Menofia University **Faculty of Engineering** **Academic Year: 2014-2015** **Department: Basic Eng. Sci.**	**Subject: Computer Science** **Time Allowed: 3 hours** **Date: 6 / 6 / 2015** **Max Marks: 100**

Answer all the following questions:

Q.1	(A) Write what you know about data transformation, Database design and computer architecture? (B) What are the main differences between operating systems for mainframe computers and personal computers? (C) List the four steps that are necessary to run a program on a completely dedicated machine (D) What is the main difficulty that a programmer must overcome in writing an operating system for a real-time environment? (E) How does the distinction between kernel mode and user mode function as a rudimentary form of protection (security) system? **[Q.1 (40 mark)]**
Q.1	(A) What are the three main purposes of an operating system? (B) What is the difference between data and information? (C) What is an information system? What activities does it perform? (D) List and describe six reasons why information systems are so important for business today (E) What is the purpose of system calls? **[Q.1 (30 mark)]**
Q.2	(A) What are the five major activities of an operating system in regard to process management? (B) What are the three major activities of an operating system in regard to memory management? (C) What is the purpose of system programs? (D) What is the main advantage of the layered approach to system design? What are the disadvantages of using the layered approach? **[Q.1 (30 mark)]**

With my best wishes   *Dr. M.A. El-Shorbagy*