R20 Regulation *Subject code:3P5AB*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech V Semester Supplementary Examinations, May 2025

STRUCTURAL ANALYSIS - II

(CE)

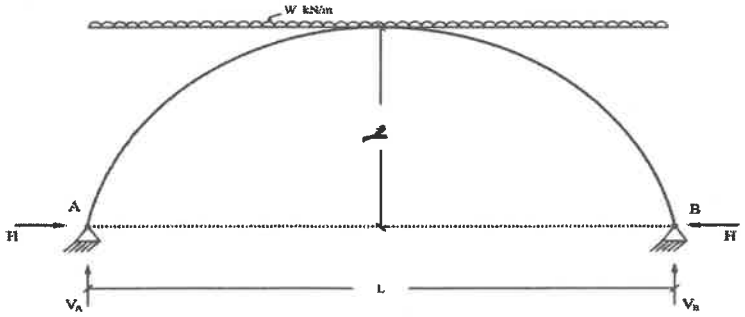
Maximum Marks: 70 Date: 19.06.2025 Duration: 3 hours

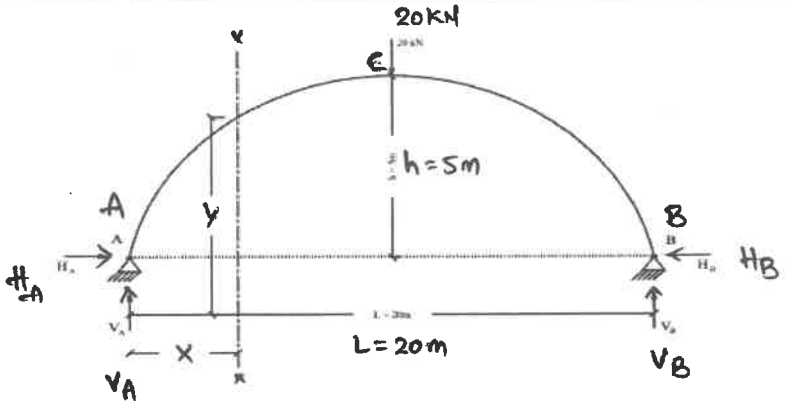
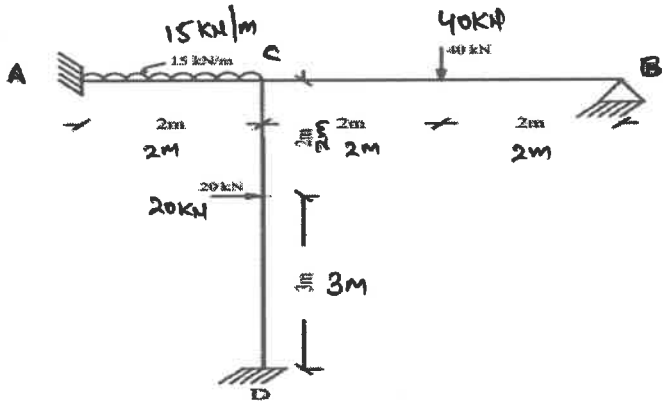
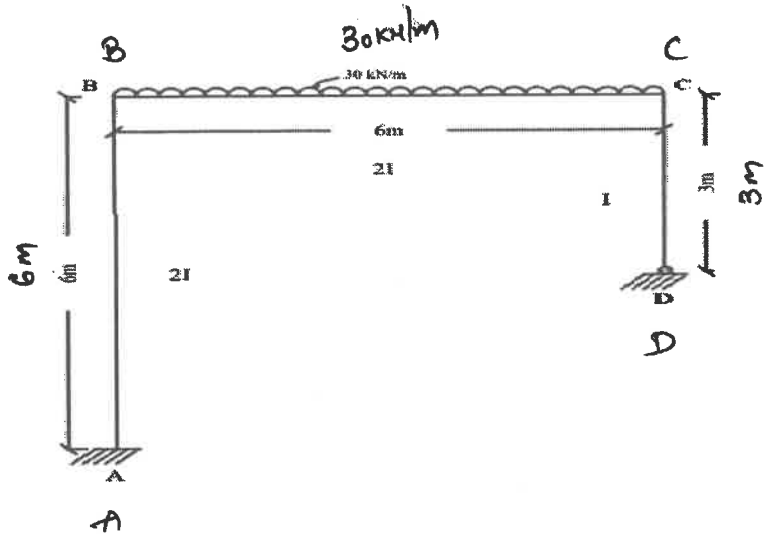
Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

