BICE-016

B.Tech. CIVIL ENGINEERING (BTCLEVI)

Term-End Examination

00215   December, 2014

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.*

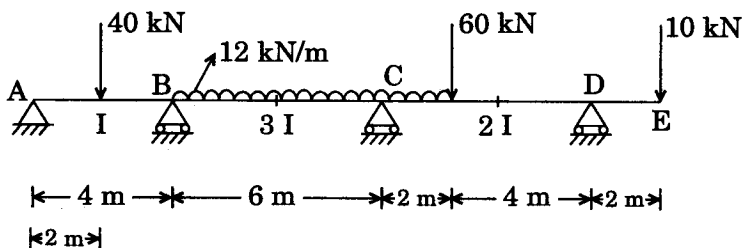1. Analyze the continuous beam shown in Fig. 1 by the Moment Distribution Method.   *14*

Fig. 1

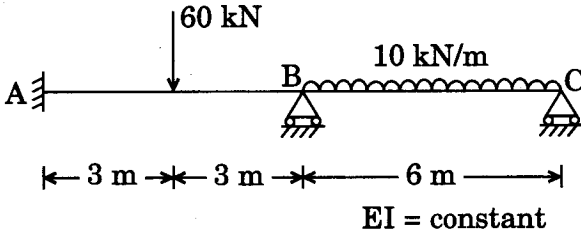**2.** Analyze the continuous beam of a uniform section shown in Fig. 2 by Kani's method. *14*

Fig. 2

3. Determine the load factor for the portal frame shown in Fig. 3 if plastic moment capacity of all members is 36 kNm. *14*
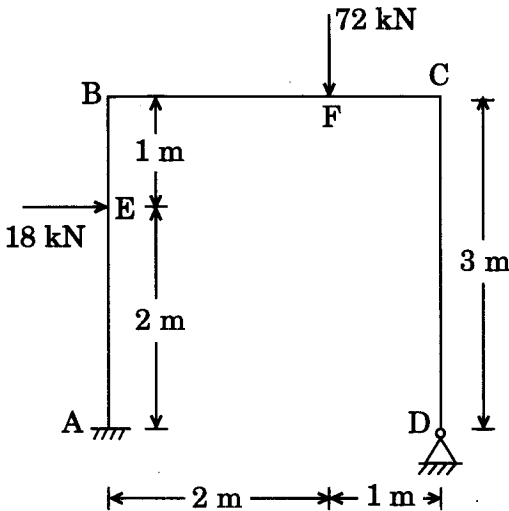

Fig. 3

4. For the fixed beam with internal hinge as shown in Fig. 4, obtain the equation of the influence lines for reaction at A and moment at A and B. *14*
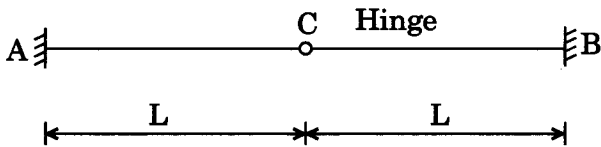
A⊣————————C Hinge————⊢B

|← L →|← L →|

Fig. 4

5. Analyse the non-prismatic fixed beam shown in Fig. 5 by Force Method. *14*

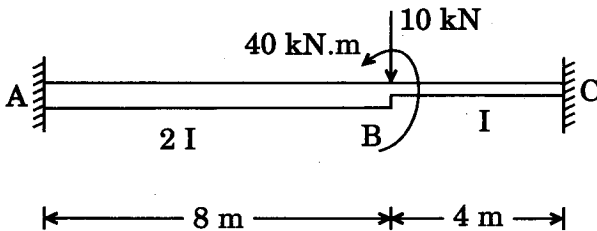A with 40 kN.m, 10 kN, 2 I, B, I, C

|← 8 m →|← 4 m →|

Fig. 5

6. (a) Compare Force Method and Displacement Method with suitable examples. *7*

   (b) Explain briefly the Cantilever Method. *7*

7. (a) Write the advantages and disadvantages of Indeterminate structures. *6*

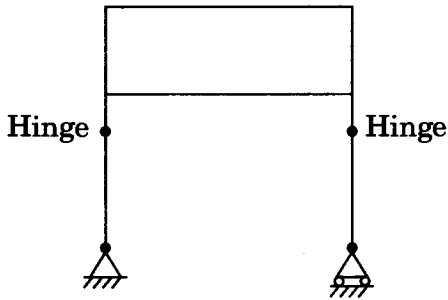(b)   Determine the Degrees of Indeterminacy for the rigid frames shown in Fig. 6 (i) and 6 (ii).   2×4=8
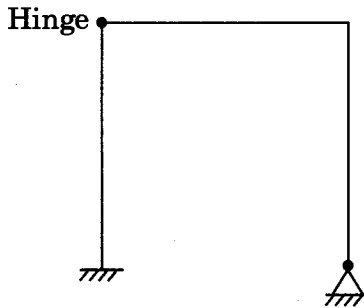

Fig. 6 (i)

Fig. 6 (ii)