

EECE.3170: Microprocessor Systems Design I

Fall 2016

Lecture 22: Key Questions

October 31, 2016

1. (Review) Describe the PIC instructions used for multi-bit bitwise operations.

2. (Review) Describe the PIC shift and rotate instructions.

3. **Example:** Show the values of all changed registers after the following sequence. Assume the carry bit is initially 0.

```
cblock    0x40
        z
endc
```

```
clrf     z
movlw   0xF0
iorwf   z, F
xorlw   0xFF
rrf     z, F
andwf   z, W
lslf    z, F
asrf    z, F
```

4. Describe the PIC control flow instructions.

5. Describe the instructions used for conditional execution on the PIC 16F1829.

6. **Example:** Show the values of all changed registers after each of the following sequences.
What high-level operation does each perform?

a. `movf a, W`
`sublw 0x1A`
`btfs STATUS, Z`
`goto L1`
`incf b, W`
`goto L2`
L1
`decf b, W`
L2
`movwf a`

b. `movf NUM2, W`
`subwf NUM1, W`
`btfs STATUS, C`
`goto BL`
`movf NUM1, W`
`goto Done`
BL
`movf NUM2, W`
Done
`movwf MAX`