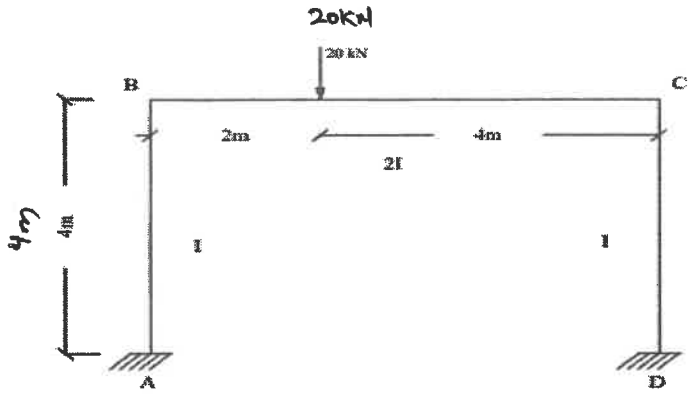
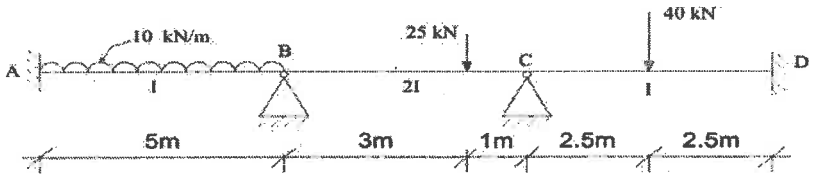
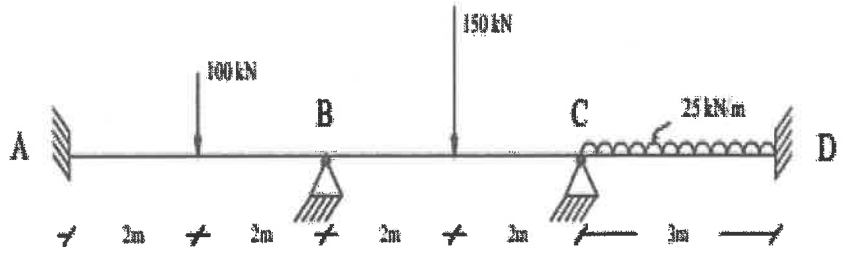
Part-A

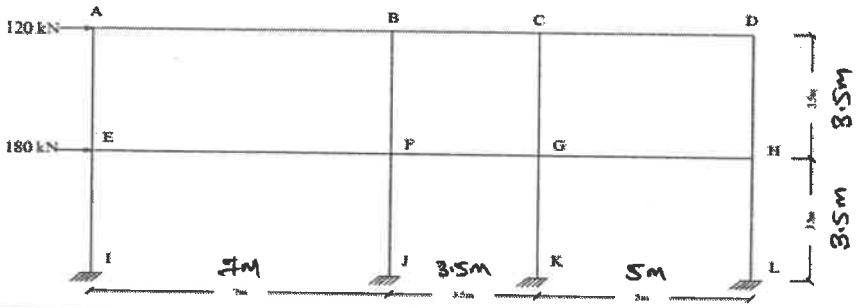
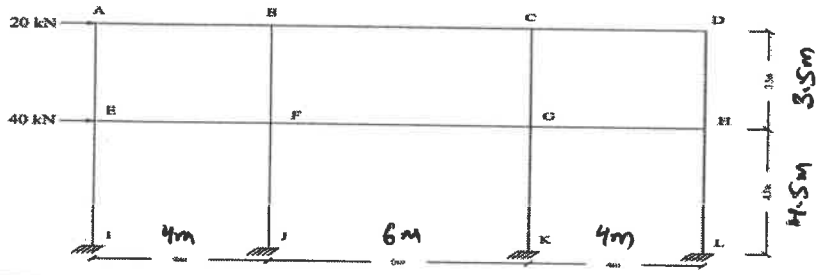
All the following questions carry equal marks (10X2M=20 Marks)		Marks	CO	BTL
1	Define Static Indeterminacy and Kinematic Indeterminacy?	2M	1	L1
2	Define the term Arches & different types of arches?	2M	1	L1
3	Define the term Carry over moment for fixed and hinged support?	2M	2	L1
4	Define Stiffness and formula for beam having far end fixed?	2M	2	L1
5	What is the formula of Displacement factor in frame?	2M	3	L1
6	Write condition for Rotation factor in Kani's method?	2M	3	L1
7	Define stiffness coefficient?	2M	4	L1
8	Write about Flexibility matrix method?	2M	4	L1
9	What are the assumptions made in portal method of analysis?	2M	5	L1
10	State the Muller-Breslau's principle.?	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
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. 	10M	1	L2
	OR			
12	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.	10M	1	L2

				
13	Analyse the frame shown in figure.Draw B.M.D by using slope deflection method. 	10M	2	L2
	OR			
14	Apply sway analysis on the given frame using moment distribution method . 	10M	2	L2

15	Analyse the frame whose both ends are fixed as shown using kani's method and the given frame is single bay-single storey. 	10M	3	L2
	OR			
16	Analyse the three span continuous beam show in fig. using Kani's method. 	10M	3	L2
17	State Castigliano's Second Theorem. Derive the derivation.	10M	4	L2
	OR			
18	Using matrix method of analysis. Analyse the three span continuous beam which is fixed at supports A&D, hinged at B&C shown in figure. 	10M	4	L2

19	Analyse the three bay-Double storey frame, Using Portal method. 	10M	5	L2
	OR			
20	Apply the Approximate method of analysis on given multi-storey frame. 	10M	5	L2