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Total number of printed pages: 02 **UG/6th/UCE601**

2023

STRUCTURAL ANALYSIS - II

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

*Answer **any five** questions.*

1. Analyze the continuous frame shown in figure-1 by slope deflection method where the support B sinks by 10mm. Draw the bending moment and the shear force diagrams. Take EI as constant for all the members. 20

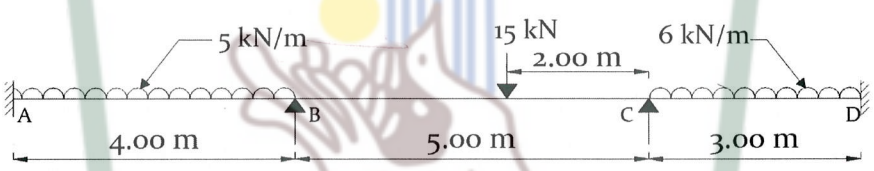

Figure-1

2. Using moment distribution method, analyze the frame shown in figure-2. Draw the bending moment and shear force diagrams. The EI of the members as indicated in the figure. 20

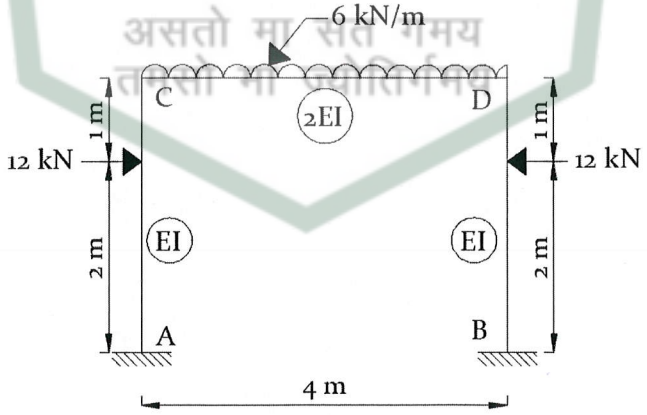

Figure-2

3. For the continuous beam shown in figure-3, determine the support moments using three moment theorem. Draw the bending moment diagram. EI is constant. 20

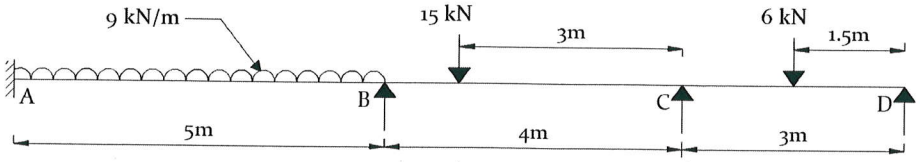

Figure-3

4. Analyze the beam shown in figure-4 by Kani's method and draw the bending moment diagram. Take EI as constant. 20

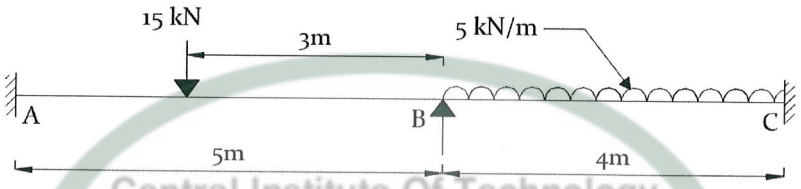

Figure-4

5. For the frame shown in figure-5 determine the fixed end moments by using column analogy method. Take EI as indicated in the figure. 20

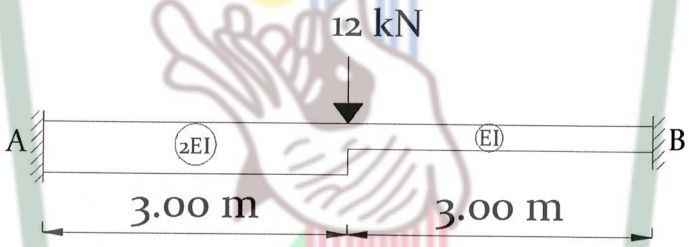

Figure-5

6. (a) Explain the causes of failure of masonry dam. 06

(b) A masonry dam of trapezoidal section is 9m high. The top width is 1.5m while the bottom width is 7.0m. The water face of the dam has a batter of 1in 12. If the water level is at the top of the dam, find the maximum and minimum stresses at the base. Take unit weight of masonry as 22000N/m^3 and unit weight of water as 9810 N/m^3. 14