

SUBJECT CODE :- 447
FACULTY OF ENGINEERING AND TECHNOLOGY
T.E.(CIVIL) Examination Nov/Dec 2015
Theory of Structure - II
(Revised)

[Time: Three Hours]

[Max. Marks: 80]

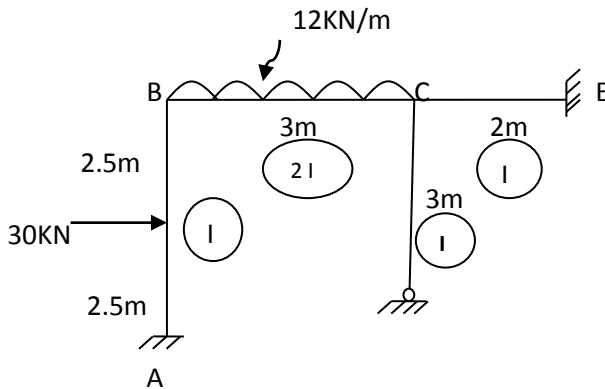
“Please check whether you have got the right question paper.”

- N.B i) Q.No.1 from section A and Q.No.6 from section B are compulsory.
 ii) Answer any two questions from the remaining four questions of each section.
 iii) Assume suitable data if necessary and state it clearly.

Section A

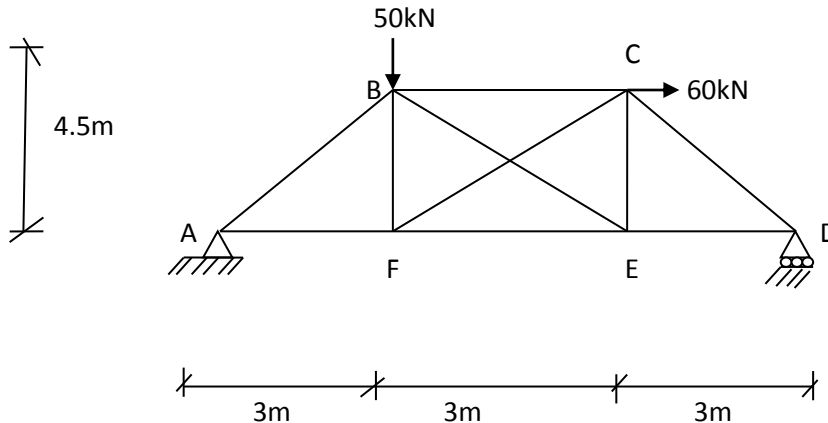
- Q.1 Answer the following (any two) 10
- State the assumptions in plastic theory.
 - Derive the relation between load factor and factor of safety.
 - State and explain Castiglione’s second theorem. And its applications.

- Q.2 Analyze the frame shown in figure using slop- deflection method. 15



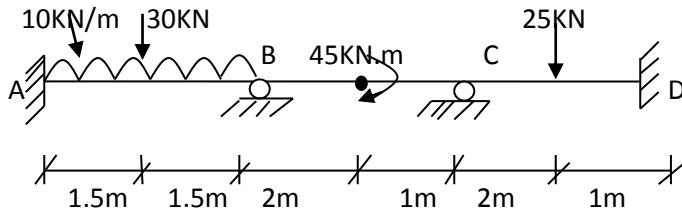
- Q.3 a) A fixed beam of span 'l' carries a point load 'w' at mid- span. Determine the fixed end moments using column 07
 analogy method. The beam is of uniform section.
 b) Derive the slop-deflection equation. 08

- Q.4 Find the forces in all members of the truss. The ratio of length to cross section area for all members is same. 15



Q.5 Analyze the continuous beam using slope. Deflection method.

15



Section B

- Q.6 a) Explain the following (any two)
- 1) Effect of change in temperature on two hinged arches.
 - 2) Effect of shorting of rib
 - 3) Distribution factor and rotation factor
- b) Write a note on:- sway analysis of frames using MDM

06

04

OR

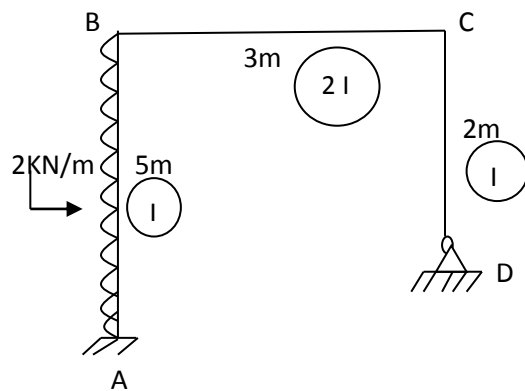
Influence line diagram for normal thrust and radial shear.

- Q.7 A two hinged arch of span 18m and rise 5m carries two concentrated loads of 50 kN and 100 kN at 5m and 9m from left hinge respectively find normal thrust and radial shear at 7m from left support draw BMD.

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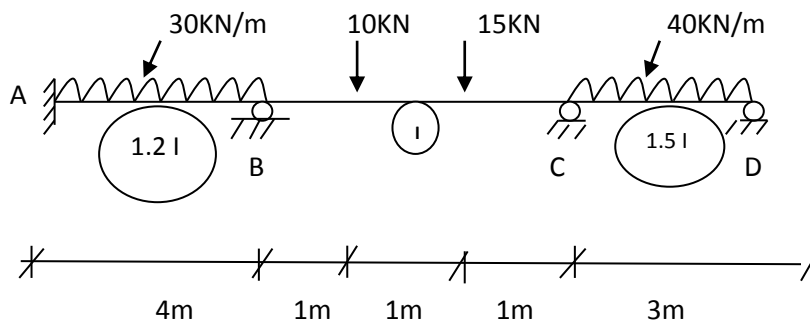
- Q.8 Analyze the frame by BMD.

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- Q.9 Analyze the continuous beam shown in figure using Kani's method. Draw BMD support B sinks by 8mm.
 $E = 2 \times 10^5 \text{ N/mm}^2$ $I = 1.2 \times 10^{-4} \text{ m}^4$

15



Q.10 Analyze the frame by MDM.

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