

Total No. of Questions : 5

Total No. of Printed Pages : 4

EKS-332**B.E. V Semester (CGPA) Civil Engg.
Examination 2017****THEORY OF STRUCTURE - I****Paper : CE-502****Time Allowed : Three Hours****Maximum Marks : 60**

- Note :** i) Attempt all questions.
ii) All questions carry equal marks.

Unit-I

- Q.1.** Analysed the portal frame with hinged base loaded as shown in figure1 by the strain energy method. Sketch the bending moment diagram. **12**

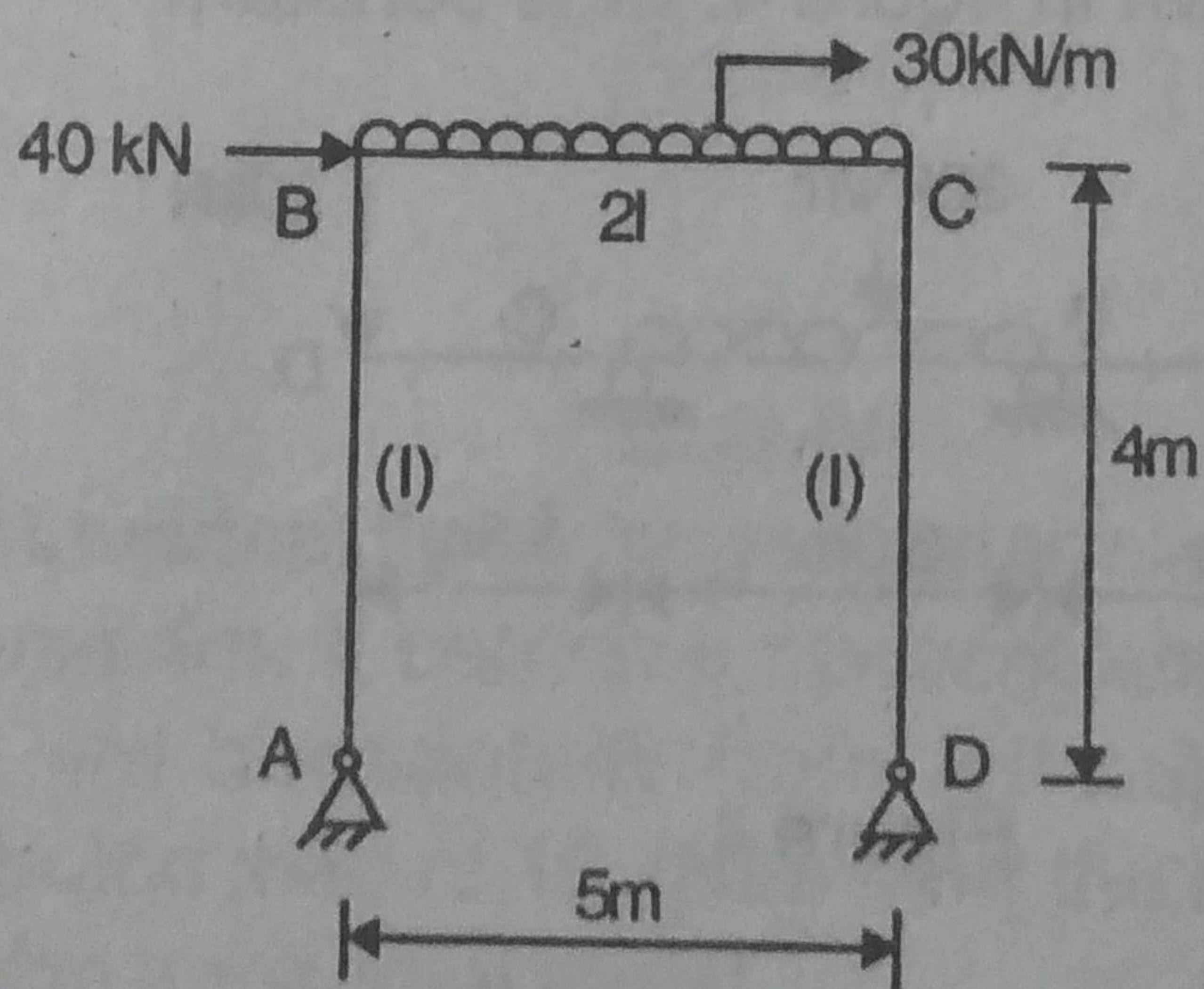


Figure1

OR

(2)

UITians

Analyse the continuous beam as shown in figure 2 by strain energy method. EI is constant for the beam.

