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06CV53

Fifth Semester B.E. Degree Examination, June-July 2009
Structural Analysis – II

Time: 3 hrs.

Max. Marks:100

Note:1. Answer any FIVE full questions selecting at least two questions from each of Part A and Part B.
2. Missing data may be assumed suitably.

Part A

- 1 A series of wheel loads of 60 kN, 70 kN, 120 kN and 50 kN spaced at 2m, 3m and 2m crosses over a simply supported girder of span 20m from left to right with 60 kN load leading as shown in figure Q1. Determine
- Maximum B.M. and S.F. at 6 m from the left support.
 - Maximum B.M. and S.F. any where in the girder.
 - Maximum B.M. under 70 kN load.
 - Equivalent udl.
- (20 Marks)

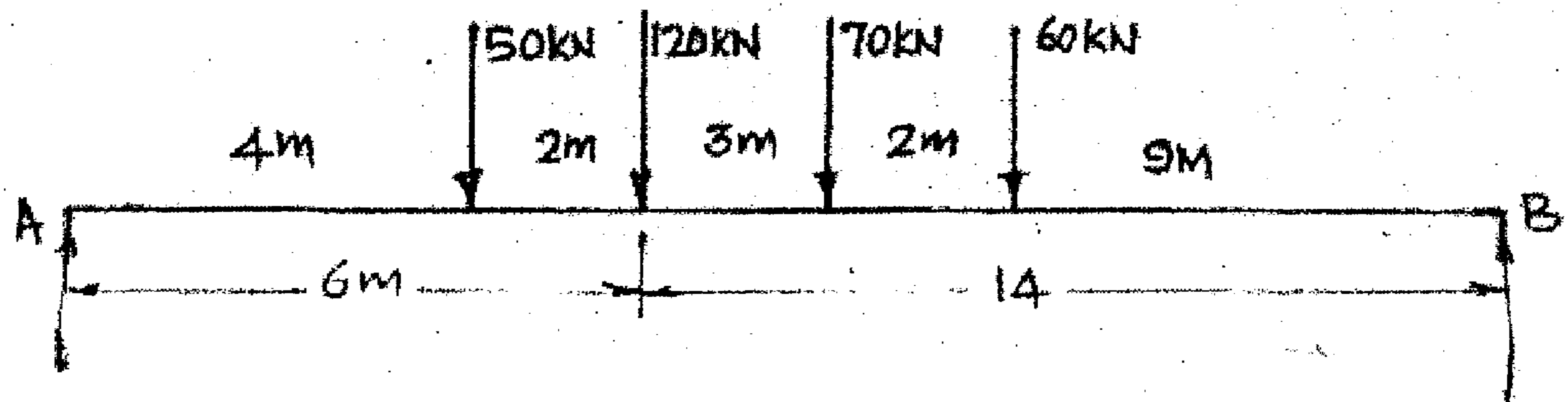


Fig. Q1

- 2 Analyse the frame shown in figure Q2 by slope deflection method. Hence draw B.M.D, S.F.D. Also sketch the elastic curve. (20 Marks)

