Ministry of Higher Education Giza Higher Institute for Eng. & Tech.

Civil Engineering Department

Course Name: Theory of Structures (2)

Course Code: CIV 202



Academic Year: 2013-2014

Semester: Second

 $\text{Level}: 2^{nd}$ Time: --- Hours Date: 27/4/2014

Examiner: Dr. M. Abdel-Kader

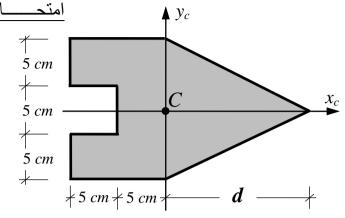
رقم الكود: الاسم:

ان منتصف الترم  $\downarrow y_c$ 

- The Exam consists of 2 questions in 2 pages.

### **Question (1): (10 Marks)**

For the shown area where the centroid is given as shown, determine the distance d.



### **Solution of Question (1)**

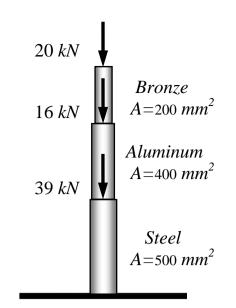
# Question (2): (10 Marks)

A column of variable cross-section is subjected to axial loads as shown.

Check if the column is safe or not.

#### **Given Data:**

Allowable stress for bronze = 100 *MPa* Allowable stress for aluminum = 90 *MPa* Allowable stress for steel = 140 *MPa* 



## **Solution of Question (2)**