12

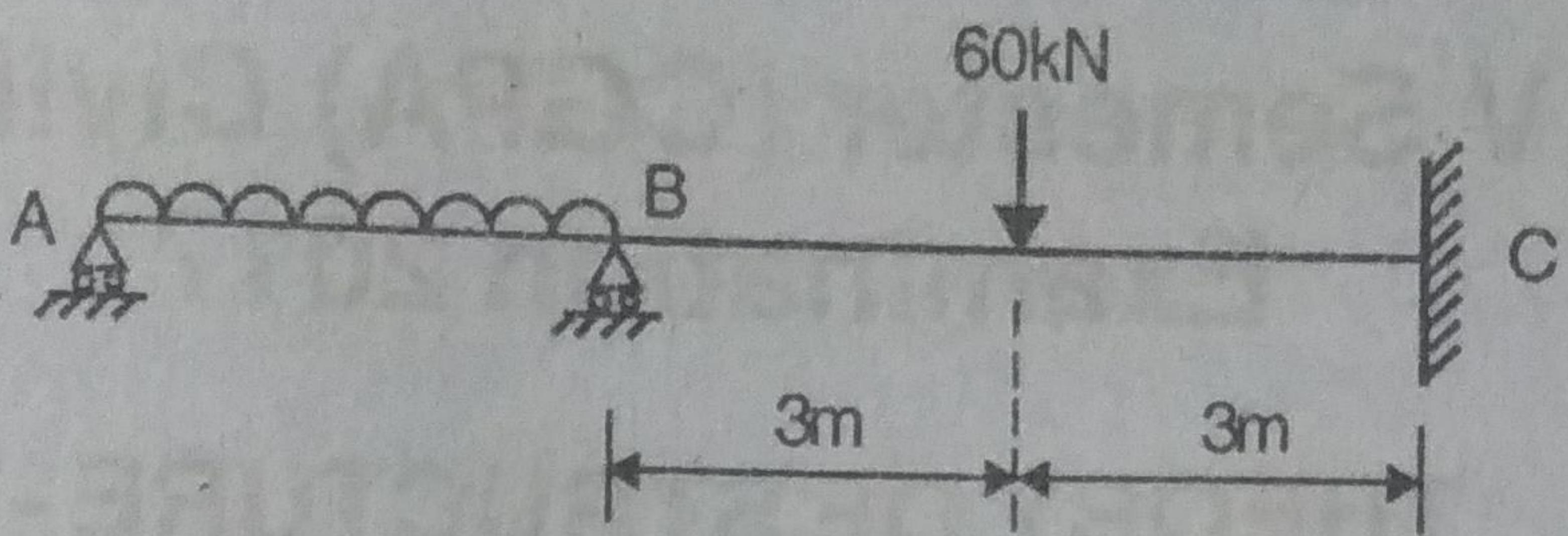


Figure 2

Unit-II

Q.2. Analyze a continuous beam ABC as shown in figure 3. Draw BMD, use three moment equation method.

