

# 16.317: Microprocessor Systems Design I

Spring 2012

## Lecture 32: Key Questions

April 20, 2012

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

```
cblock      0x20
```

```
    varA
```

```
    varB
```

```
    varC
```

```
endc
```

```
clrf      varA
```

```
clrf      varC
```

```
incf      varA, W
```

```
sublw     0x0F
```

```
addwf     varB, F
```

```
decf      varB, F
```

```
comf      varB, W
```

```
subwf     varC, F
```

2. Describe the PIC instructions used for multi-bit bitwise operations.

3. Describe the PIC rotate instructions.

4. **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
rlf        z, F
```

5. Describe the PIC goto, call, and return instructions.

6. Describe the clrw, sleep, and nop instructions.