Code: R7420108

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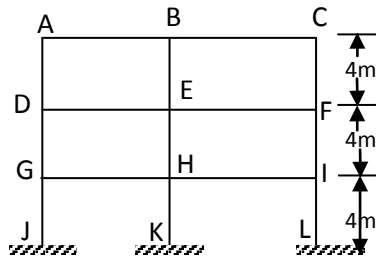## B.Tech IV Year II Semester (R07) Supplementary Examinations March/April 2013

ADVANCED STRUCTURAL ANALYSIS
(Civil Engineering)

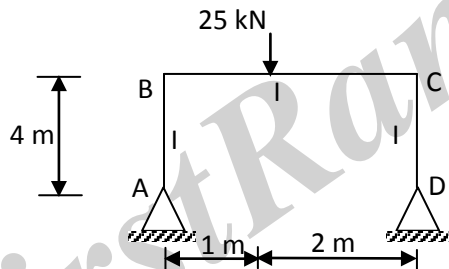Time: 3 hours   Max Marks: 80

Answer any FIVE questions
All questions carry equal marks
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1   Analyze the frame shown in figure by the moment distribution method and sketch the shear force diagram

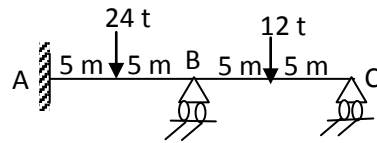2   Analyze the portal frame shown in the figure using strain energy method.

3   Draw the influence line diagram for shear force and bending moment for a section at 5.4 m from the left support of a simply supported beam 24 m long. Hence calculate the maximum bending moment and shear force at the section due to the rolling of UDL of 8.7 m length and 18 kN/m intensity.

4   Explain how to analyze the 3-hinged arches using influence lines.

5   A two span continuous beam ABC is fixed at A and C and continuous over the support B. The span AB = 4.6 m and span BC = 5.7 m. The span AB carries a UDL of 14 kN/m and span BC carries an eccentric point load of 90 kN acting at 2 m from supports using flexibility method.
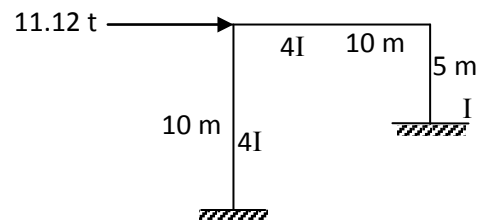
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6　　Analyze the continuous beam shown in the figure using stiffness method

7　　Analyze the portal frame shown in figure using flexibility method

8　　Write short notes on:
　(a)　Plastic hinge.
　(b)　Moment curvature relationship.

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