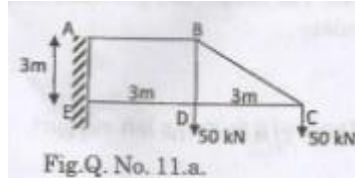


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Structural Analysis- I

Important 13mark questions

Unit I

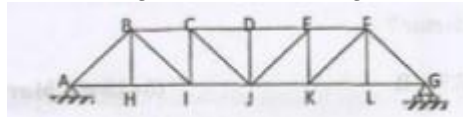
1. Find the forces in the members of the truss shown in fig. The cross sectional area and Young's modulus of all the members are same.



2. A fixed beam of span 6 m carries a uniformly load of 4 kN/m over the left half span. Analyze the beam using energy method and draw the bending moment diagram.

Unit II

1. Draw the IL for force in member BC and CI for the truss shown in fig. The height of the truss is 8 m and each segment is 8 m long.



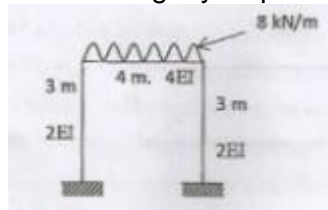
2. Draw influence line for shearing force at 4 m from the propped end of a propped cantilever of span 7 m. Calculate the ordinates at every 1 m.

Unit III

1. A symmetrical three hinged parabolic arch of span 30 m and rise 8 m carries an UDL of 40 kN/m over the left half of the span. The hinges are provided at the supports and at the center of the arch. Calculate:
 - (a) Reactions of the supports
 - (b) Bending moment.
 - (c) Radial shear and normal thrust at a distance of 8 m in the left support.
2. A three hinged parabolic arch of span 20 m has its crown 9 m high from the left support and 4 m higher than the right support. The crown of the arch is at a horizontal distance of 12 m from the left support and 8 m from the right support. The arch is subjected to a uniformly distributed load of 3 kN/m over a length of 14 m from the right support. Find the horizontal thrust and bending moment at a horizontal distance of 4 m from the right support.

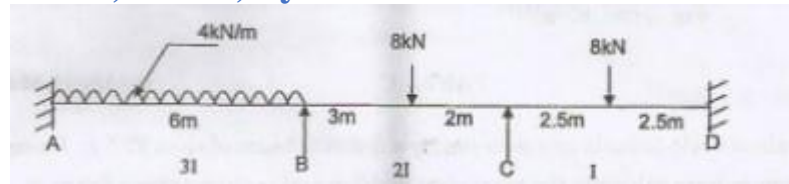
Unit IV

1. Analyse the frame shown in fig. by slope deflection method.



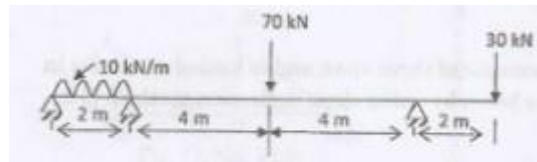
2. A continuous beam ABCD consists of three span and is loaded as shown in fig. Analyze the beam by using slope deflection method. E is constant throughout.

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Unit V

1. Draw the bending moment diagram for the continuous beam shown in fig. by moment distribution method.



2. Analyse the frame shown in fig. by a moment distribution method.

