Assignment 3

The due date for submitting this assignment has passed.

1. A microcontroller with 16 MHz clock requires 10 clock cycles to process any square. Which analog signal with the maximum frequency component given below for the microcontroller successfully sample?
   - 16 MHz
   - 1 MHz
   - 0.5 MHz
   - 0 kHz

2. What is the value of the sine wave that is TRUE about the oscillator?
   - Tj is used in Oscillator Programming (OP)
   - Oscillator program memory section communicates with the host computer to write a new program to oscillator program memory
   - Oscillator program memory section communicates with the host computer to write a new program to user program memory which is the larger portion of the memory
   - The program is incorrect
   - All above

3. A timer watching timer with a clock of frequency 1 MHz is there in a microcontroller. Within how many time should the program reset watching timer by a pulse before the watching timer resets the microcontroller?
   - 10 μs
   - 10 ms
   - 10 s
   - 0 μs
   - 0 s

4. When do the contents of RAM get affected by Power-On reset and User reset respectively?
   - No change, No change
   - Address, Value
   - No change, Address
   - Address, Value
   - No change, Value

5. Which of the following is the best way to add a user reset switch to a microcontroller if the user reset is active low?
   - 0 points
   - 1 point
   - 2 points
   - 3 points
   - 4 points

6. Why do we need to reduce Consistent Current?
   - Lower Consistent current directly relates to better battery life
   - A battery can be used in these regulations to keep them coming
   - It is used to program the Consistent current does not need to be used and so has to be driven
   - None of the above

7. When battery voltage is always above 3.5V and the required output voltage from a voltage regulator needs to be 2V what kind of voltage regulators could be used?
   - Linear
   - Buck
   - Boost
   - None of the above

8. A linear regulator is 90% efficient if the output voltage is 3V and current is 100 mA. Input voltage is 1 V, what is the input current?
   - 100 mA
   - 1 mA
   - 10 mA
   - 1000 mA

9. Put the following circuit, if YIZ is 1V work, what is the value of Z? A linear regulator looks in series with the Zener diode.
   - 0 points
   - 1 point
   - 2 points
   - 3 points
   - 4 points

10. Which of the following is an important consideration for a battery?
    - Charging rate
    - Power source
    - Voltage
    - Number of charging and discharging cycles
    - None of the above

11. Which of the following is incorrect?
    - 0 points
    - 1 point
    - 2 points
    - 3 points
    - 4 points