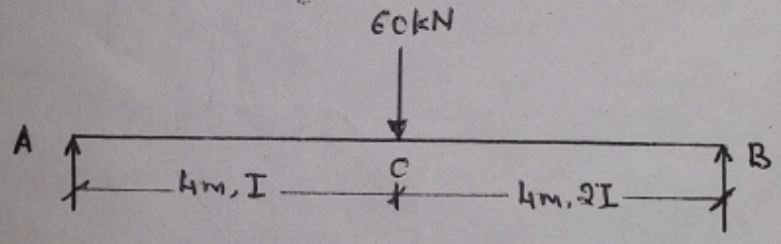
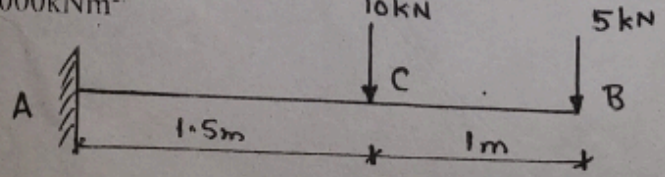
CONTINUOUS INTERNAL EVALUATION- 1

Dept: CV	Sem / Div: 4th	Sub: Analysis of Determinate Structures	S Code: 18CV42
Date: 04/07/2022	Time: 3:00-4:30 pm	Max Marks: 50	Elective: N

Note: Answer any 2 full questions, choosing one full question from each part.

QN		Questions	Marks	RBT	COs
		PART A			
1	a	A three hinged parabolic arch hinged at the supports and at the crown has a span of 24m and a central rise of 4m. It carries a concentrated load of 50kN at 18m from the left support and a UDL of 30kN/m over the left half portion. Determine the bending moment, normal thrust and radial shear at a section 6m from left support.	15	L3	CO5
	b	A suspension cable having supports at same level has a span of 40m and maximum dip of 4m. The cable is loaded with UDL of 10kN/m through its length. Calculate the maximum and minimum tension in the cable. Also find the length of the cable.	10	L3	CO5
		OR			
2	a	A three hinged parabolic arch having supports at different levels of span 60m. Its abutments A and B are at depths of 15m and 30m from crown C. The arch carries UDL of 20kN/m over the portion AC and a point load of 100kN at a point 10m from B. Find the reactions, normal thrust and radial shear, bending moment at 15m from A.	15	L3	CO5
	b	A cable is suspended between two points A and B 80m apart horizontally and a central dip of 6m. It supports a UDL of 20kN/m. Calculate the length of cable, maximum and minimum tension in the cable.	10	L3	CO5
		PART B			
3	a	Using conjugate beam method determine the deflection at point C and slope at A for the following beam. 	15	L3	CO3
	b	Determine the slope and deflection at the free end of the cantilever beam shown in following figure by moment area method. Take EI=4000kNm^2 	10	L3	CO3

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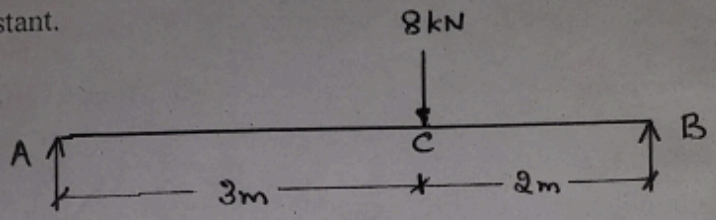
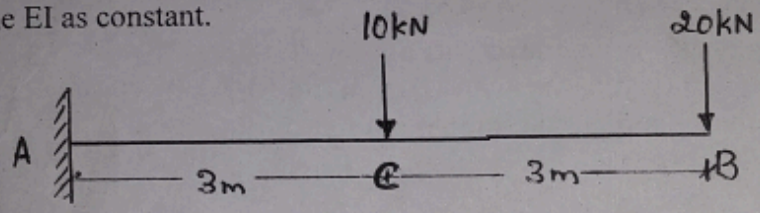
OR

4	a	Determine the slope at supports and deflection under point load for the beam shown in following figure using moment area method. Take EI as constant. 	15	L3	CO3
	b	Determine the slope and deflection of the loaded cantilever beam shown in following figure at the free end by conjugate beam method. Take EI as constant. 	10	L3	CO3

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