

## Exercises

### Lab 04

①) Generated waveform =  $F_{oscillator}$

$$256 \times N \leftarrow \text{pre scalar value}$$

since TCNT0 is 8 bit

(we are considering TCNT0 count from 0x00 to 0xFF  $\rightarrow$  i.e. 256 counts)

$$978.56 \text{ Hz} = \frac{16 \text{ MHz}}{256 \times N}$$

$$N \approx 64$$

To set the duty cycle of 50%  $\Rightarrow$

$$256 \times \frac{1}{2} \times 50\% = 128$$

$$\therefore \text{DCA0A} = 128$$

Assume a timer counter with 2 bits  
For Duty cycle 50%  $\rightarrow$  PWM

