R18 Regulation *Subject code:2P5AA*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech V Semester Supplementary Examinations, April 2026

STRUCTURAL ANALYSIS - II

(CE)

Maximum Marks: 70 Date: 15.04.2026 Duration: 3 hours

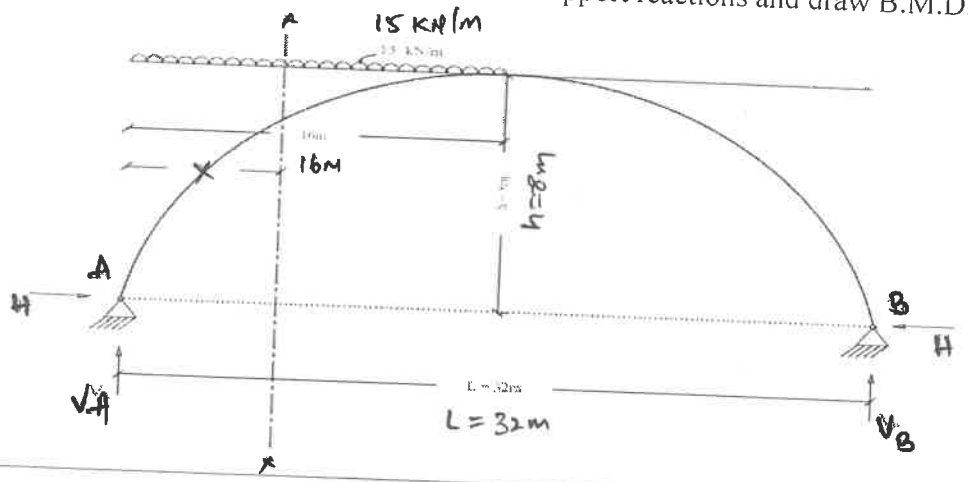
Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

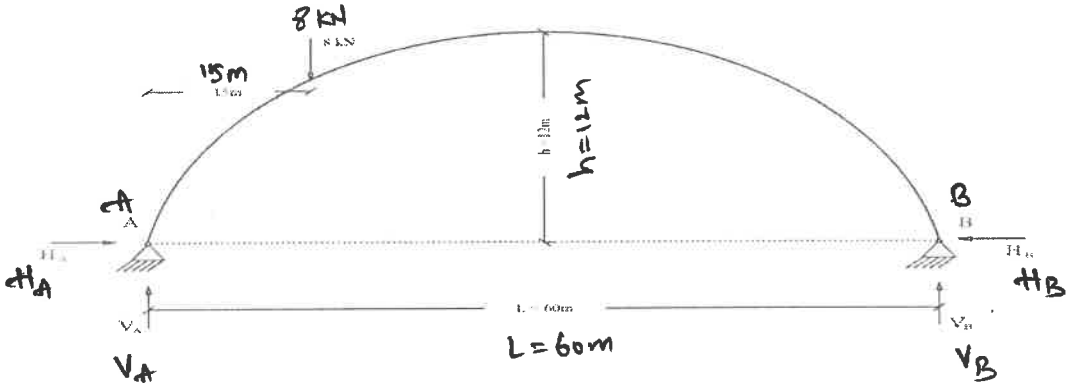
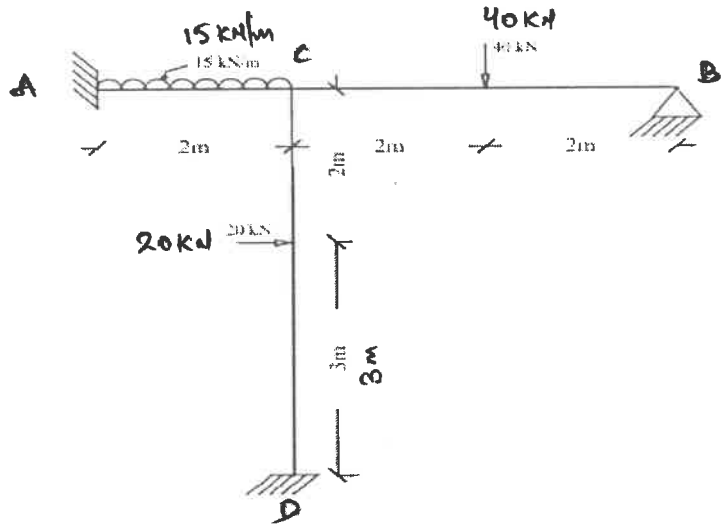
	All the following questions carry equal marks (10X2M=20 Marks)	Marks	CO	BTL
1	Indeterminacy is sub classified into ?	2M	1	L1
2	Write down the classification of two hinged arch.	2M	1	L1
3	Formula for Normal thrust in two hinged arch.	2M	2	L1
4	What is the maximum bending moment formula when point load of 'W' kN is placed eccentrically at a distance 'a' from left support and 'b' from right support.	2M	2	L1
5	Write general equation for slope deflection method.	2M	3	L1
6	Define ILD.	2M	3	L1
7	Define Carry over factor?	2M	4	L1
8	Write formula for Rotation factor?	2M	4	L1
9	Write stiffness condition for continuous beam whose far end is fixed.	2M	5	L1
10	Name Approximate method of analysis.	2M	5	L1