12

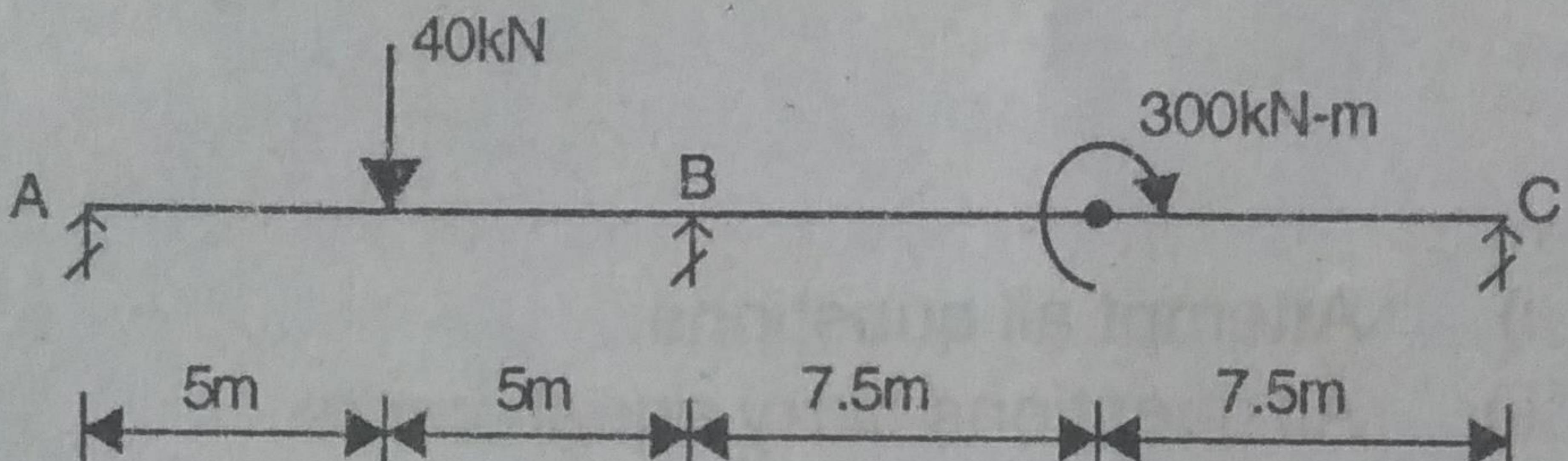


Figure 3

OR

Determine the support moments and sketch the BMD for beam as shown in figure 4. EI is constant.

12

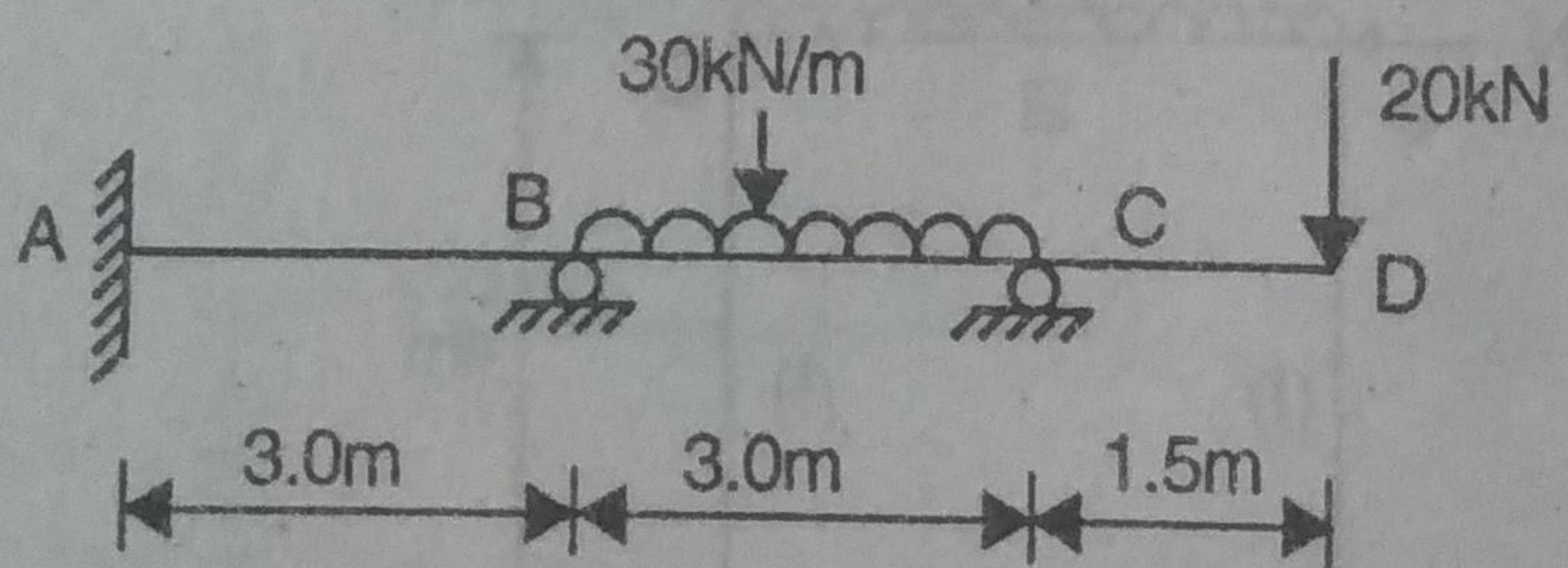


Figure 4

(3)

