Code: CE5T4

III B.Tech - I Semester – Regular Examinations - November 2014

STRUCTURAL ANALYSIS - II
(CIVIL ENGINEERING)

Duration: 3 hours   Marks: 5x14=70

Answer any **FIVE** questions.   All questions carry equal marks

1. A three hinged parabolic arch of 20m span and 4m central rise carries two point loads of 4kN and 6kN at distances 4m and 5m respectively from the left support. Calculate Normal Thrust and Radial Shear at a given section 6m from left support. Also Draw Bending Moment Diagram.   14 M

2. A two hinged parabolic arch of span 20m and rise 3.6m carries an uniformly Distributed load of 50kN per meter on the left half of the span. Find the reactions at the supports. Draw bending moment diagram stating position and amount of maximum moment.   14 M

3. A cable of span 120m and dip 12m carries a load of 16kN per meter run of horizontal span. Find the maximum tensions for the cable and the inclination of the cable at the support. Find the forces transmitted to the supporting pier, if the cable passed over smooth rollers on the top of the pier. The anchor cable is at 30 degrees to the horizontal. If the supporting pier is 20m high find the maximum bending moment for the pier.
14 M

4. Analyse the structure as shown in figure 1. Adopt Cantilever method of approximate analysis. Also Draw the BMD and SFD. **14 M**
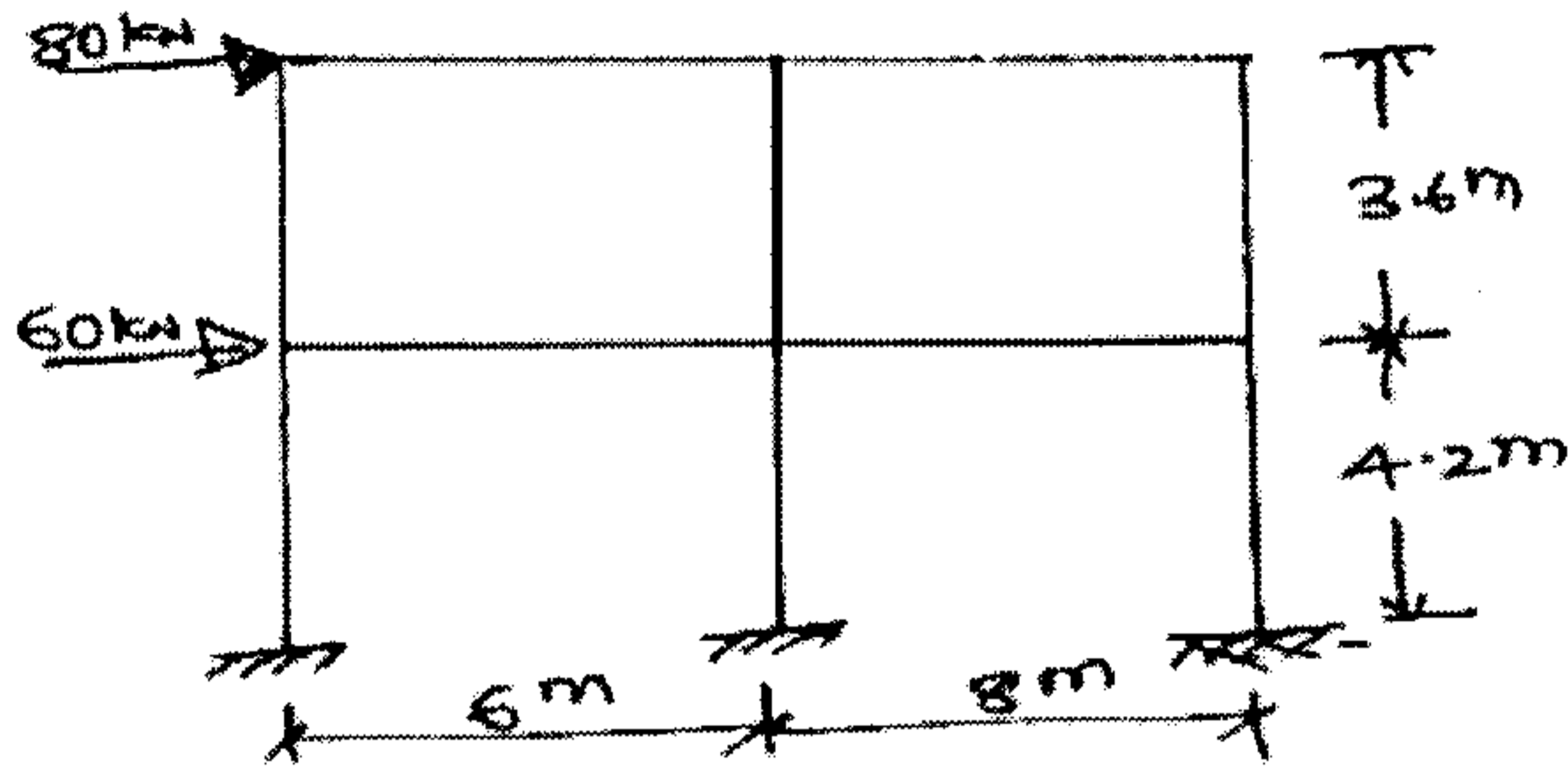

