

Code: 9A01504

**R09**

B.Tech III Year I Semester (R09) Supplementary Examinations June 2016

**STRUCTURAL ANALYSIS - II**

(Civil Engineering)

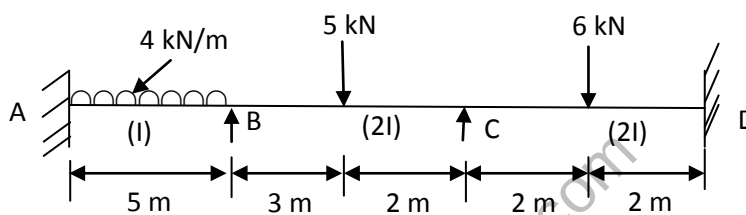
Time: 3 hours

Max. Marks: 70

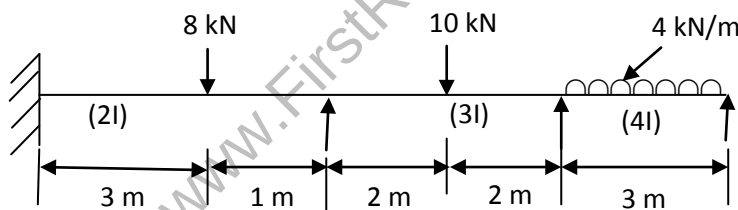
Answer any FIVE questions  
All questions carry equal marks

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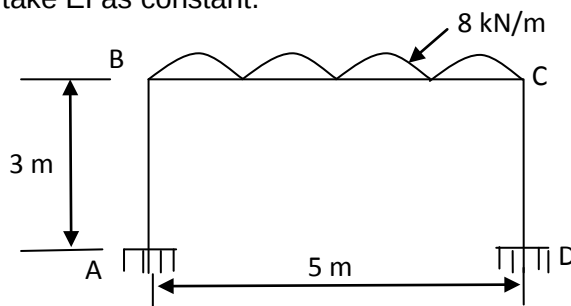
- 1 A three hinged parabolic arch has a span of 20 m and central and central rise of 5 m. It carries a concentrating load of 64 kN at a distance of 5 m from the left support. Determine the maximum bending moment and sketch the bending moment diagram.
- 2 A parabolic arch hinged at ends has a span of 60 m and rise of 12 m. A concentrated load of 8 kN is act at 15 m from left hinge. The second moment of area varies as secant of the inclination of the arch axis. Calculate the horizontal thrust, reactions and net bending moment at the section.
- 3 A continuous beam ABCD is loaded as shown in figure below. Determine the moments of supports and draw bending moment diagram using slope deflection method.



- 4 Determine the support moments for the continuous beam as shown in figure below using moment distribution method.



- 5 Analyze the portal frame shown in figure below using Kani's method. Draw bending moment diagram take EI as constant.

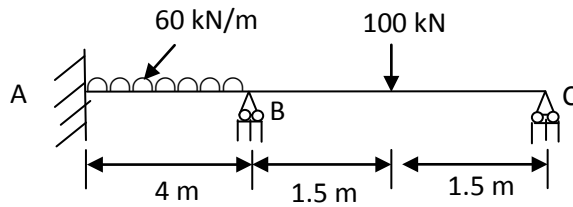


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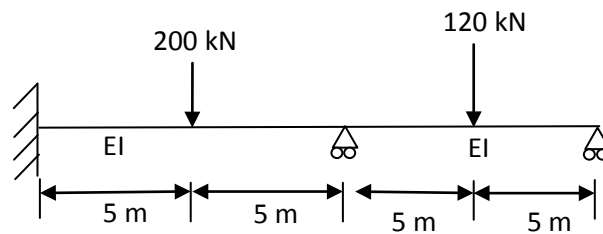
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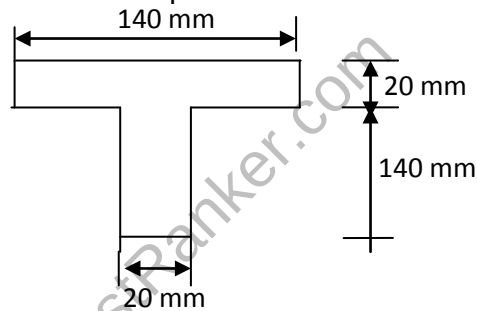
- 6 Analyze the continuous beam ABC shown in figure below by flexibility method.



- 7 Analyze the continuous beam ABC shown in figure below by stiffness method.



- 8 What is shape factor? Determine the shape factor for the T-section shown in figure below.



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