P P SAVANI UNIVERSITY

Fourth Semester of B. Tech. Examination (Backlog)

Nov-Dec 2021

SECV2051 Determinate Structural Analysis

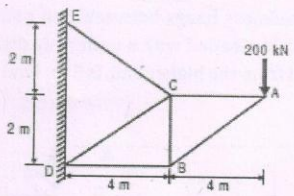
17.12.2021 Friday **Time: 12:30 p.m. To 03:00 p.m.** **Maximum Marks: 60**

Instructions:

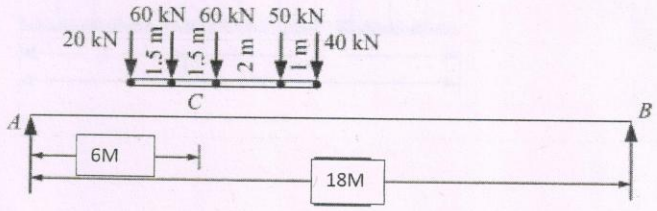
1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

Section I

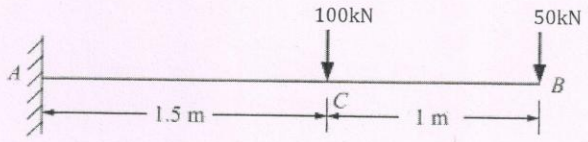
Q-1 Determine the forces in member. **10**



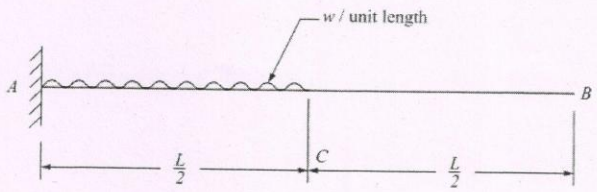
Q-2 The system of concentrated load as shown in figure rolls from left to right. Determine maximum shar force and maximum bending moment for a section at 6m away from left support. **10**



Q-3 Determine slope and deflection at the free end of an cantilever beam as shown in figure **10**

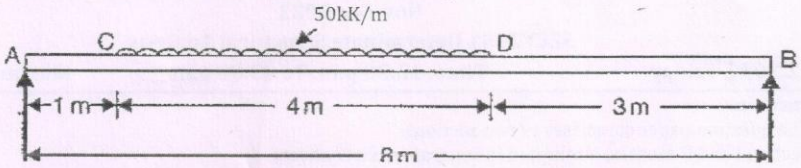


Or

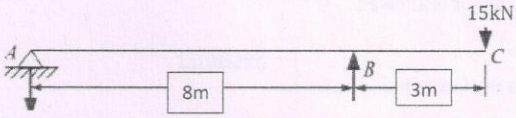


Section II

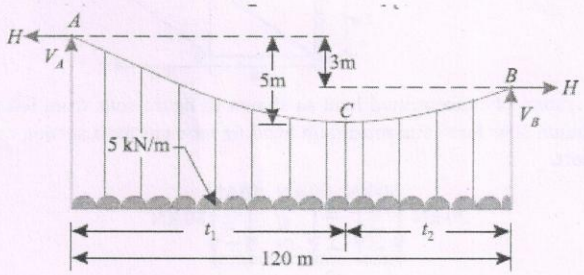
Q-1 Determine the deflection of the beam at the mid-point and also the position of maximum deflection and maximum deflection using Macaulay's method. **10**



Q-2 Determine the slope and deflection using castigliano's method **10**



Q-3 A cable of uniform thickness hangs between two points 120 m apart, with one end 3 m above the other. The cable loaded with a uniformly distributed load of 5 kN/m and the sag of the cable, measured from the higher end, is 5 m. Find the horizontal thrust and maximum tension in the cable. **10**



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