Figure-1

5. Analyse the structure as shown in figure 2. Adopt Moment Distribution Method of analysis. Also Draw the BMD and SFD very neatly. **14 M**
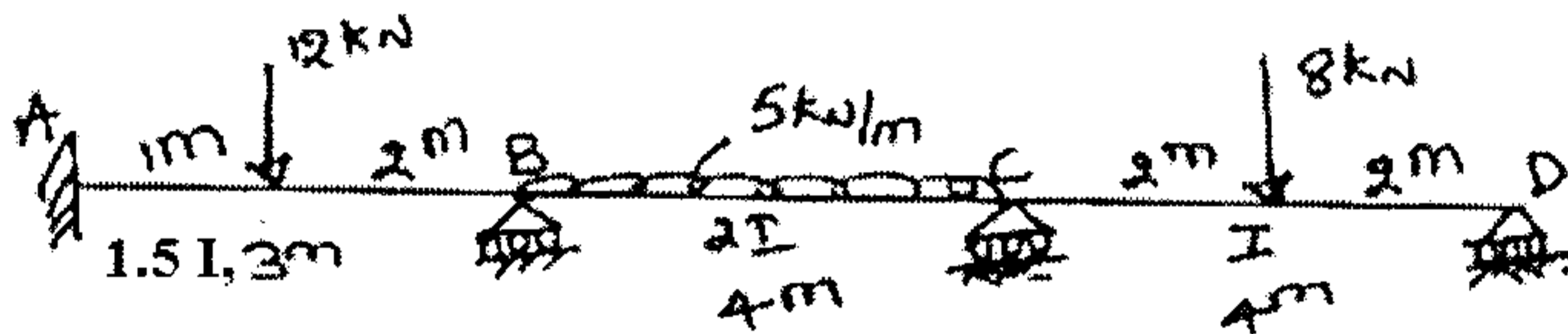

