ENGI 4862 Spring 2017 Prelab 3

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Answer all of the following questions before coming into the lab. You will lose marks if your prelab is incomplete.

1. What are the registers related to each port of AVR microcontroller?

Register, $1B controls PORTA, register $18 controls PORTB, register $15 controls PORTC, and register, $12 controls PORTD.

2. Describe the duty of each register in the previous question.

PORTA serves as the analog inputs to A/D Converter but, it can also serve as 8-bit bi-directional I/O port. PORTB, PORTC, and PORTD are 8-bit bi-directional I/O ports.

3. What is the difference between push-button and slide-style switches?

A push-button switch has a knob that you push in order to open and close contacts. Slide-style switches have a knob that you slide back and forth in order to open and close contacts.

4. How does unsigned multiply instruction of ATmega32 work? Refer to Page 0-103 on the Course Manual.

The unsigned multiply instruction (MUL) works by multiplying the contents of two registers together and it stores the result in R1 (high byte) and R0 (low byte).

5. Sketch a circuit diagram of the interface described in the lab. You should be ready to start building your circuit as soon as you come into the lab.

6. Write an assembly language program to implement an 8-bit unsigned number multiplier. Check Section 3 in the lab description for the requirement details.