Code: 9A01504

R9

B.Tech III Year I Semester (R09) Supplementary Examinations, May 2012

STRUCTURAL ANALYSIS - II

(Civil Engineering)

Time: 3 hours Max Marks: 70

Answer any FIVE questions

All questions carry equal marks

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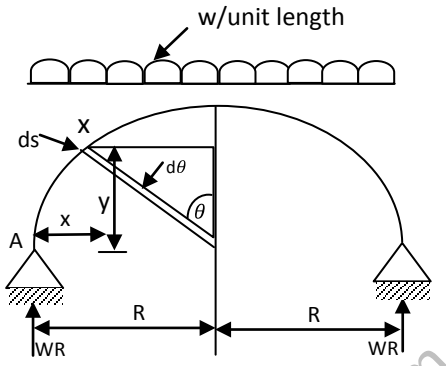
1 A semi circular arch of radius "R" subjected to a UDL of w/m length over the entire span. Assuming EI to be constant, determine the horizontal thrust.

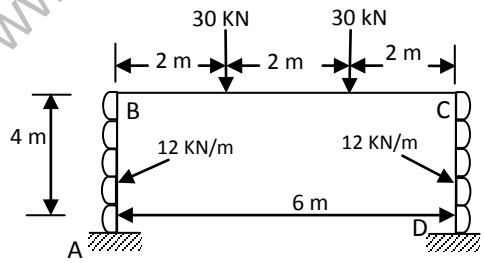


2 (a) Explain about unit load method in two hinged arches.

(b) A semi circular two hinged arch of radius "R" and of uniform flexural rigidity carries a concentrated load "W" acting at a section making an angle θ with the horizontal. Find the horizontal thrust.

3 Analyze the sway frame ABCD fixed at supports A and D, A load of 40 KN/m is acting on portion BC. The length of AB is 4 m, BC and CD are 6 m using slope deflection method and BMD diagram.

4 Analyze the symmetric portal frame shown in figure. By moment distribution method.



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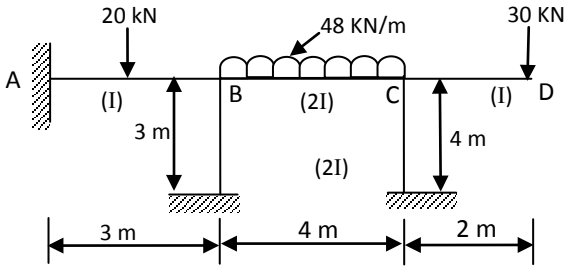
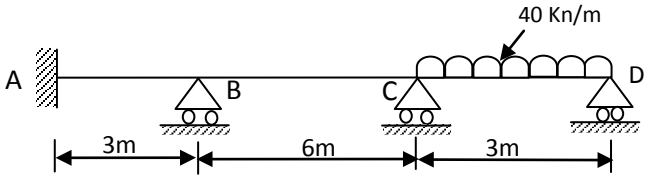
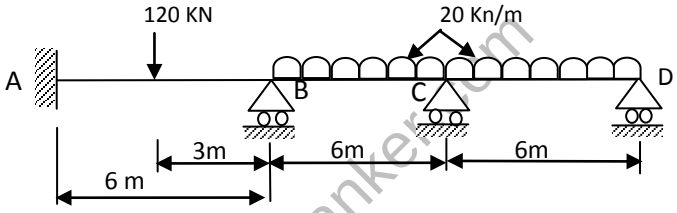
5 Analyze the rigid frame shown in figure. By Kani's method.



6 Support B of the continuous beam shown in figure. Has a downward settlement of 30 mm. Calculate the support reactions at D by the flexibility matrix method, take EI = 5600 KN/m^2.

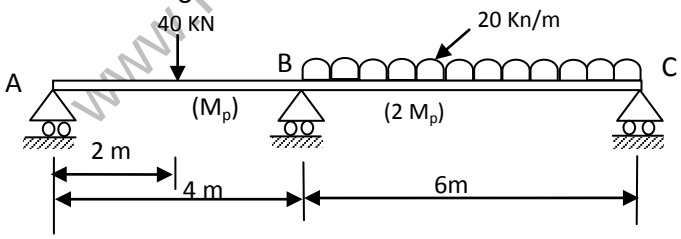


7 Analyze the continuous beam ABCD shown in figure. By force method, take EI same throughout?



8 (a) Define plastic moment.

(b) Calculate the plastic moment capacity required for the continuous beam with working loads shown in figure.



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