ECE 3724/CS 3124 Quiz #6 Reese NAME: _____

Answer each of the following questions (you can use a calculator)

a. Write C code that prints "Watchdog Timer reset occurred" if WDT reset has occurred, or "Power-On Reset occurred" if a power-on reset has occurred.

```
if (!bittst(RCON,1)) {
 printf("POR reset occurred!\n");
 bitset(RCON,1);
}
if (!bittst(RCON,3)){
 printf("WDT reset occurred!\n");
}
```

```
if (!POR) {
 printf("POR reset occurred!\n");
 POR = 1;
}
if (!TO){
 printf("WDT reset occurred!\n");
}
```

b. Assume the current consumption for PIC18 operating at 5V and 40 MHz is 35 mA. If the voltage is lowered to 3V, and clock frequency remains the same, what does theory predict the new current consumption will be?

40 ma = C * 5V*5V * Freq; ?? ma = C * 3V * 3V * Freq
The C, Freq are the same for both cases, so
??/(3*3) = 40 mA/(5*5)
?? = 40 mA * 9/25 = 14.4 mA

c. How do you prevent the watchdog timer from going off if it is enabled? (the WDT must remain enabled, you cannot turn it off)

Use the CLRWDT instruction.

d. How is sleep mode entered and where does execution resume when the PIC18 is woken from sleep mode?

Use the SLEEP instruction; execution resumes at the instruction after the SLEEP instruction.

e. List the event sequence that occurs when a high-priority interrupt occurs on the PIC18.

GIE bit cleared to 0; W, STATUS, BSR saved in shadow registers, then jump to location 0x0008