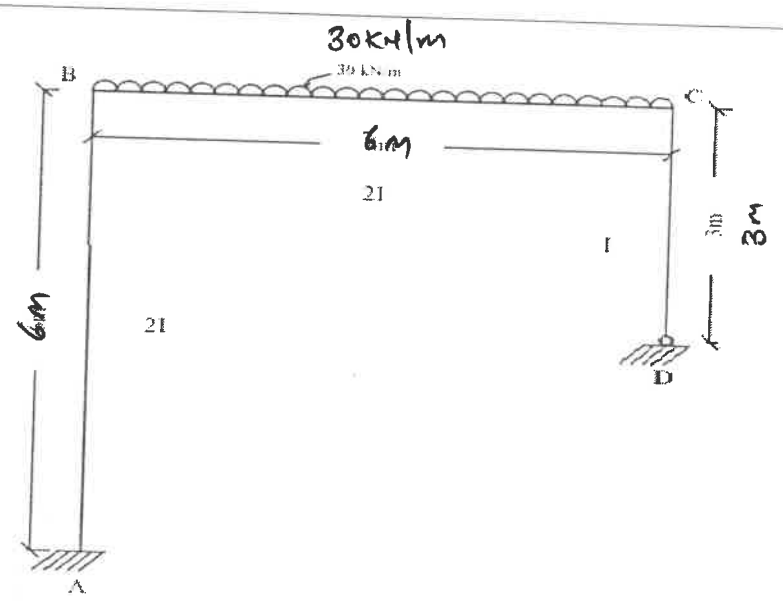
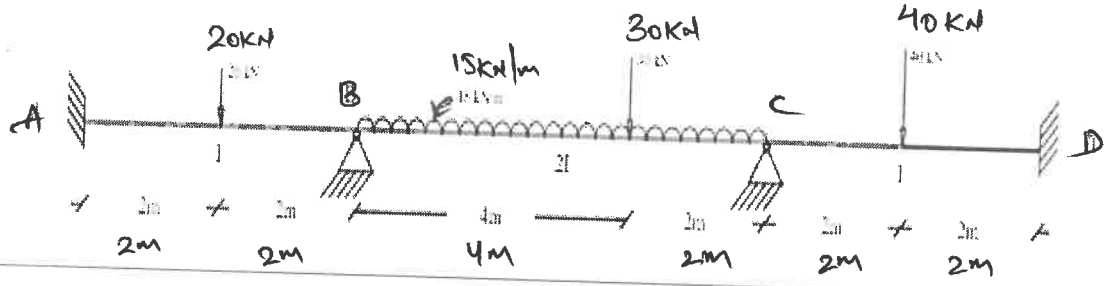
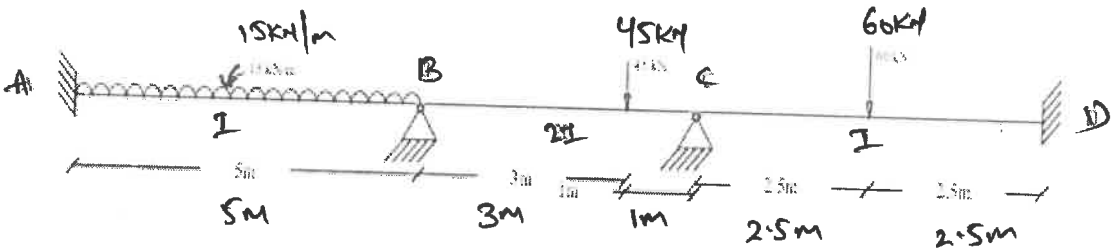
Part-B