Figure-2

6. Using Kani's Method of analysis, Analyse the structure as shown in figure 3. Also Draw the BMD and SFD very neatly. **14 M**
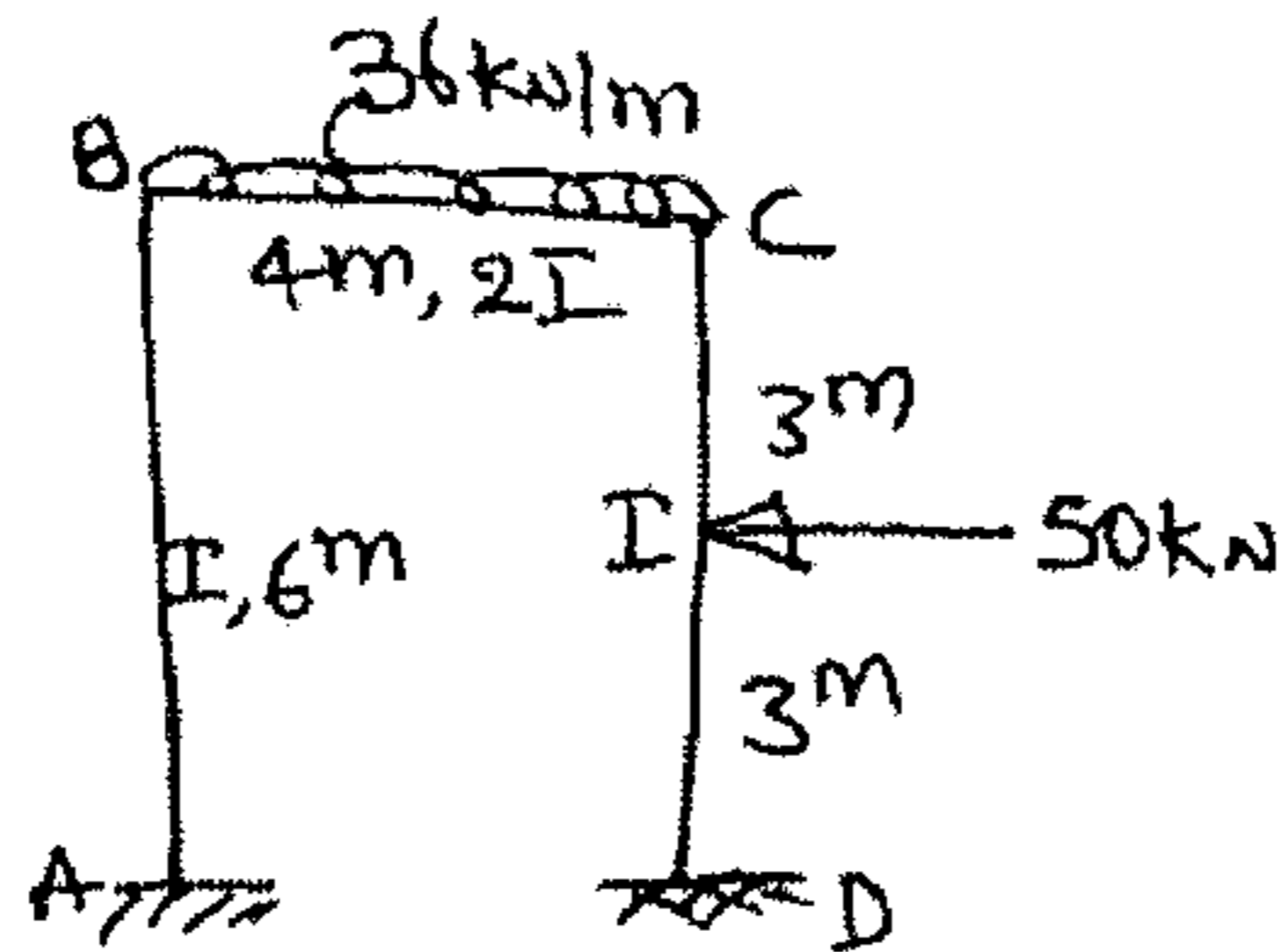
Figure-3

