Code: 9A01504 **R09**

B.Tech III Year I Semester (R09) Supplementary Examinations December 2015

STRUCTURAL ANALYSIS – II

(Civil Engineering)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

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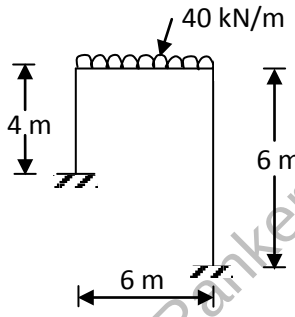
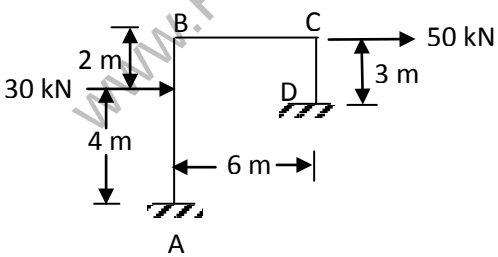
1 A three hinged arch has a span of 40 m and a rise of 6 m. It is subjected to a load of 80 kN acting at 8 m from the right support. Determine normal thrust, radial shear and bending moment at 8 m from the left support.

2 A two hinged semi circular arch of uniform cross section has a radius of 8 m. It is subjected to a point load of 60 kN acting at a section lying in the left half span and subtending an angle of 30° with the horizontal. Determine horizontal thrust, vertical reactions and moment under load and at crown.

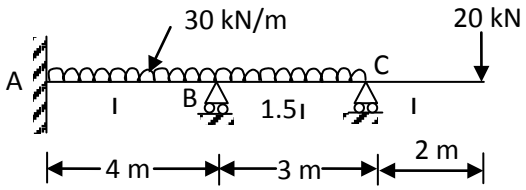
3 Analyze the portal frame by slope deflection method and sketch bending moment diagram.



4 Analyze the frame shown in figure by moment distribution method and sketch BMD.



5 Analyze the continuous beam shown in figure by Kani's method and sketch BMD.



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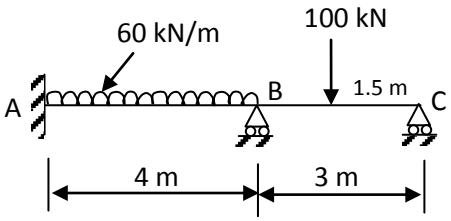
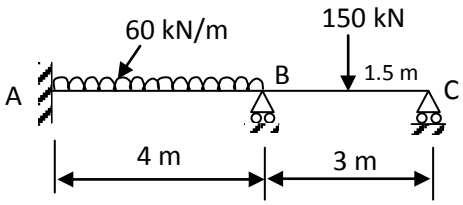
6 Analyze the continuous beam shown in figure by Flexibility method and sketch BMD.



7 Analyze the continuous beam shown in figure by Stiffness method and sketch BMD.



8 (a) Define shape factor.

(b) Determine the collapse load of a propped cantilever of span L subjected to a U.D.L.W per unit length. If the plastic moment capacity of the beam is M_P.

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