UITians

Unit-III

- Q.3. Analyse the beam by slope deflection method as shown in figure 5. Draw BMD. 12

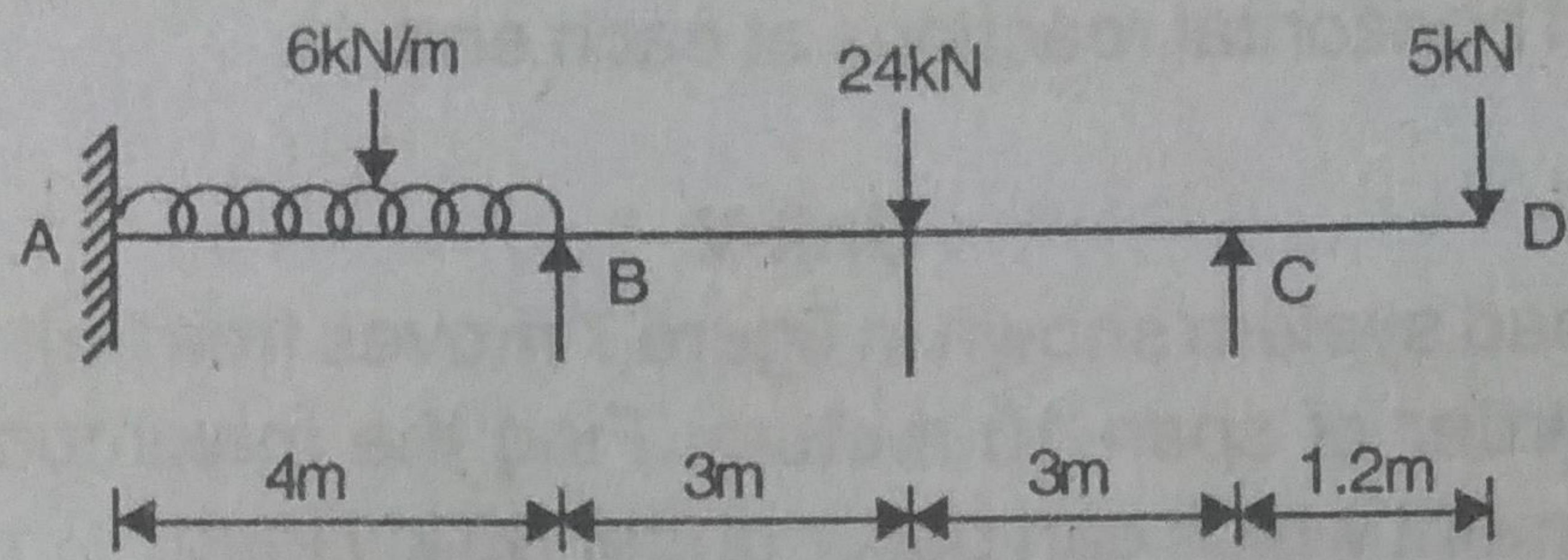


Figure 5

OR

- Analyse the beam by column analogy method as shown in figure 6. Draw BMD. 12

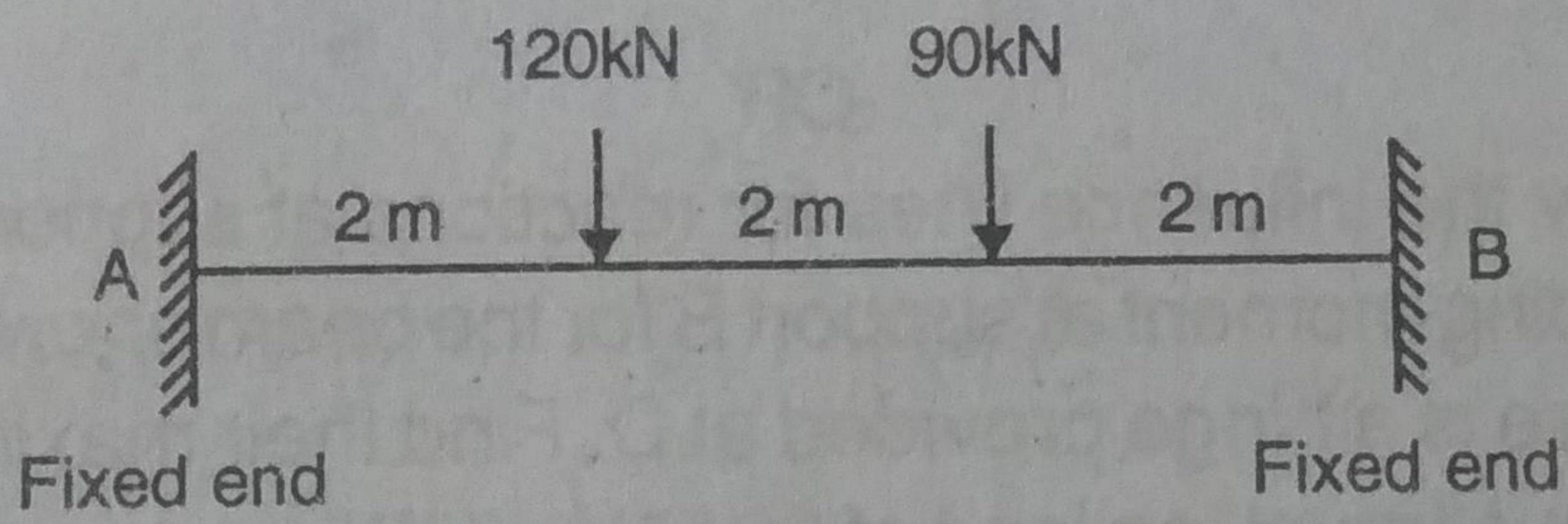


Figure 6

Unit-IV

- Q.4. A symmetrical three hinged parabolic arch has span 20m, and rise 4m. It carries a concentrated load of 40 kN at a point 4m horizontally from left support and uniformly distributed load of 16 kN/m over the right half of the span. Find the horizontal thrust. 12

(4)

UITians

OR

A cable of span L has its ends at heights h_1 and h_2 above the lowest point of the cable. It carries a uniformly distributed load of w per unit run of the span. Determine the vertical and horizontal reactions at each end. 12

Unit-V

- Q.5.** A load system shown in figure 7 moves from left to right on a girder of span 10 meters. Find the maximum bending moment which can occur under 80 kN load. 12

