Code No: P18CET13

HALL TICKET NUMBER

PACE INSTITUTE OF TECHNOLOGY & SCIENCES::ONGOLE
(AUTONOMOUS)
III B.TECH I SEMESTER END SUPPLEMENTARY EXAMINATIONS, MARCH/APRIL – 2023
STRUCTURAL ANALYSIS - II
(CE Branch)

Time: 3 hours Max. Marks: 60

Note: Question Paper consists of Two parts (Part-A and Part-B)

PART-A

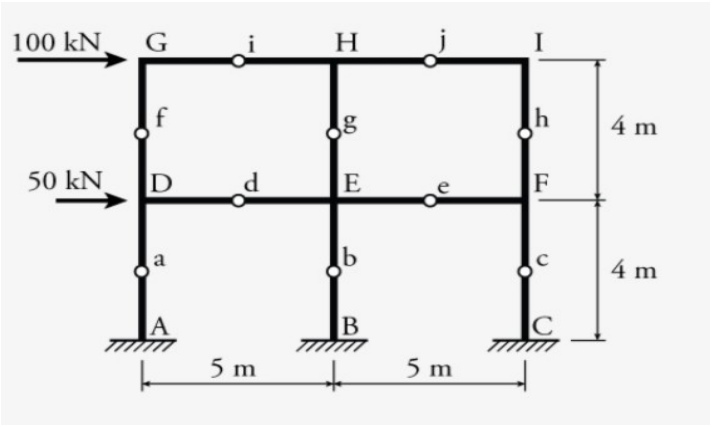
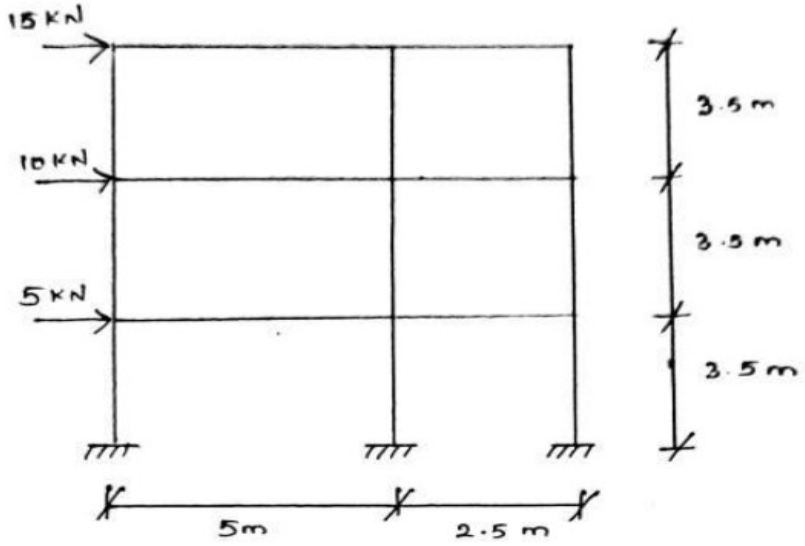
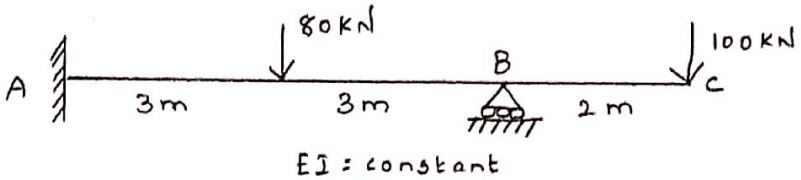
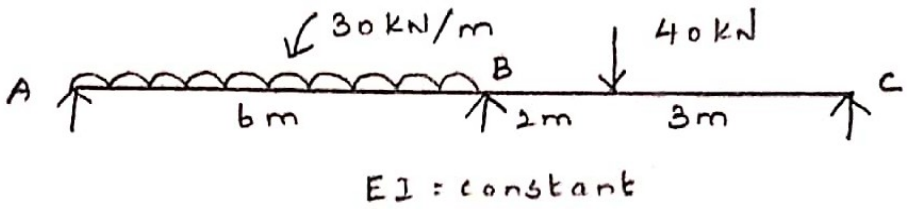
Answer all the questions in Part-A (5X2=10M)

