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 : **2014-2015**
Semester : **Second**
Level : **2nd**
Time : **1½ Hours**
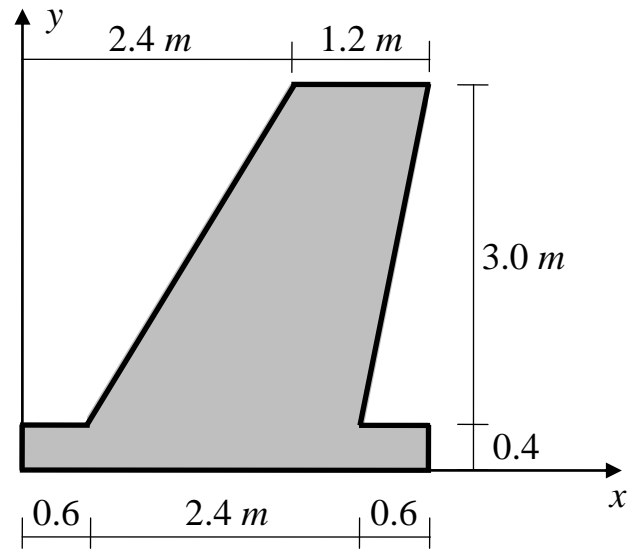Date : **29 / 3 / 2015**
Examiner: *Dr. M. Abdel-Kader*

Mid-Term Exam

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

Question (1): (12 Marks)
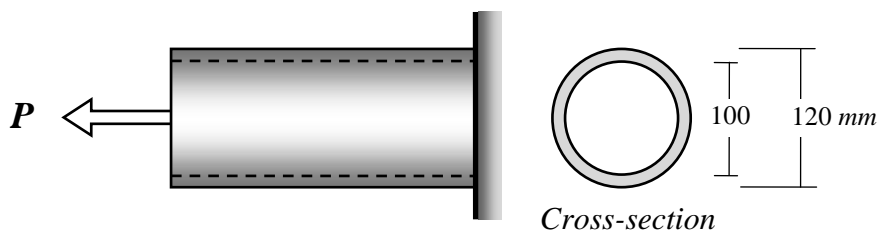
For the shown cross-section, determine the following:

(a) The location of the centroid ($\bar{x}$, $\bar{y}$).

(b) The moments of inertia about the centroidal axes (I_{xc}, I_{yc}).

Question (2): (8 Marks)

A hollow steel tube with an inside diameter of 100 *mm* and outside diameter of 120 *mm* carries a tensile load *P* as shown in the figure.

(a) Determine the normal stress in the tube if the load *P* =300 *kN*.

(b) If the allowable stress of steel is 120 *MPa*, determine the maximum safe value of load *P*.

With my best wishes
Dr. M. Abdel-Kader