

Roll No .....

**CE-601 (GS)****B.E. VI Semester**

Examination, May 2018

**Grading System (GS)****Theory of Structures-II**

Time : Three Hours

Maximum Marks : 70

- Note:** i) Attempt any five questions.  
 ii) All questions carry equal marks.  
 iii) Answer should be precise and to the point only.

1. a) Mention the cause of Side a way of portal frame. 4  
 b) Analyse the continuous beam shown in Figure 1 by flexibility matrix method. 10

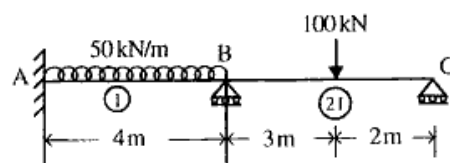


Figure 1

[2]

2. a) Find the shape factor for triangular section. 4  
 b) Determine collapse load in the fixed beam shown in Fig. 2. 10

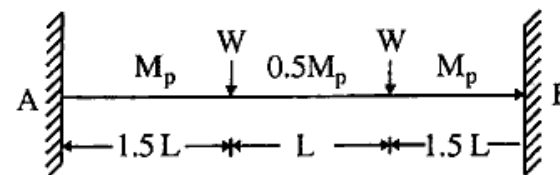


Fig. 2

3. a) Explain the method of calculation of wind load for a multistoried building as per IS:875. 4  
 b) Analyze the building frame subjected to horizontal forces using by portal method. Sketch BMD. 10

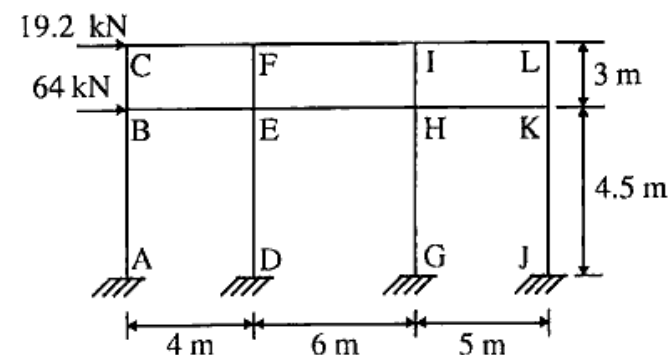


Fig. 3

4. a) Develop the displacement and force transformation matrices for a truss member. 4

[3]

- b) Analyze the continuous beam by using matrix flexibility method. Draw BMD. 10

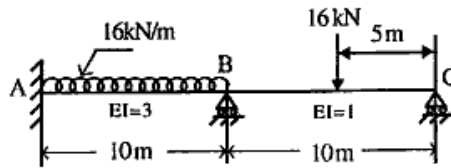


Fig. 4

5. a) Write a short note on structural behavior of tall building subjected to lateral forces. 4  
 b) Analyse the building frame subjected to horizontal forces using by cantilever method. Sketch BMD. 10

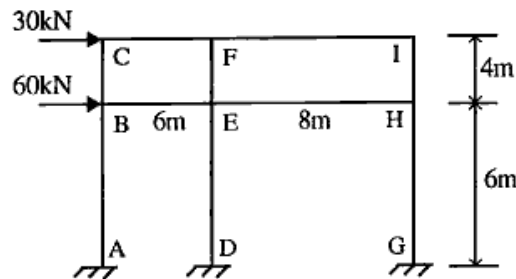


Fig. 5

6. a) Differentiate plastic analysis of structures with elastic analysis. 4  
 b) A fixed beam is shown in Fig. 6. Find the value of collapse load. 10

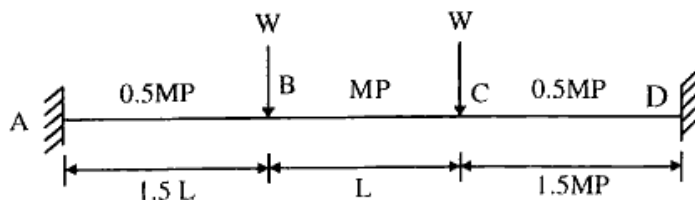


Fig. 6

[4]

7. Calculate the ordinates of influence line diagram for support moment  $M_B$  for continuous beam Shown in Fig. 7. Compute the ordinates at every 1m interval. 14

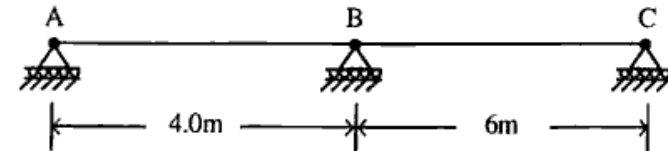


Fig. 7

8. Explain the following term (any four): 14  
 a) Influence line  
 b) Rotation factor  
 c) Muller Breslau principal  
 d) Plastic hinge  
 e) Shape factor  
 f) Distribution factor

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