UNC Charlotte, Department of Electrical and Computer Engineering
ECGR 4101/5101, Spring 2010, Homework #6

You will need to refer to the M16 Software Manual, the M16 Hardware Manual and M16 C Language Programming Manual to complete this assignment. They are available online through the documentation contained in the SKP16C26 directories link on the course home page.

1. (1 point) What happens if two interrupt requests occur within the same clock cycle?

2. (1 point) Name the Interrupt Service Routine (ISR) does nothing?

3. (2 points) When program control is transferred from the main code to an ISR, what all data get pushed into the stack?

4. (4 points) Consider an ISR for our Renesas board (12 Mhz clock) that gets executed with a response time of 27 cycles and execution time of 22 cycles. Calculate the maximum interrupt frequency and time period assuming the REIT instruction has been executed in the ISR and the program control returns to the main code.

5. (12 points) Consider a QSK62P board connected to a PC with the following setup

   Baud Rate = 350, 8 data bits, 1 stop bits, even parity, 12 Mhz system clock

   a) What should be the clock count used (f1, f8 or f32) for effective transmission? Why?

   b) What should be the *u0brg* value for the fastest transmission?

   c) Write a C code to transmit the data using *uart0*. Do not use ISRs. Include setup details of all the control registers.