	1	L1
2	Write down the classification of two hinged arch.	1	L1
3	Formula for Normal thrust in two hinged arch.	2	L1
4	What is the maximum bending moment for point load 'W' kN acting on mid span, whose length is L.	2	L1
5	Fixed end moment Mab & Mba for Point load placed at mid span.	3	L1
6	Write general equation for Slope deflection method.	3	L1
7	Define Carry over factor?	4	L1
8	Name types of matrix methods of analysis.	4	L1
9	Draw Single bay-Single storey frame?	5	L1
10	Write Formula for distribution factor.	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)			
11	A Two Hinged Parabolic Arch of span 32m central rise of 8m which carries a UDL of 15KN/m over a left half span. Calculate the support reactions and draw B.M.D. (10M) 	1	L3

	OR		
12	A Two Hinged Parabolic Arch of rise 12m and span 60m carrying a point load 8KN at a distance 15m from left support. (10M) (i) Calculate the horizontal thrust. (ii) Find binding moment at load for the Arch. 	1	L3
13	Identify the given frame is Sway or Non – Sway. Analyse the frame by moment distribution method and draw BMD. (10M) 	2	L4
	OR		
14	Using slope deflection method Analyse the frame loaded and supported as shown in fig. Also draw BMD and deflected shape of frame. (10M) 	2	L4

15	Analyse the continuous beam which is fixed at A & D as shown in fig. Apply kani's method to analyse the given beam. (10M) 	3	L4
	OR		
16	Analyse the single bay-double storey frame carrying UDL of 90KN/m on CD and BE span as shown in fig. Apply kani's method on given frame. (10M) 	3	L4
17	State Castigliano's Second Theorem. Derive the derivation. (10M)	4	L3
	OR		
18	A Continuous beam whose left end is fixed and right end is roller supported as shown in figure. Analyse the beam by matrix method. (10M)	4	L4

			
19	Determine the vertical and horizontal displacement at the free end 'D' in the frame shown in fig. Take EI=12×10^3N-mm^2 Use Castigliano's theorem. (10M) 	5	L3
	OR		
20	Analyse the Frame by Cantilever method. (10M) 	5	L4