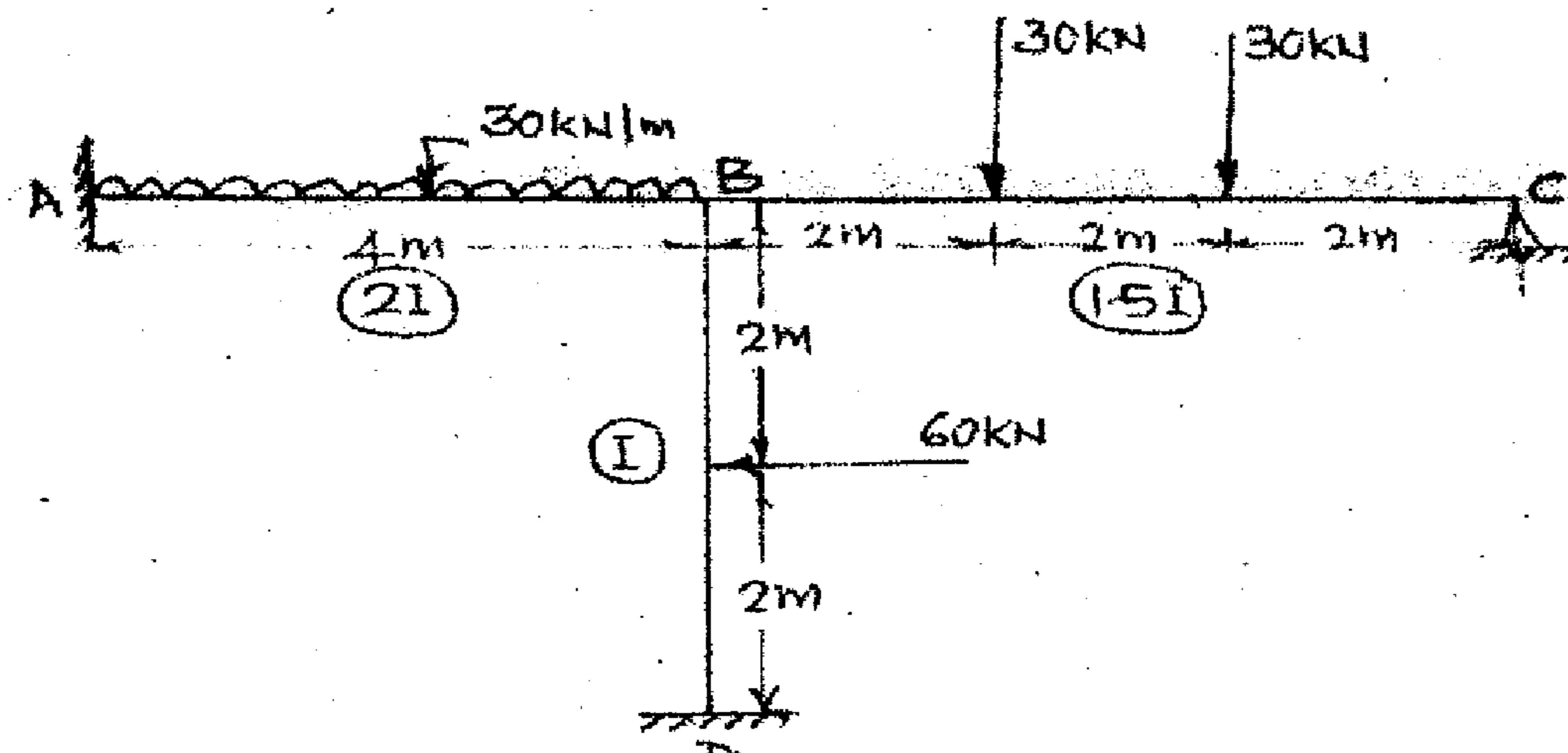


Fig. Q2

- 3 Analyse the frame shown in figure Q3 by moment distribution method. Hence draw B.M.D., S.F.D. Also sketch the elastic curve. (20 Marks)

