

Spring 2014

JLS

Problem 25: Lab instructor will note whether or not the circuit for problem 25 is completed.

Problem 26

```

void initialize_IO_ports (void) {
    ANSELbits.ANSA0 = 0;
    ANSELbits.ANSB1 = 0;
    TRISAbits.TRISA0 = 1;
    TRISAbits.TRISA2 = 1;
    TRISBbits.TRISB1 = 0;
    TRISBbits.TRISB13 = 0;
}

```

Peripheral pin 2 (RA0) and pin 5 (RB1) set for Digital I/O

RA0 & RA2 set for digital input

RB1 & RB13 set for digital output

1. Peripheral pin 2 is set for digital input on port A line 0 (RA0).
- Peripheral pin 9 is set for digital input on port A line 2 (RA2).

Problem 26

2. Peripheral pin 5 is set for digital output using port B line 1 (RB1).

Peripheral pin 24 is set for digital output using port B line 13 (RB13).

3. Two of the digital lines, RA2 and RB13, are associated with peripheral pins, 9 and 24 respectively, that are not associated with analog peripheral features. For this reason, it is not necessary to use the ANSEL_x (x=A, B) registers to configure pins 9 and 24 for digital I/O.

Problem 26

4. During execution of the while-loop

```
do {
    a = PORTAbits.RA0;
    b = PORTAbits.RA2;
    LATBbits.LATB1 = a ^ b;
    LATBbits.LATB13 = !(a & b);
    c = a | b;
}
while (c == 1);
```

$$RB1 = RA0 \overset{\downarrow \text{XOR}}{\sim} RA2 = \frac{RA0 \oplus RA2}{RA0 \ RA2}$$

$$RB13 = \underset{\uparrow \text{AND}}{!(RA0 \& RA2)}$$

INPUT		OUTPUT	
RA0	RA2	RB1	RB13
0	0	0	1
0	1	1	1
1	0	1	1
1	1	0	0