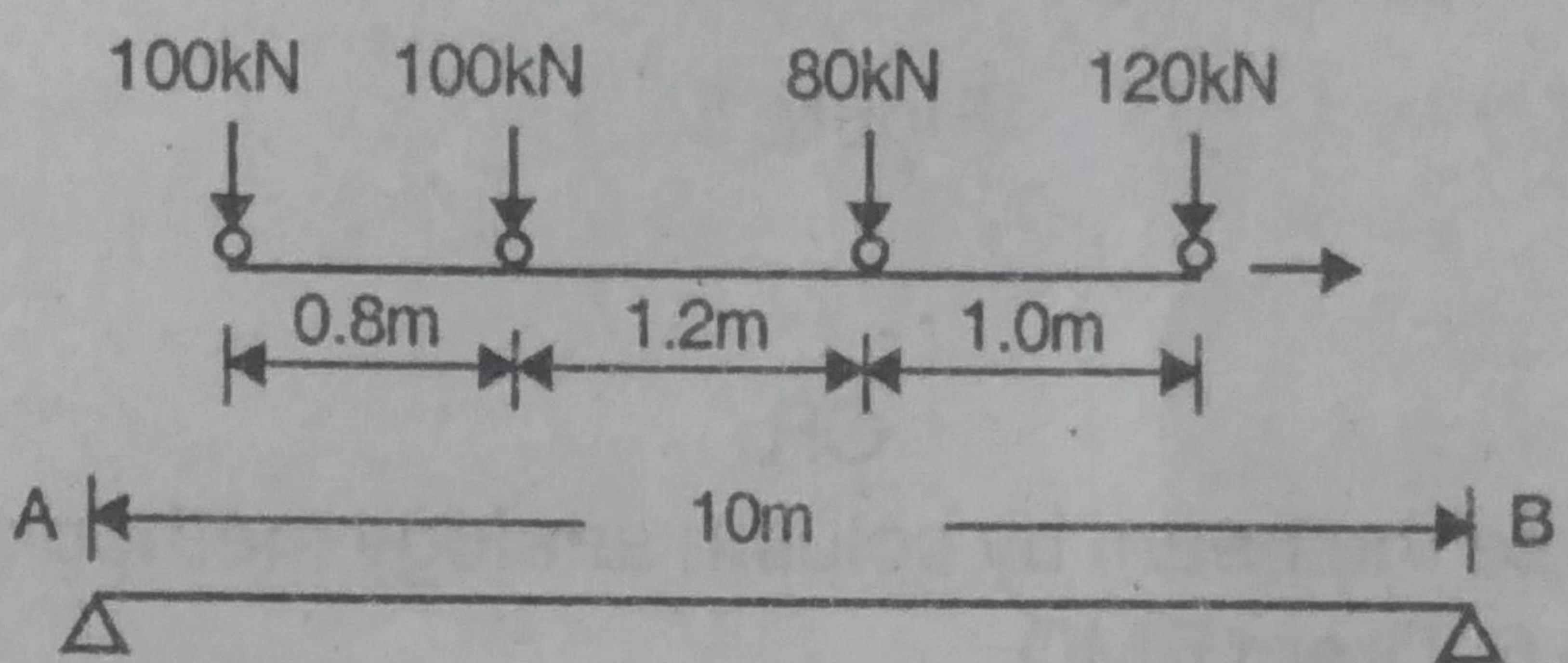


Figure 7

OR

Draw the influence lines for reactions at support A,B,C and bending moment at support B for the beam shown in figure 8. These