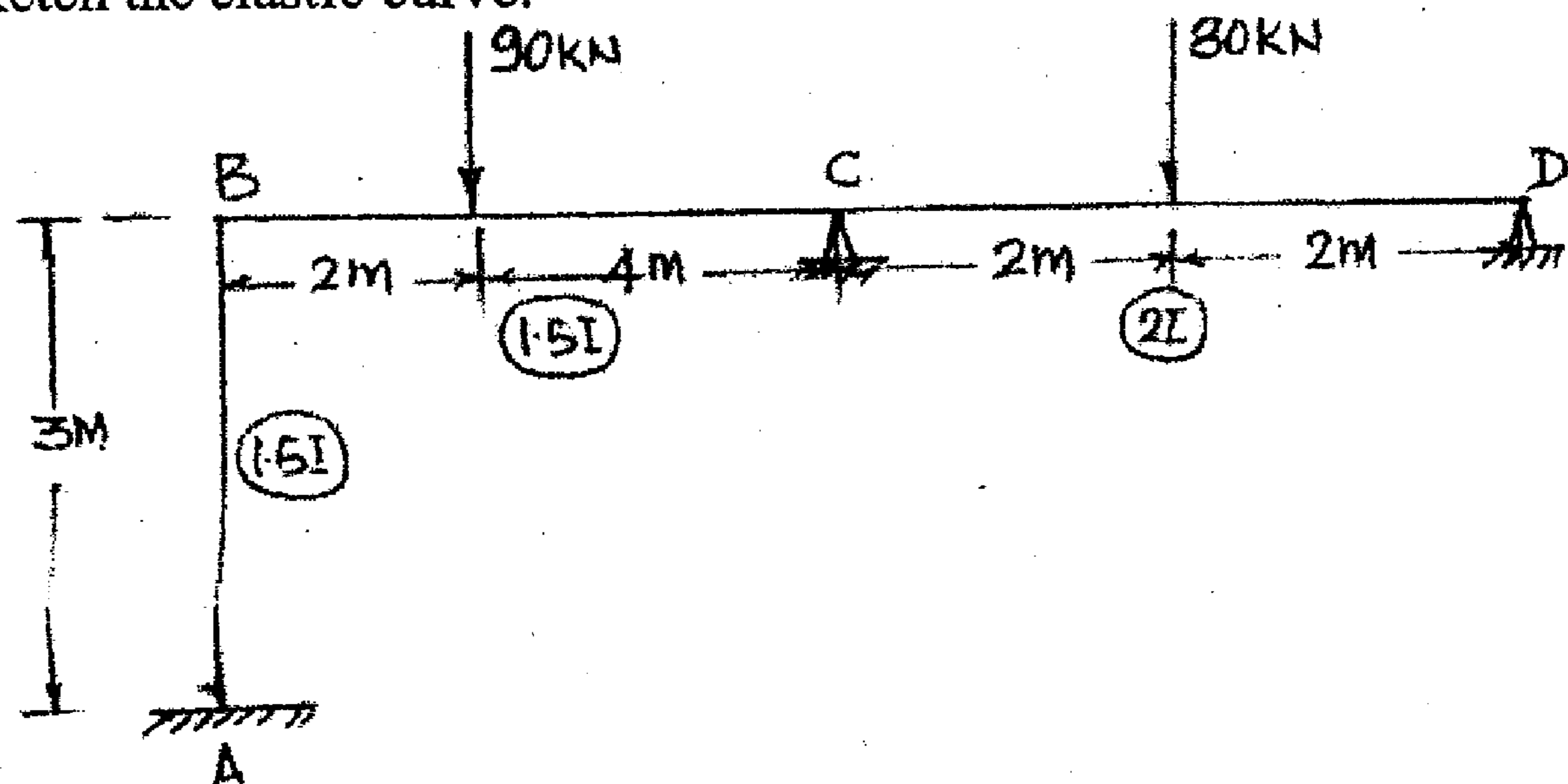


Fig. Q3

- 4 Analyse the frame shown in figure Q4 subjected to side sway by using moment distribution method. Hence draw B.M.D., S.F.D. and also sketch the elastic curve. (20 Marks)

