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Name of Examination : **Summer 2021** - (Preview)

Course Code & Course Name : **CE351U - Advanced Theory Of Structures**

Generated At : **19-04-2022 14:56:51**

Maximum Marks : **60**

Duration : **3 Hrs**

[Edit](#) [Print](#) [View Answer Key](#) [Close](#) **Answer Key Submission Type:** Marking scheme with model answers and solutions of numerical

Instructions:

1. All questions are compulsory.
2. Illustrate your answer with suitable figures/sketches wherever necessary.
3. Assume suitable additional data; if required.
4. Use of logarithmic table, drawing instruments and non programmable calculators is allowed.
5. Figures to the right indicate full marks.

1) Solve any two sub-questions.

a) Analyse the continuous beam shown in figure 1 by slope deflection method and draw bending moment diagram. [10]

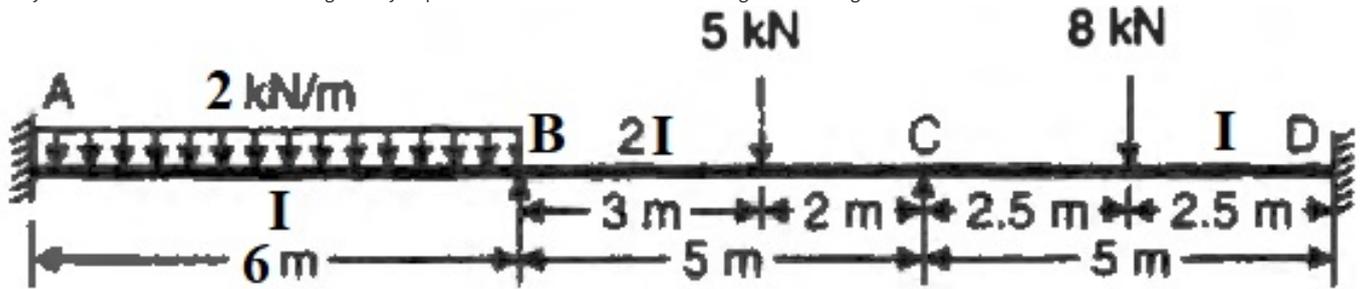


Figure 1

b) Analyse the frame shown in figure 2 by slope deflection method. Draw bending moment diagram. [10]

