Ministry of Higher Education
Giza Higher Institute for Eng. & Tech.
Civil Engineering Department
Course Name: **Theory of Structures (4)**
Course Code : **CIV 302**

Academic Year : **2016-2017**
Semester : **Second**
Level : **3rd**
Time : **1½ Hours**
Date : **30 / 3 / 2017**
Examiner: ***Dr. M. Abdel-Kader***

Mid-Term Exam

- The Exam consists of **2** questions in **1** page.

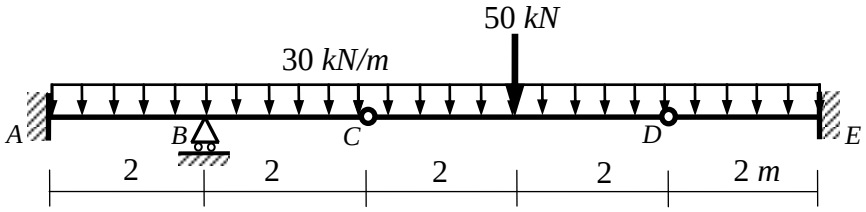
Question (1): (10 Marks)

For the shown beam, using the **three-moment equation**:

(a) Draw the shear force and bending moment diagrams due to the given loads.

(b) Calculate the moment at fixed support *A* due to settlement of support *B* by an amount of 1 *cm*.

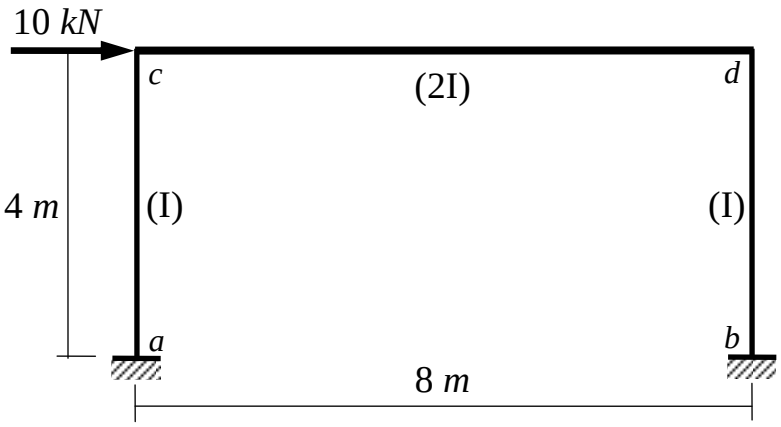
$EI = 40000\ kN.m^2$



Question (2): (10 Marks)

For the shown frame, using the **Consistent Deformations** (**Virtual Work**) method, draw the bending moment diagram due to the applied load.

Note that the relative moments of inertia are given between brackets as shown and E is constant.



With my best wishes
Dr. M. Abdel-Kader