

Code: 9A01504

R9

B.Tech III Year I Semester (R09) Supplementary Examinations, May 2013

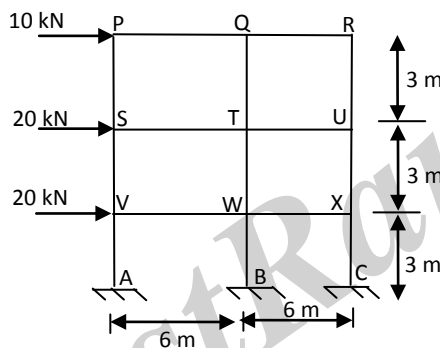
STRUCTURAL ANALYSIS - II
(Civil Engineering)

Time: 3 hours

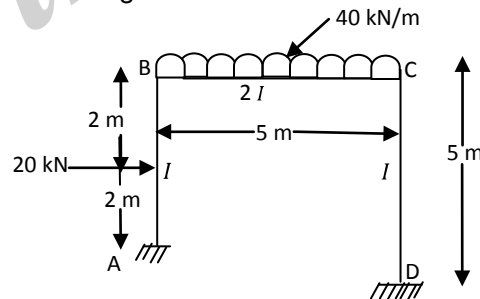
Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 A three hinged semi-circular arch of radius 'R' carries a uniformly distributed load of intensity w /unit length over its entire horizontal span. Determine the reactions at supports and maximum bending moment in the arch.
- 2 Obtain the expression for horizontal thrust for a two hinged parabolic arch subjected to a concentrated load 'W' at a distance 'a' from left support ($a < L/2$) where L is the span.
- 3 Analyze frame shown below by portal method.



- 4 Analyze the frame shown in the figure below using slope deflection method and draw bending moment diagram. Also draw elastic curve.

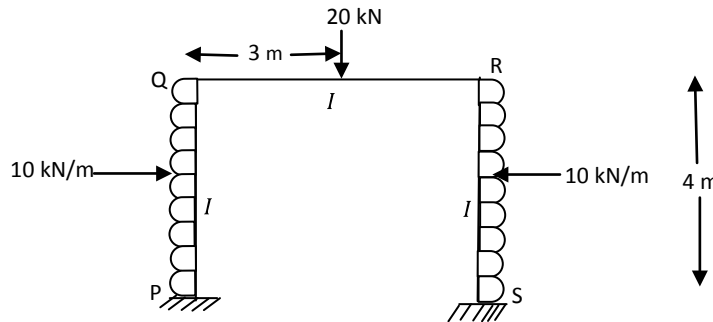


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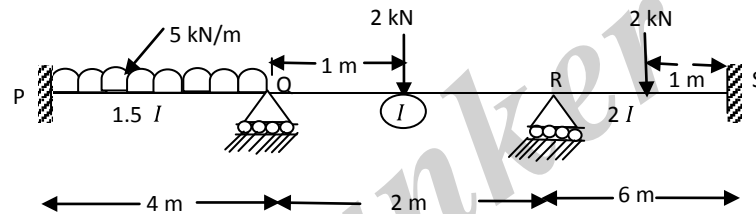
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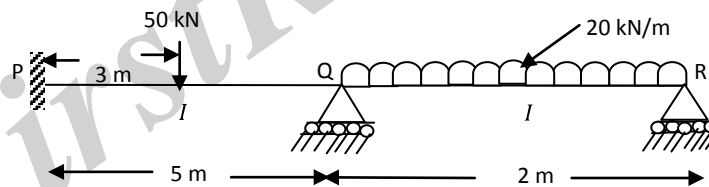
- 5 Analyze the symmetrical portal frame shown below using moment distribution method. Draw SFD & BMD. Also draw elastic curve.



- 6 Analyze the beam shown by Kani's method. Draw SFD, BMD and elastic curve. Find the distance of points of contra flexure from supports



- 7 Analyze the continuous beam shown below using flexibility matrix method.



- 8 (a) Derive the moment curvature relationship in plastic analysis.
 (b) Determine the shape factor for the triangular section.