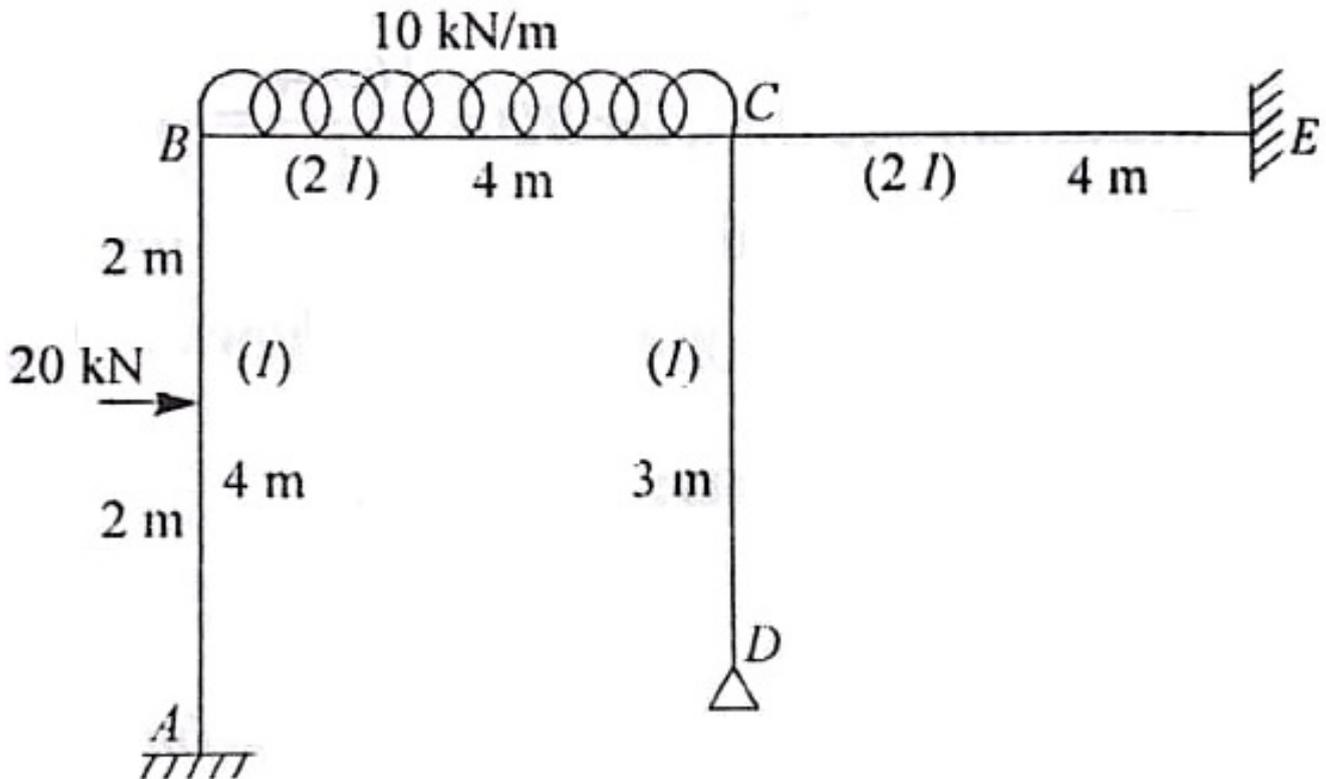


Figure 2

c) Analyse the portal frame shown in figure 3 by the portal method. [10]

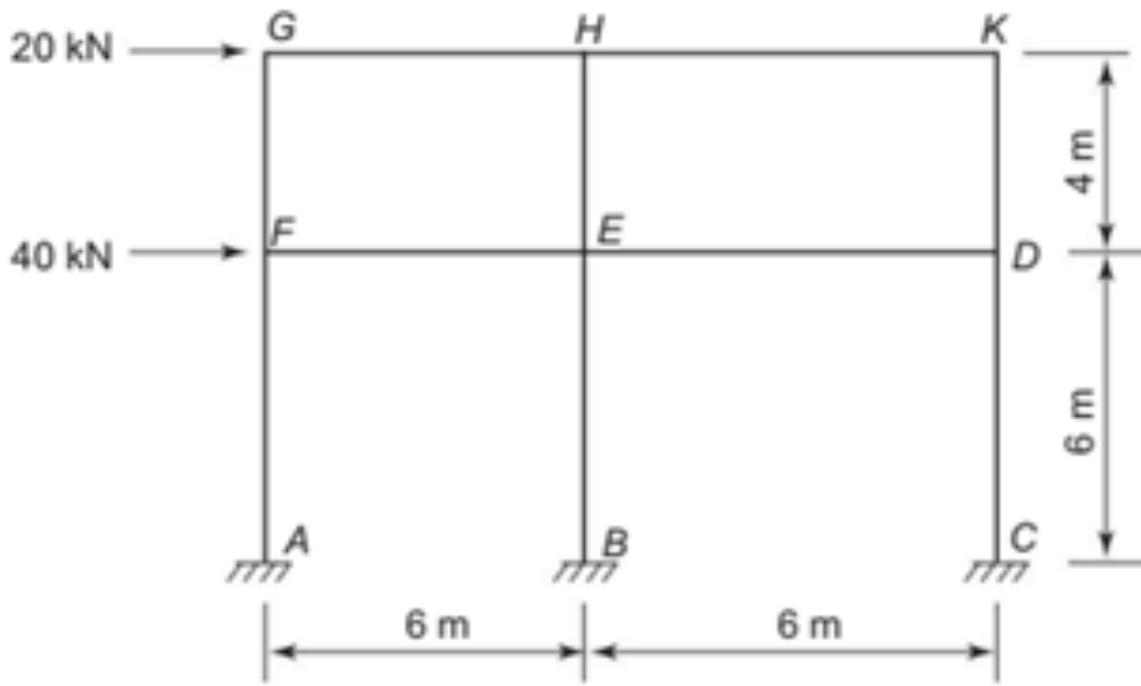


figure 3

2) Solve following sub-questions.

a) Analyse the continuous beam shown in figure 4 by moment distribution method. Draw bending moment diagram. [10]

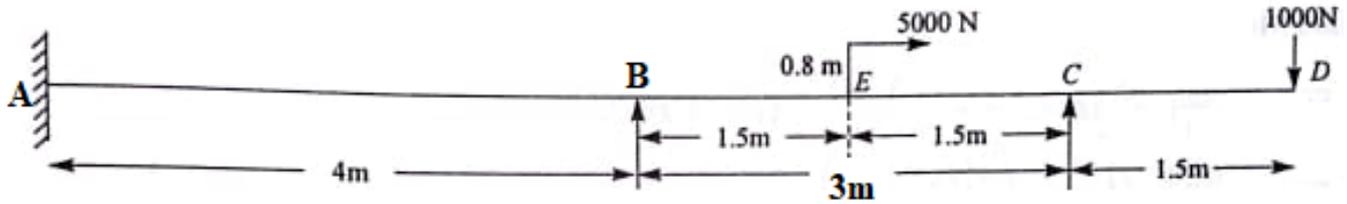


Figure 4

b) Explain statically determinate and indeterminate structures with suitable examples. Differentiate between statically determinate and indeterminate structures [5]

3) Solve following sub-question.

a) If support B sinks by 0.0025 m analyse the continuous beam shown in figure 5 by moment distribution method. Take $I = 3.5 \times 10^{-5} \text{ m}^4$ and $E = 2 \times 10^8 \text{ kN/m}^2$. Draw bending moment diagram