

Total No. of Pages : 03

Total No. of Questions : 09

B.Tech. (Civil) (Sem.-5)
STRUCTURAL ANALYSIS - II
Subject Code : CE-305
Paper ID : [A0614]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

Q1) Answer the following :

- What are rolling loads?
- What is static indeterminacy?
- Differentiate between sway and non sway frames. Explain with diagrams.
- What is the main difference between portal method and cantilever method?
- Determine the degree of internal and external redundancy for the given frame.
- Define Clapeyron's theorem of three moments?
- What is stiffness?
- Draw the I LD for reaction at support for simply supported beam.
- Write the advantages of fixed beams?
- Explain law of reciprocal deflections?

SECTION-B

- Q2) Write short note on space frames?
- Q3) Analyse the continuous beam by moment distribution method. All members have same flexural rigidity.

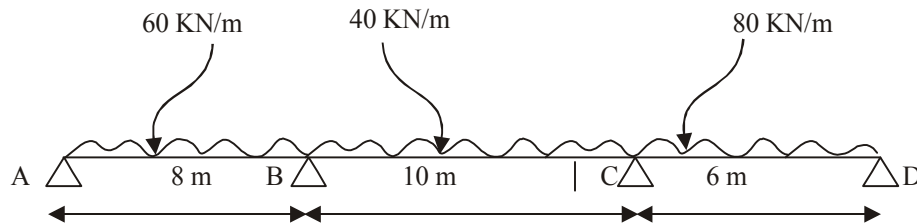


Fig. 1

- Q4) Show that the parabolic shape is a funicular shape for a three hinged arch subjected to a uniformly distributed load over to its entire span.
- Q5) A live load of 50 kN per m 8m long moves on a Simply supported girder of span 10m. Find the maximum bending moment which can occur at a section 4m from the left end?
- Q6) Write the difference between static and kinematic indeterminacy with example?

SECTION-C

- Q7) Analyse the frame shown by slope deflection method and draw the B.M. diagram.

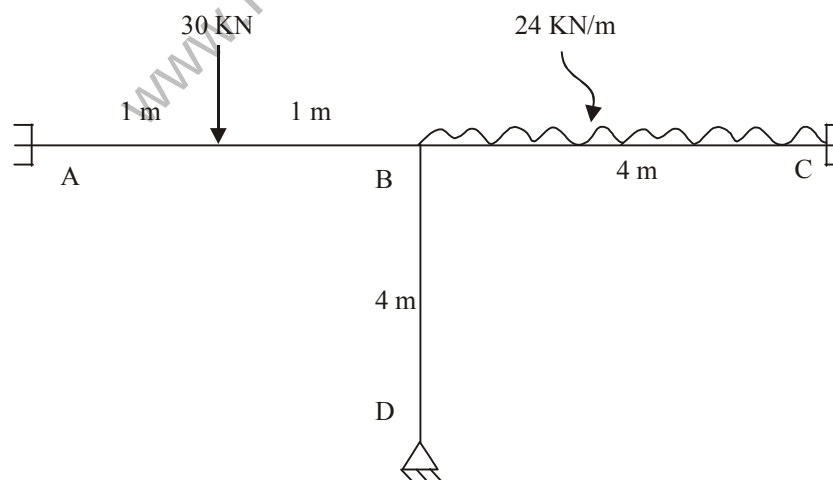


Fig. 2

- Q8) A fixed beam of span L , carries a point load W at midspan. The moment of inertia of the section is I for the left half of the span and $2I$ for the right half of the span. Find the fixed end moments.
- Q9) Analyse the frame shown in figure using Kani's Method.

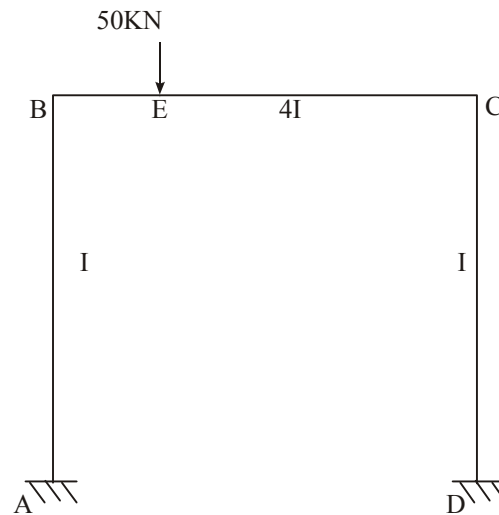


Fig.3

$AB = BC = CD = 5\text{m}$ and $BE = 1.5\text{m}$