

B.Tech. CIVIL ENGINEERING (BTCLEVI)**Term-End Examination****December, 2015****BICE-016 : STRUCTURAL ANALYSIS – III***Time : 3 hours**Maximum Marks : 70*

Note : Answer any five questions. All questions carry equal marks. Assume missing data, if any. Scientific calculator is permitted.

1. Analyse the frame shown in Figure 1 by moment distribution method. Draw the bending moment diagram.

14

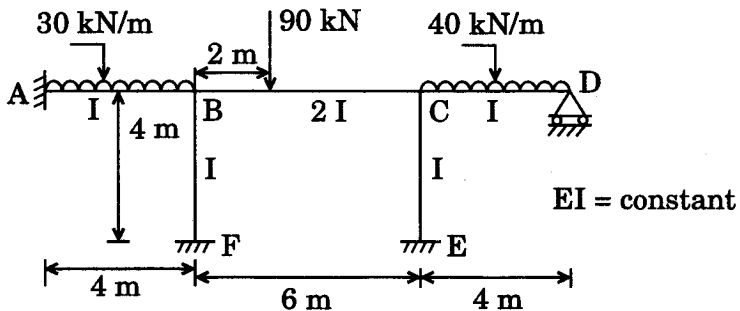


Figure 1

2. Analyze the continuous beam shown in Figure 2 by Kani's method.

14

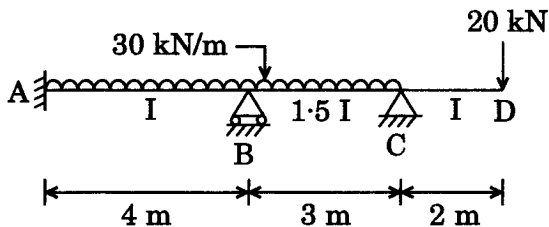


Figure 2

3. (a) Find the shape factor of I-section given in Figure 3.

7

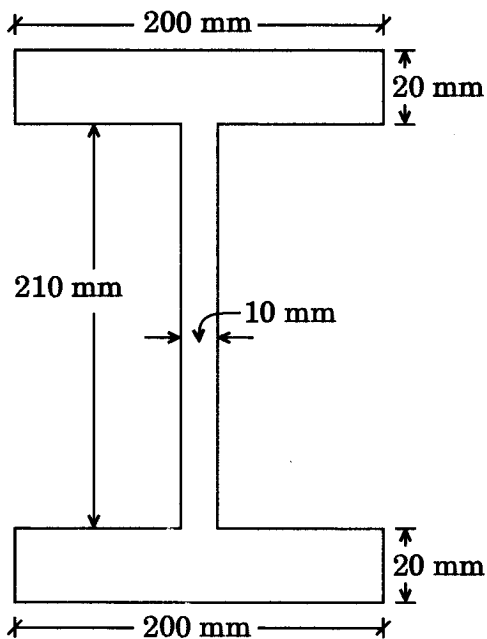


Figure 3

- (b) Write the advantages and disadvantages of indeterminate structure. 7
4. (a) Explain Müller-Breslau principle used for finding the influence line diagram of indeterminate structure. 6
- (b) Find the influence line diagram for reaction at B in the continuous beam as shown in Figure 4. Take EI as constant throughout. 8

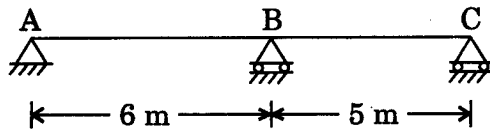


Figure 4

5. (a) Explain in detail the flexibility matrix method with a suitable example. 6
- (b) Analyse the continuous beam shown in Figure 5 by flexibility matrix method. 8

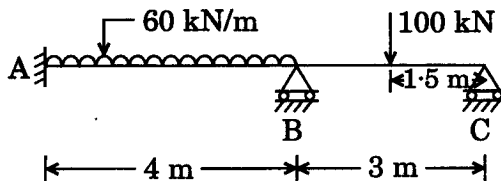


Figure 5

6. A continuous beam ABC is loaded as shown in Figure 6. Determine the required M_p , if the load factor is 3.2. 14

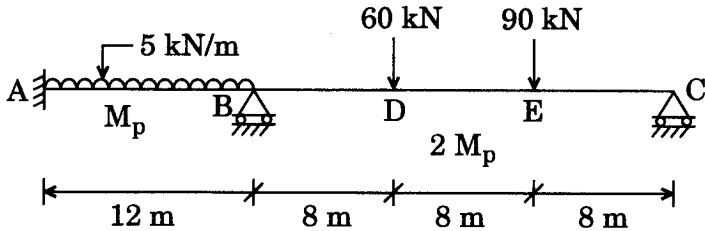


Figure 6

7. (a) Determine the kinematic indeterminacies of the frames and beams as shown in Figure 7. 8

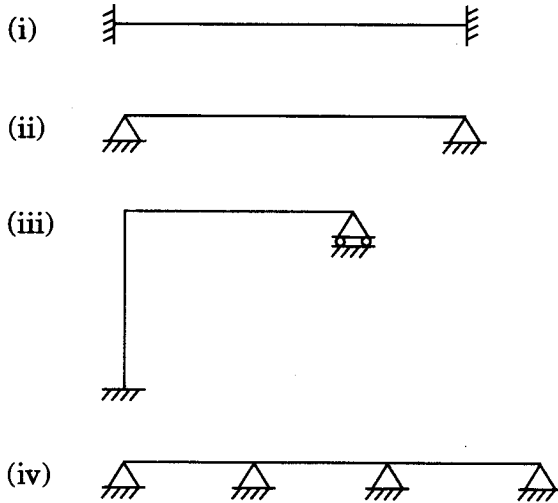


Figure 7

- (b) Explain briefly the cantilever method. 6