is a hinge provided at D. Find their maximum values when a travelling load of 60 kN/m(UDL) may cover any part of the span. 12

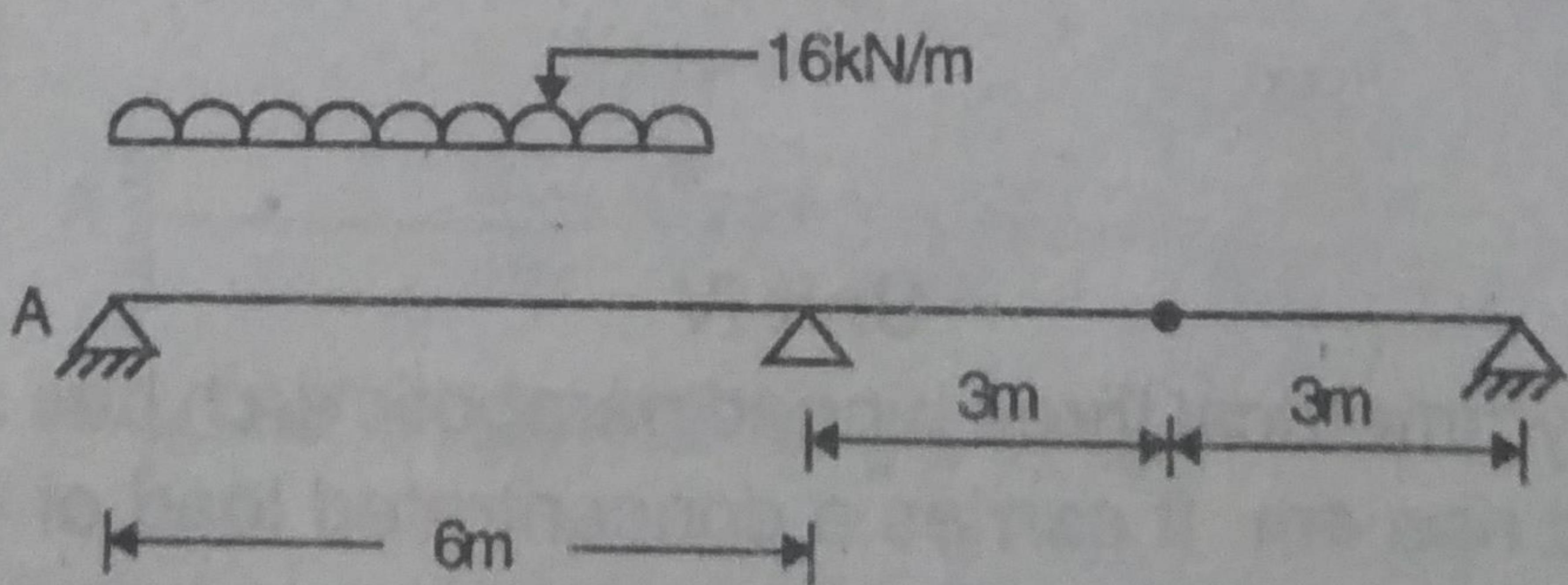


Figure 8

