

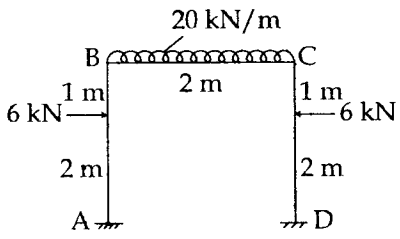


4. Compare force method and displacement method with suitable examples. 14

5. Two wheel loads 80 kN and 200 kN, spaced 2 m apart move on a girder of span 16 m. Find the maximum positive and negative shear force at a section 4 meters from left end. Any wheel load can lead the other. 14

6. Analyse the portal frame using moment distribution method shown in the figure below. 14

Here  $I_{AB} = I_{CD} = I$   
 $I_{BC} = 2I$



7. Write short notes on *any two*. 14

- (a) Muller Breslau's principle
- (b) Portal method
- (c) Distribution factor and Relative stiffness.