16.317: Microprocessor Systems Design I
Spring 2012

Lecture 30: Key Questions
April 13, 2012

1. Explain how different memory banks are accessed in PIC microcontrollers, and what the general function of each bank is.

2. Briefly describe the contents of the STATUS register.

3. Explain direct addressing on the PIC microcontrollers.

4. **<u>Example:</u>** What address on the PIC16F684, which has 2 banks, is being accessed if:
*   STATUS = 60h, instruction = 031Fh?

*   STATUS = 40h, instruction = 1F02h?

*   STATUS = 13h, instruction = 0793h?

*   STATUS = EEh, instruction = 03F1h?

5. Explain indirect addressing on the PIC microcontrollers.

6. Explain how I/O ports are managed through special function registers. In the example
    below, what bits of PORTA are inputs? What bits are outputs?

```
bcf         STATUS, RP0    ; bank0
bcf         STATUS, RP1
clrf        PORTA          ; initializing PORTA by
                           ; clearing output data latches
 bsf        STATUS, RP0    ; select bank1
movlw       0xCF           ; value used to initialize
                           ; data direction
 movwf      TRISA
```