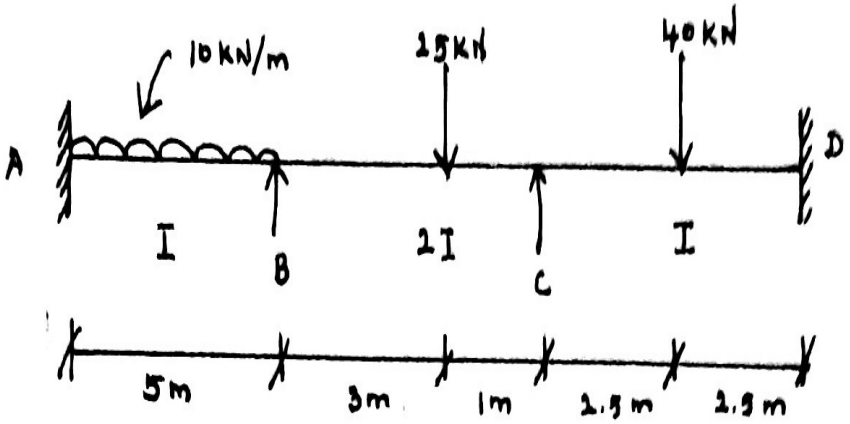
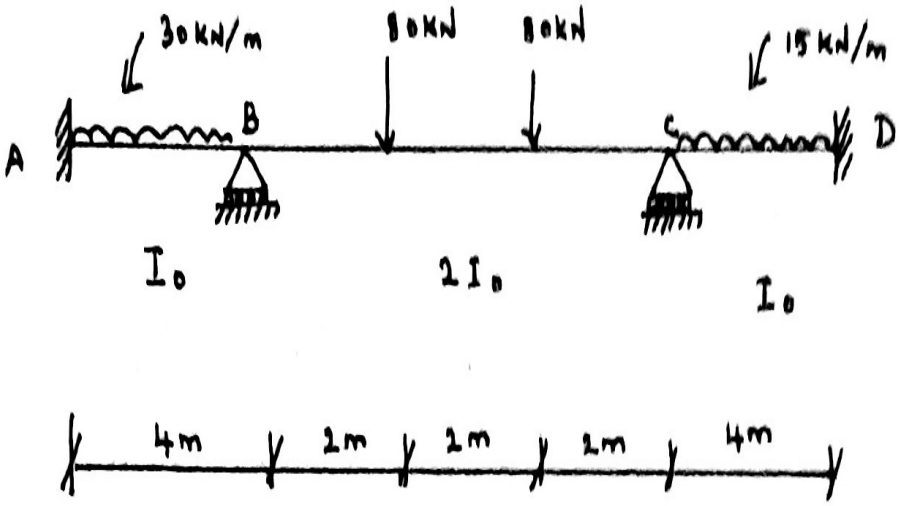
Q.No.		Questions	Marks	CO	KL
1.	a)	Differentiate two hinged and three hinged arches.	[2M]	1	2
	b)	What is the nature of force in cables?	[2M]	2	1
	c)	What is the difference between portal method and cantilever method?	[2M]	3	2
	d)	Define carry over factor.	[2M]	4	1
	e)	What is formula for storey moment in Kani's method?	[2M]	5	1

PART-B

Answer One Question from each UNIT (5X10=50M)

Q.No.		Questions	Marks	CO	KL
		UNIT-I			
2.		A 3 hinged arch of span 40 m and rise 8 m carries concentrated loads of 200 kN and 150 kN at distances of 8 m and 16 m respectively from the left end and UDL of 50 kN/m on the right half of the span. Find the vertical reaction and horizontal thrust.	[10M]	1	3
		OR			
3.		A parabolic arch hinged at the ends has a span of 60 m and a rise of 12 m. A concentrated load of 8 kN acts at 15 m from the left hinge. Calculate the horizontal thrust and the reactions at the hinge. Also calculate the bending moment at the section.	[10M]	1	3
		UNIT-II			
4.		The three hinged stiffening girder of suspension bridge of 100 m span subjected to two-point load 200 kN each 20 m and 40 m respectively from the left-hand hinge. Determine B.M and S.F. in the girder at section at 30 m from left end. Also determine the maximum tension in the cable which has a central dip of 8 m.	[10M]	2	3
		OR			
5.		A suspension cable of horizontal span 100 m is supported at two different levels. The left support is lower than right support by 3.5 m. The dip to the lowest point of the cable below the left support is 6 m. The cross-section area of the cable is 4000 mm^2. Find the UDL that can be carried by the cable, if the maximum stress is 830 N/mm^2.	[10M]	2	3
		UNIT-III			

6.		Analyze the building frame shown in figure for horizontal loads using cantilever method. 	[10M]	3	4
		OR			
7.		Use the portal method, analyze the building frame subjected to horizontal forces (due to wind) as shown in figure. Sketch the bending moment. diagram. 	[10M]	3	4
		UNIT-IV			
8.		Analyze the continuous beam loaded as shown in figure by the method of moment distribution. and draw BMD. EI = Constant. 	[10M]	4	4
		OR			
9.		Analyze the continuous beam loaded as shown in figure by the method of moment distribution. and draw BMD. EI = Constant. 	[10M]	4	4

		UNIT-V			
10.		Analyze the continuous beam loaded as shown in figure by Kani's method. 	[10M]	5	4
		OR			
11.		Analyze the continuous beam loaded as shown in figure by Kani's method. 	[10M]	5	4

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