

microLab First Exercise

Arad Hesadi – 962023009

Question 1 :

In reality, the microcontroller needs to be connected to a power source along with a ground wire. But in the Proteus CAD program, the microcontrollers are automatically initialized to operate without power (VCC) or ground. But, the reset functionality of the microcontroller, needs to be implemented; Thus, using the circuit below, the microcontroller is good to go.

Question 2 :

w, the resistor here works as a pull-up resistor. Generally, these resistors have the resistance of about 10KΩ. Now, based on what delay is desired (T) Using the $T = RC$ Formula, the capacitor's capacity can be calculated, which is normally about 10nF.

Question 3 :

by using the formula $R = \frac{V_S - V_F}{I_S}$ the R1 value can be calculated easily.

If $V_S = 10V$, $V_F = 5V$ and $I_S = 50mA$, R would be 100Ω