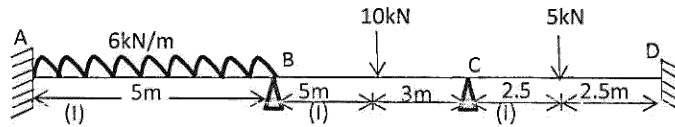8. A continuous beam of uniform section loaded with ultimate loads as shown in Fig. Determine the required plastic moment of resistance. **20**

W-471

B. Tech. (Weekend)
EXAMINATION, May 2018

(Fourth Semester)

(Re-appear Only)

(CE)

CEW202

STRUCTURAL ANALYSIS-II

*Time :* 3 *Hours*]   [*Maximum Marks :* 100

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt any *Five* questions. Assume any data if missing in the question paper.

1. Why stiffness method is called displacement method ? Write down the difference between force and displacement method. **20**

2. Analyze the rigid frame shown in fig. given below by flexibility matrix method : **20**
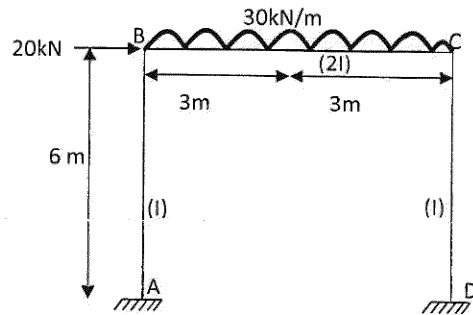
3. Analyze the continuous beam shown by stiffness method in which support reaction at A and B are treated as the redundant. Hence, calculate the bending moment at B. Assume flexural rigidity EI as constant for all the beams. **20**
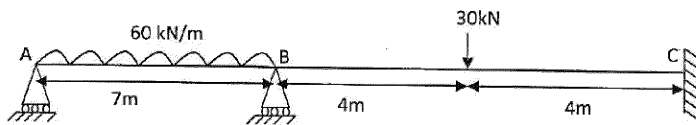
4. Define is global stiffness matrix. How the member forces are transformed in local co-ordinate to global co-ordinates. **20**

5. Develop the displacement transformation matrix for the structures shown in fig. and hence derive the stiffness matrix. Assume EI constant for all the members. **20**
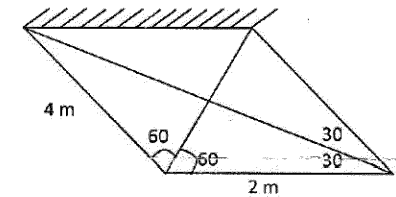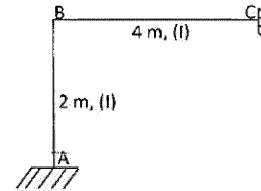
6. A cable of horizontal span 21m is to be used to support six equal loads of 50kN each at 3m spacing. The central dip of cable is limited to 2 m. Find the length of the cable required and also its sectional area if the safe tensile stress is 750 N/mm^2.

7. Define Finite Element Method (FEM) and explain the following : **20**

    (a) Hybrid approach

    (b) Mixed approaches in detail.