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 : 2015-2016

Semester : **Second**

Level: 2^{nd}

Time: $1\frac{1}{2}$ Hours
Date: 3/4/2016

Examiner: Dr. M. Abdel-Kader

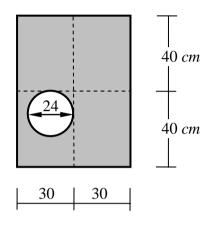
Mid-Term Exam

- The Exam consists of 2 questions in 1 page.

Question (1): (12 Marks)

For the shown cross-section, determine the following:

- (a) The location of the centroid.
- (b) The moments of inertia about the centroidal axes.
- (c) The direction of the principal axes.
- (d) The principal moments of inertia.



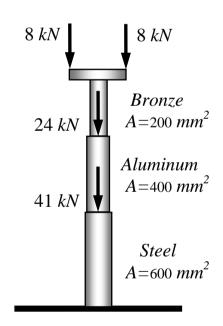
Question (2): (8 Marks)

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*



With my best wishes

Dr. M. Abdel-Kader