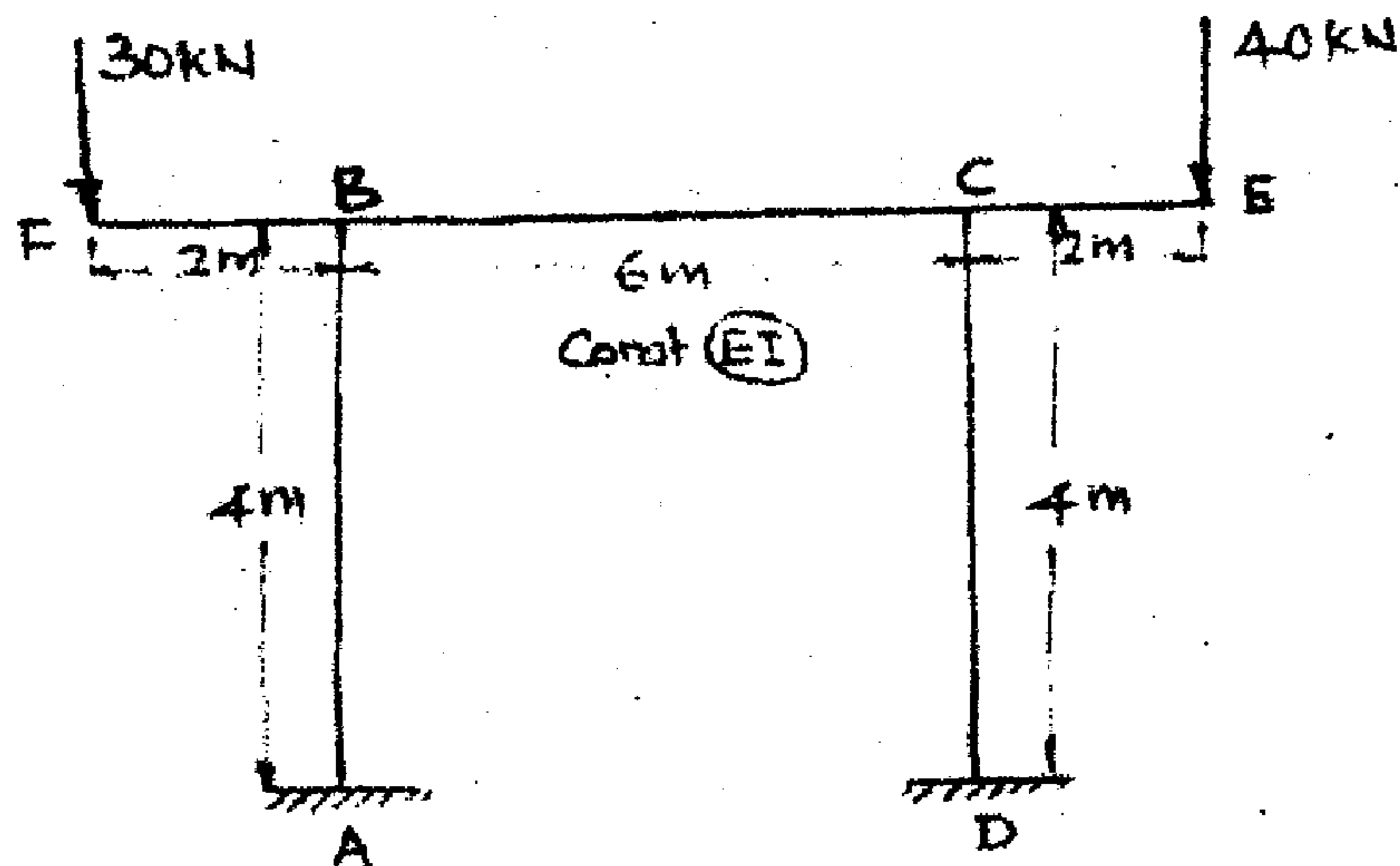


Fig. Q4

Part B

- 5 Determine support moments for the continuous beam shown in figure Q5 by Kani's method. The relative I values are indicated along the member in each span. EI is constant. Sketch the B.M.D., S.F.D. and elastic curve. (20 Marks)

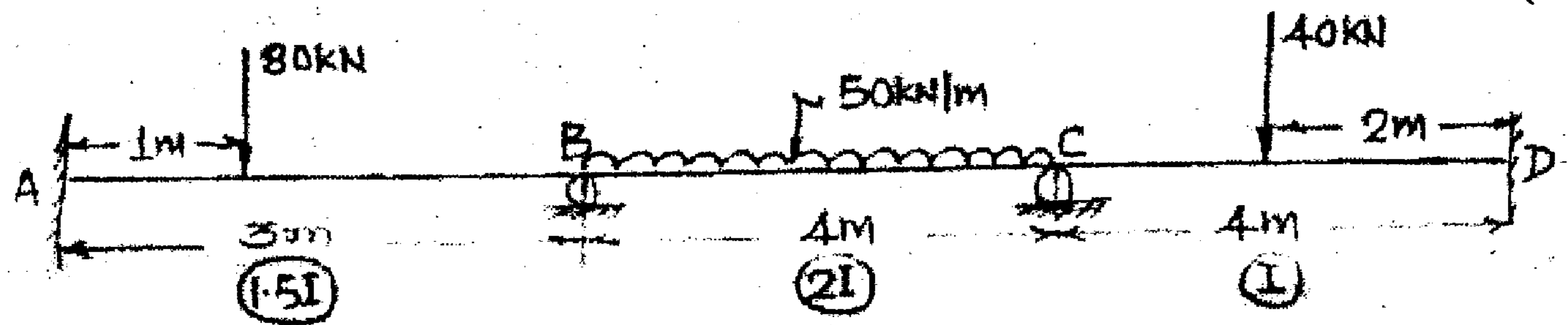


Fig. Q5

- 6 Analyse the frame shown in figure Q6 by the matrix flexibility method. (20 Marks)

