16.317: Microprocessor Systems Design I

Fall 2012

Lecture 20: Key Questions
October 26, 2012

1. 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
```

2. Describe the instruction formats of the PIC 16F684.

3. Describe how variables can be declared in PIC assembly language.

4. Describe the PIC instructions for clearing or moving registers.

5. Describe the PIC instructions for manipulating a single bit.

6. **Example:** Show the values of all changed registers after the following sequence

```
cblock     0x30
      x
      Y
endc
clrw
movwf      x
movlw      0xFE
movwf      y
swapf      y, F
bcf        y, 3
bsf        x, 3
movf       y, W
```