

MICROPROCESSOR BASED SYSTEM DESIGN LAB

Open Ended Lab



Spring 2021

CSE307L MBSD Lab

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Class Section: **B**

“On my honor, as student of University of Engineering and Technology, I have neither given nor received unauthorized assistance on this academic work.”

Student Signature: _____

Submitted to:

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Monday, June 21, 2021

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Task 1:

Write a program to generate 50 KHz signal with 33% duty cycle.

Code:

```
#include <reg51.h>
#include <stdio.h>
```

```
sbit Led = P2^0;
```

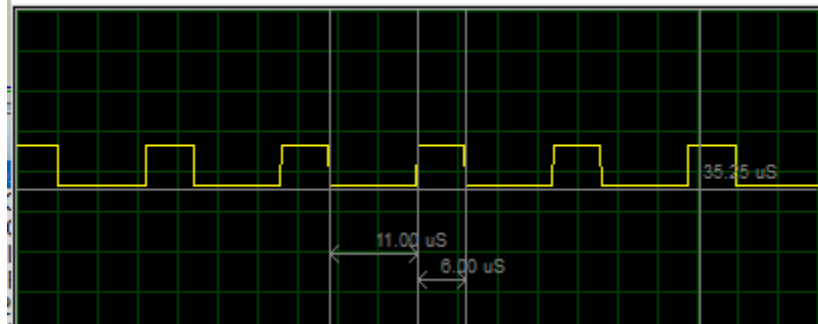
```
void timer() interrupt 1
{
    if(Led)
    {
        TH0 = 0xFF;
        TL0 = 0xF2;
    }
    else
    {
        TH0 = 0xFF;
        TL0 = 0xF8;
    }
    Led = ~Led;
}
```

```
void init()
{
    TMOD = 0x1;
    //IE = 0x81;
    EA = 1;
    ET0 = 1;
    TH0 = 0xFF;
    TL0 = 0xF8;
}
```

```
void main(void)
{
    init();
    TR0 = 1;
    while (1)
    ;
}
```

Output / Graphs / Plots / Results:

Digital Oscilloscope



Task 2:

Write a program to generate 20 KHz signal with 75% duty cycle.

Code:

```
#include <reg51.h>
#include <stdio.h>
```

```
sbit Led = P2^0;
```

```
void timer() interrupt 1
{
    if(Led)
    {
        TH0 = 0xFF;
        TL0 = 0xF2;
    }
    else
    {
        TH0 = 0xFF;
        TL0 = 0xD9;
    }
    Led = ~Led;
}
```

```
void init()
{
    TMOD = 0x1;
    EA = 1;
    ET0 = 1;
    TH0 = 0xFF;
    TL0 = 0xD9;
}
```

```
void main(void)
{
    init();
    TR0 = 1;
    while (1)
    ;
}
```

Output / Graphs / Plots / Results:

Digital Oscilloscope