7. Using Flexibility Matrix Method of analysis, Analyse the structure as shown in figure 4. Also Draw the BMD and SFD. 14 M
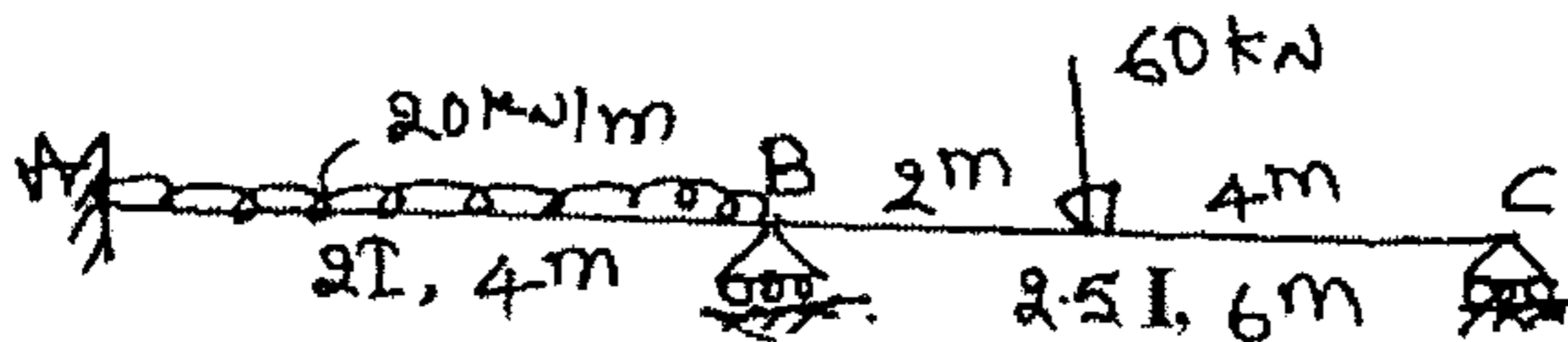

Figure-4

8. Using Flexibility Matrix Method of analysis, Analyse the structure as shown in figure 5. Also Draw the BMD and SFD. 14 M
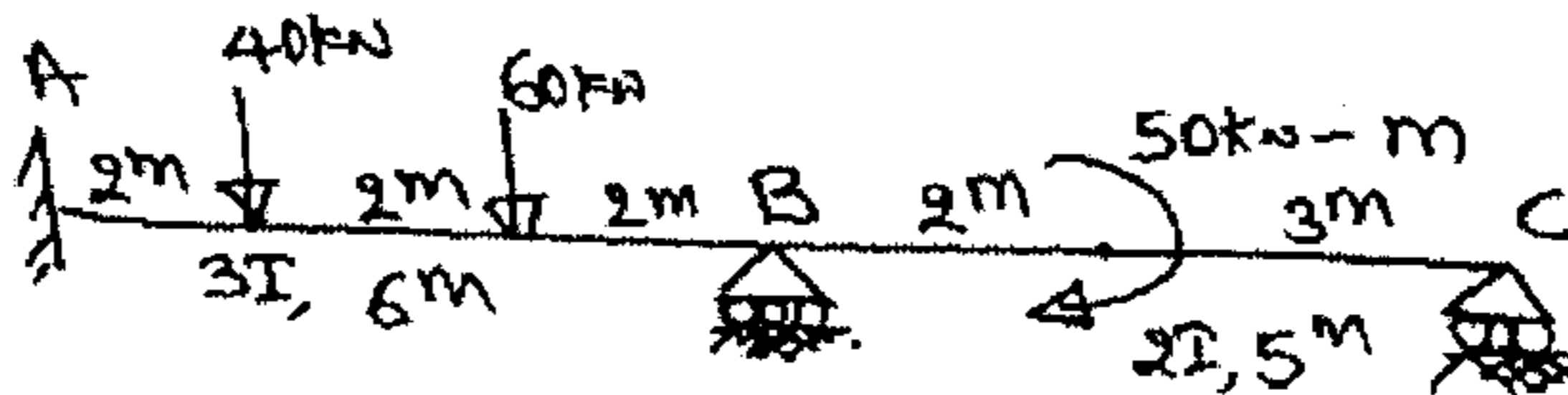

Figure-5