COURSE CODE (CREDITS): 18B11CE513(3)

COURSE NAME: Structural Analysis

MAX. MARKS: 35

COURSE INSTRUCTORS: Mr. Chandra Pal Gautam

MAX. TIME: 2 Hours

Note: All questions are compulsory. Marks are indicated against each question in square brackets.

Q1. (i) Derive Euler's formula for column and mention its limitation.

(ii) Discuss the advantages of Moment distribution method over Slope deflection equation.

(iii) Discuss the importance of effective length of a column and also mention the effective length of a column in different support conditions.

[2+2+2 = 6] [CO – 2 & CO -5]

Q.2. (i) Derive the lateral displacements of members of an inclined frame shown in figure -1 in term of angles and displacement provided.

(ii) Solve the given frame in figure -2 by using Slope deflection equation. [3+7 = 10] [CO - 4]
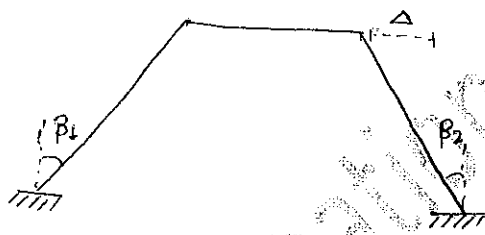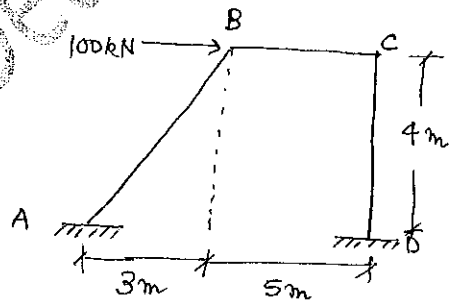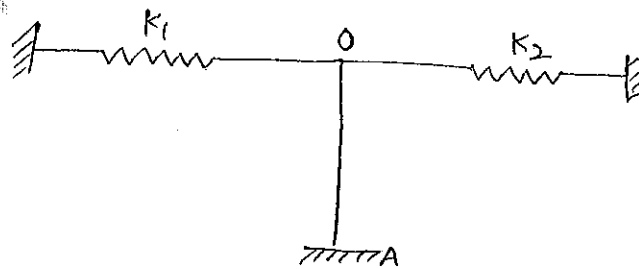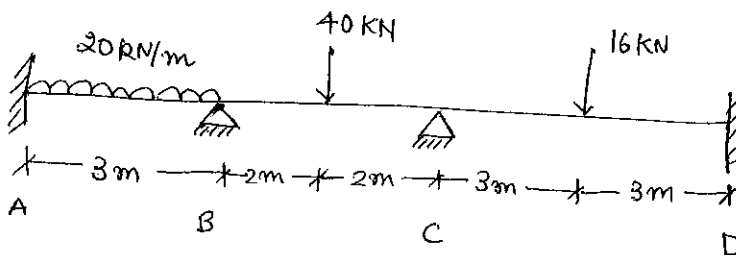

Fig -1

Fig -2

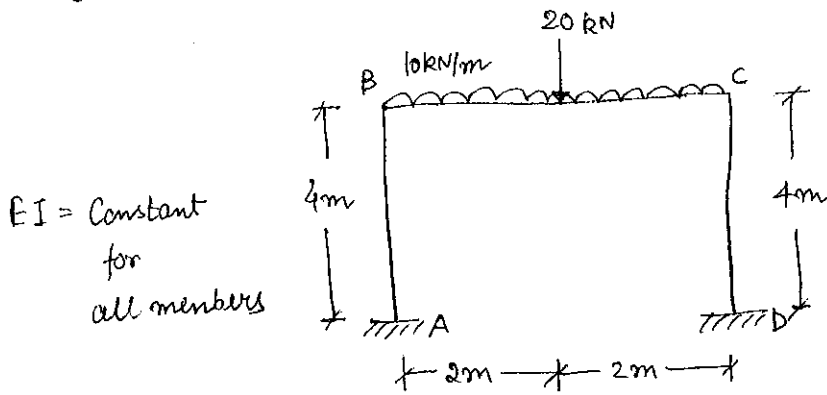Q.3. For the given column OA having length L, find the critical load of failure. [5] [CO - 5]

Q.4 Solve the given beam by using Moment distribution method. [7] [CO - 4]

Q.5. Solve the given frame by using Moment distribution method and find the end moments.

[7] [CO -3 & CO - 5]

EI = Constant
for
all members