Code: 9A01504 **R09**

B.Tech III Year I Semester (R09) Supplementary Examinations June 2017

STRUCTURAL ANALYSIS - II

(Civil Engineering)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

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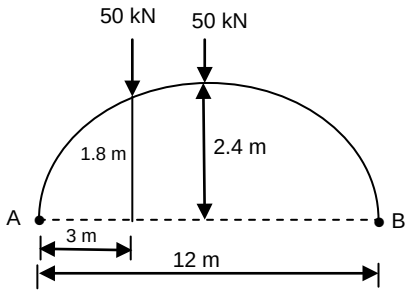
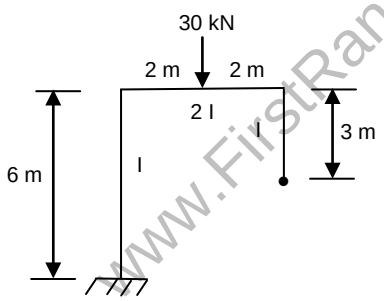
1 A 3-hinged parabolic arch has a span of 20 m and control rise 4 m. It is loaded with a uniformly distributed load of 20 kN-m for a length of 8 m from the left end support. Draw the BMD and find the position and magnitude of maximum bending moment over the arch.

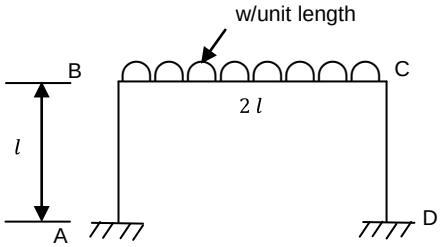
2 A 2-hinged parabolic arch of span 12 m and central rise 2.4 m has secant variation for the moment of inertia of the rib and is loaded as shown in figure below. Find the horizontal thrust on the arch and bending moment at D.



3 Analyze the portal frame shown in figure using slope deflection method.



4 Analyze the portal frame shown in figure below, using moment distribution method. Draw the BMD.



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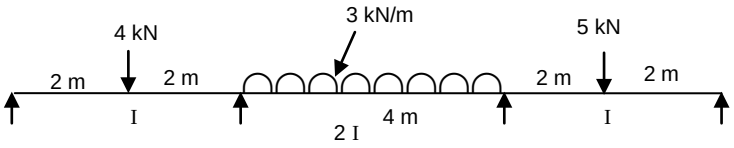
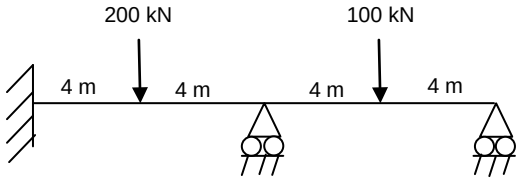
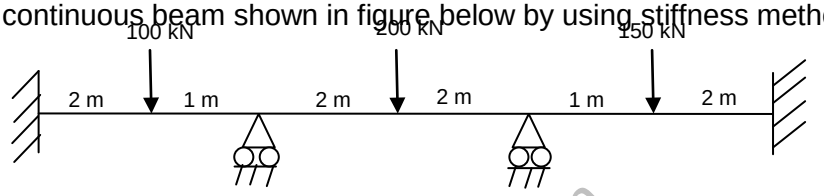
5 Analyze the continuous beam shown in figure below, using Kani's method. Draw BMD.



6 Analyze the continuous beam shown in figure below using flexibility method. Draw BMD.



7 Analyze the continuous beam shown in figure below by using stiffness method. Draw BMD.



EI constant.

8 Write short notes on:

(a) Ultimate moment in plastic analysis.

(b) Upper bound theorem in plastic analysis.

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