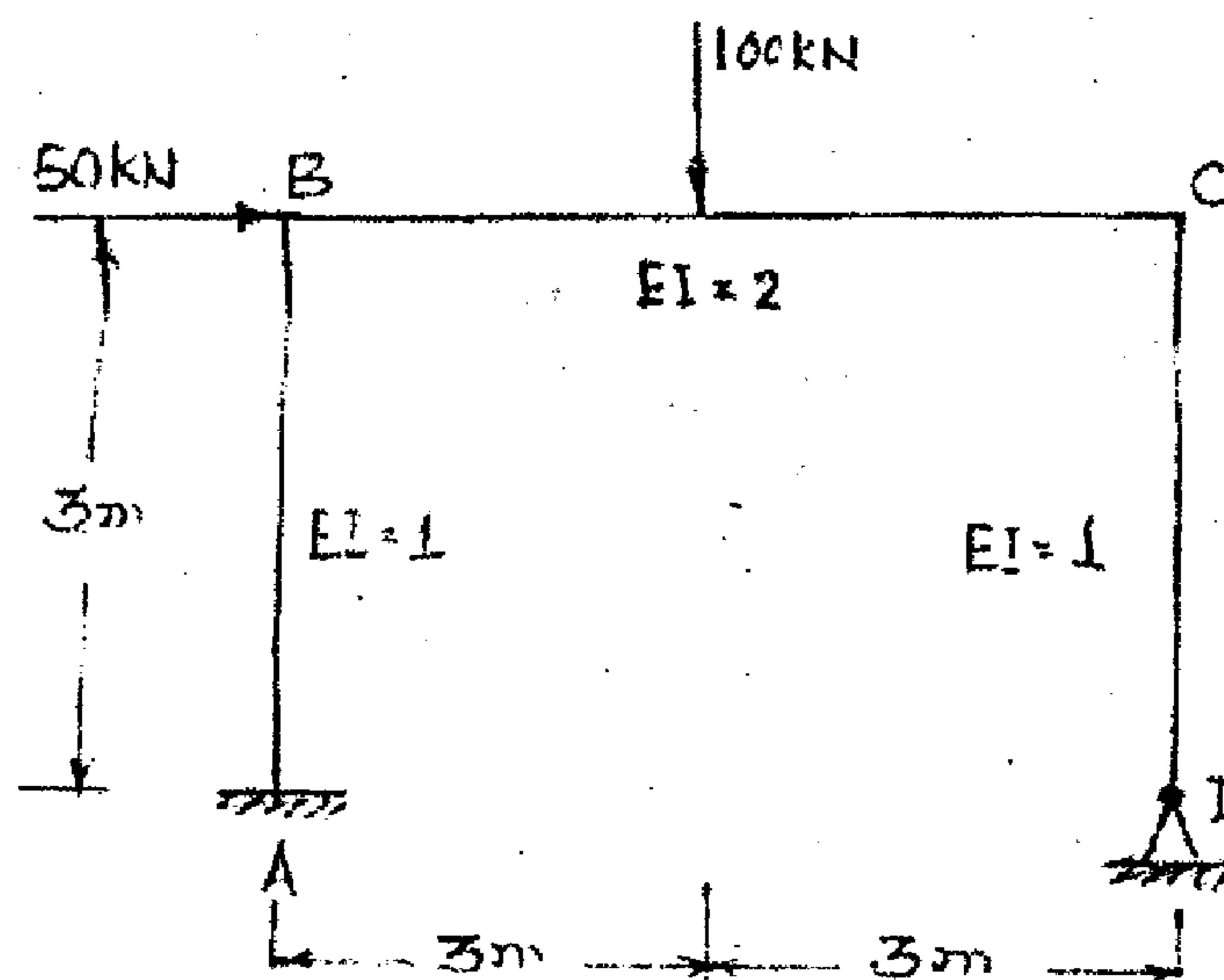


Fig. Q6

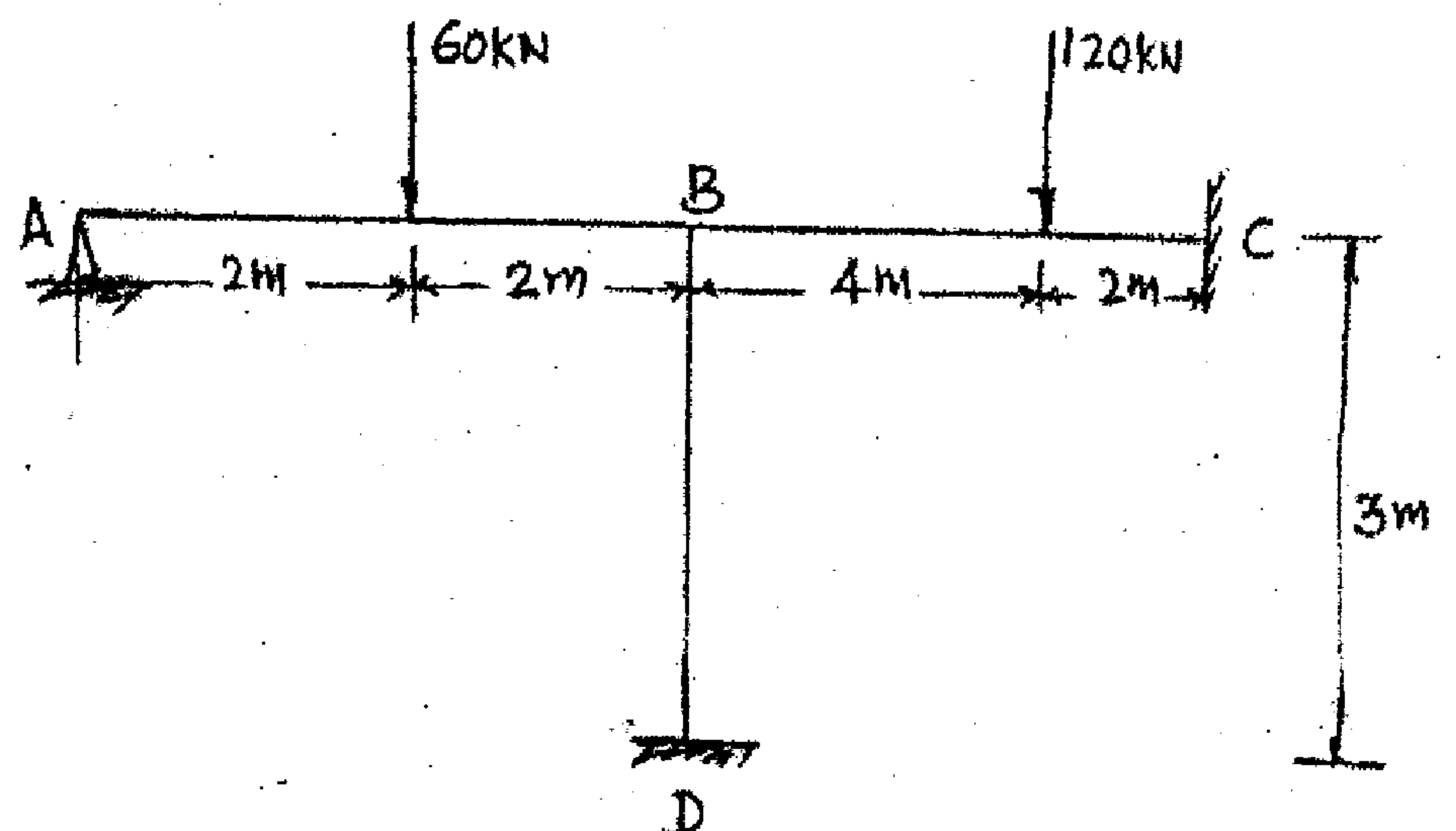


Fig. Q7

- 7 Analyse the frame shown in figure Q7 by the matrix stiffness method. (20 Marks)

- 8 Explain the following:
- Basic principles of dynamics.
 - Periodic and non-periodic loading.
 - Period and frequency.
 - Degrees of freedom.
 - Damping.

(20 Marks)
