

**PRAGATI ENGINEERING COLLEGE: SURAMPALEM
(AUTONOMOUS)**

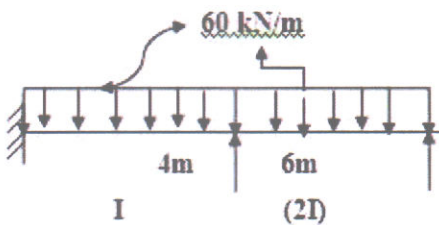
II B.Tech II Semester Regular/Supplementary Examinations, May-2024

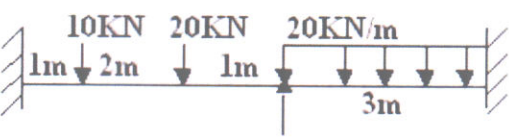
**STRUCTURAL ANALYSIS
(CE)**

Time: 3 hours

Max. Marks: 70

**Answer ONE Question from each Unit
All Questions Carry Equal Marks**

Q. No.	Questions	BTL	CO	Marks
UNIT – I				
1.	A horizontal cantilever of 5 meters span carries a point load of 25 kN at 2 meters from fixed end. If the beam is propped at the free end to the level of the fixed end (a) find the reaction the prop (b) construct S.F and B.M. diagrams	K3	CO2	14M
OR				
2.	A beam AB 10 m long is fixed at A and simply supported at B and carries a uniformly distributed load of 60 kN/m over the whole span. Find the fixing moment at A and the reactions at support. Draw the B.M.D and S.F.D. 15kN/m	K3	CO2	14M
UNIT – II				
3.	By Using slope deflection method analyze the two span continuous beam shown in figure. The end A is fixed while C is simply supported .sketch the B.M & S.F 	K4	CO3	14M
OR				
4.	Explain in detail the step by step procedure for analysis of single bay single storey frames by slope deflection method.	K3	CO3	14M
UNIT – III				
5.	Analyze the Continuous beam shown in figure 2 using moment	K4	CO3	14M

	distribution method. Sketch the BMD & SFD. EI is constant.			
				
OR				
6.	Explain the design procedure for a non sway-frame by using moment distribution method?	K3	CO3	14M
UNIT – IV				
7.	Two wheel loads 200 kN and 80kN, spaced 2m apart move on a girder of span 16m. Find the max. B.M at a section 6m from the left end. Any wheel load can lead the other.	K3	CO4	14M
OR				
8.	A uniformly distributed load of 25kN/m and 20m long crosses a girder of span 12m. Calculate the Maximum Shear force and Bending Moment at 0m, 3m, 6m and 9m from the left end support and construct Diagrams.	K4	CO4	14M
UNIT – V				
9.	Explain in detail the step by step procedure the analysis of pin jointed frames by flexibility method.	K3	CO5	14M
OR				
10.	Using stiffness matrix method, find the end moments at A and B for a fixed beam carrying udl 6kN/m throughout the length of 10 m.	K3	CO5	14M