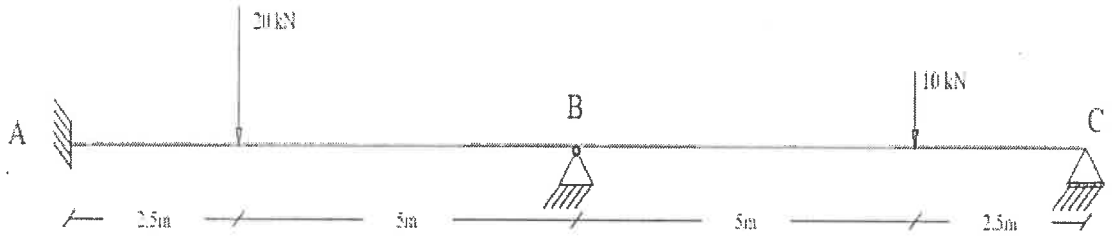
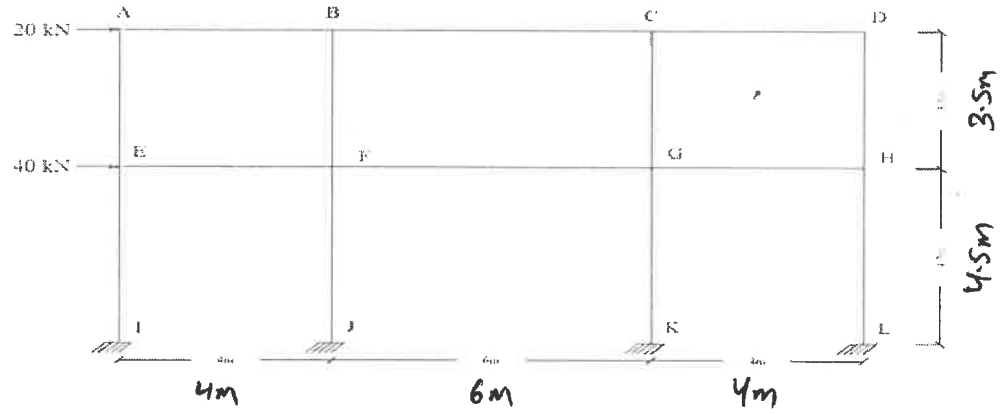
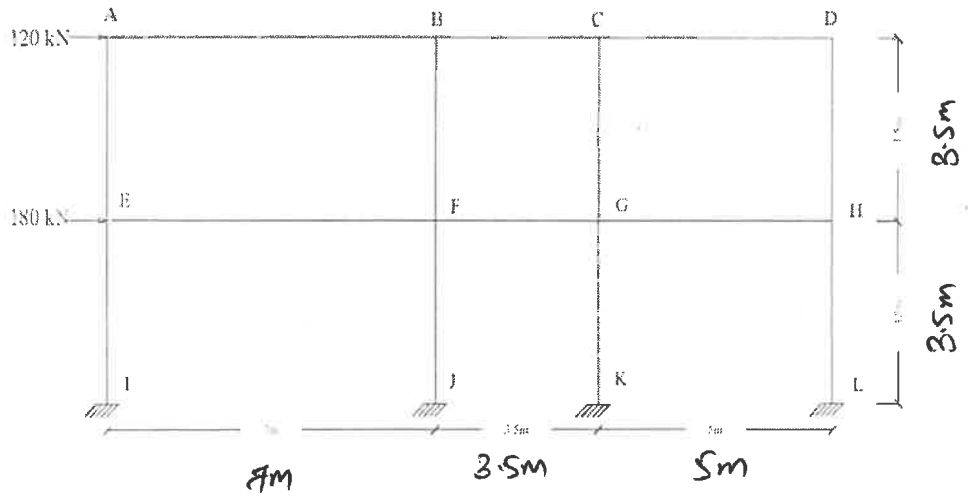
	Answer All the following questions. (5X10M=50Marks)	Marks	CO	BTL
11	A Two Hinged Parabolic Arch of span 32m central rise of 8m which carries a UDL of 15KN/m over a left half span. Calculate the support reactions and draw B.M.D.	10M	1	L2



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. (i) Calculate the horizontal thrust. (ii) Find binding moment at load 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 continuous beam which is fixed at A & D as shown in fig. Apply kani's method to analyse the given beam. 	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	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	L2

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