



Course Title: Real-Time Computer Control Systems	Date: 24/11/2011
Course No: (630581)	Time Allowed: 1 Hour
Lecturer: Dr. Mohammed Mahdi	No. of Pages: 1

Question 1: **(7.5 Marks)**

Objectives: This question is about the basic concepts RTCCS.

For the following, correct (if is wrong) then explain the right answers briefly: -

1. Wide range of control settings can be applied using Direct Digital Control (DDC) scheme.
2. It is not necessary to include Man Machine Interface (MMI) to RTCCS.
3. Several Real-time tasks may be in READY state.
4. Round Robin scheduling strategy responds to interrupts so fast.
5. Efficiency in real-time languages is measured nowadays by the way of writing codes.

Question 2: **(6 Marks)**

Objectives: This question is about computer control schemes and data transfer.

Explain the following briefly: -

1. Sampling time is considered as a critical design parameter in RTCCS.
2. In supervisory control scheme the computer is not directly involved in the dynamic feedback control.
3. Kind of data transfer techniques is chosen based on the speed of the output device.

Question 3: **(6.5 Marks)**

Objectives: This question is about the design of DDC system.

Given a simple industrial plant which receives two analog signals in the range of 0-10 volt, and produces two analog signals in the range of 0-5 volt, it is required to design a full DDC scheme that also includes Interrupt and Alarms facilities.