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Subject → Micro

D/p → Electrical

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①

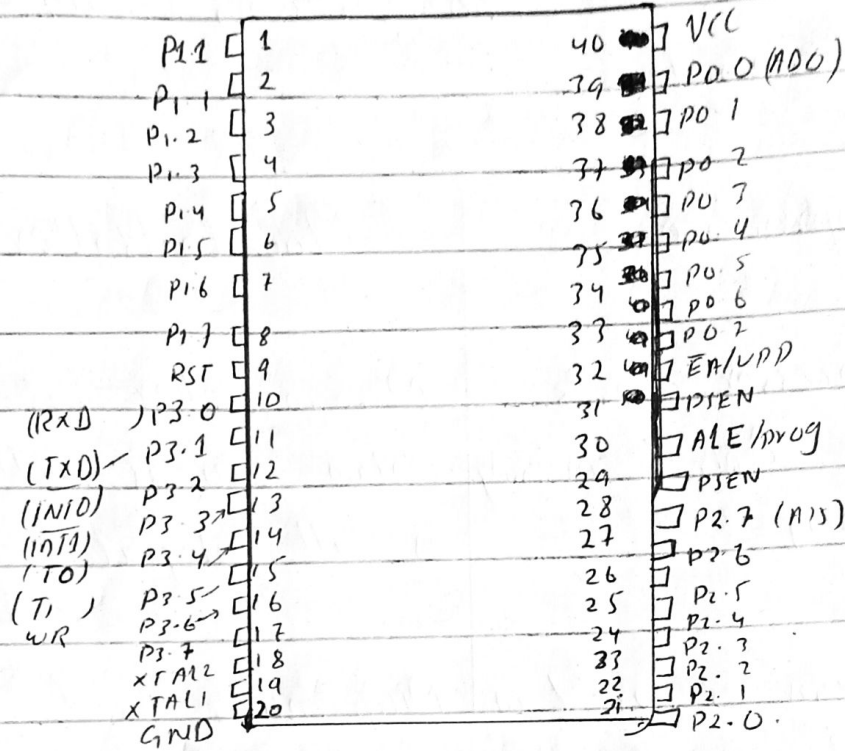
QNO1

(a) Difference b/w Microprocessors and micro-controller:-

Microprocessor	Micro-Controller.
① Micro processor consists only a Central processing unit (CPU)	Micro controller is contain CPU as well as all Integrated circuits.
② Microprocessor is used in personal computer	Micro controller used in Embedded system
③ Microprocessor have RAM, ROM, and other peripherals	Micro controller uses an internal controlling bus.
④ Microprocessor is complicated and expensive	Micro controller is inexpensive.

(2)

(b) Pin diagram of 8051:



Microcontroller 8051 consists of 40

pins.

(c) Answer

There are 2 hardware timers are present in 8052.

(3)

Q) Answer:

Port 0:- It has 8 pins (32 to 39). It can be used for input or output. We normally connect P0 to 10k ohm pull-up resistors to use it as an input or output port being an open drain.

Port 2:- Port 2 occupies a total of 8 pins (pins 21 through 28) and can be used for both input and output operation. P2 does not require external pull-up resistors because they are already connected internally.

Port 3:- It is also of 8 bits (pins 10 through 17) and can be used input/output. This port provides some extremely important signals.

(4)

(E)

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

```
void T1M1 Delay (void);
```

```
void T1 M1 Delay (void){
```

```
TMOD = 0X10;
```

```
TL1 = 0XFE;
```

```
TH1 = 0X A5;
```

```
TR1 = 1;
```

```
while (TF1 == 0);
```

```
TR1 = 0;
```

```
TF1 = 0;
```

```
}
```

$$A5FEH = 42494$$

$$65536 - 42494 = 23042$$

$$46083 \times 1.6385$$

$$= 56.384m$$

(A)

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

```
void T1M1 Delay (void);
```

```
8bit mybit = P1^5;
```

```
void T1M1 Delay (void){
```

```
TMOD = 0X01;
```

```
TLO = 0XFD;
```

```
TH0 = 0X4B;
```

```
TR0 = 1;
```

```
while (TF0 == 0);
```

```
TR0 = 0;
```

```
TR0 = ;
```

```
}
```

$$FFFFH - 4BFDH = B402H$$

$$= 46082 + 1 = 46083$$

$$= 46083 \times 1.085 \mu s$$

$$= 50 ms$$

(5)

QNO2:

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

```
sbit button 1 = P1^0,
```

```
sbit button 2 = P1^1;
```

```
sbit out 1 = P3^0;
```

```
sbit out 2 = P3^1;
```

```
void main()
```

```
{
```

```
if (button 1 == 0)
```

```
{
```

```
out 1 = 1;
```

```
}
```

```
if (button 2 == 0)
```

```
{ out 2 = 1;
```

```
}
```

```
else
```

```
{
```

```
out 1 = 0
```

```
out 2 = 0;
```

```
}
```

```
for first user.
```



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user 2:

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

```
#define out P2
```

```
sbit in1 = P1^0;
```

```
sbit in2 = P1^1;
```

```
unsigned int number = 0x00;
```

```
int convert(void);
```

```
void delay(void);
```

```
void main()
```

```
{
```

```
    out = 0x00;
```

```
    while (1)
```

```
    {
```

```
        if (in1 == 1)
```

```
        {
```

```
            delay(1);
```

```
            num++
```

```
            out = convert(1);
```

```
        }
```

```
        if (in2 == 1)
```

```
        { delay(1);
```

```
            num--;
```

```
            out = convert(1);
```

```
        }
```

```
    }
```

```
}
```

(7)

```
int convert ()
```

```
{
```

```
    unsigned int num1 = num*10;
```

```
    unsigned int num2 = num/10;
```

```
    return ((num2<<4) | num1);
```

```
}
```

```
void delay ()
```

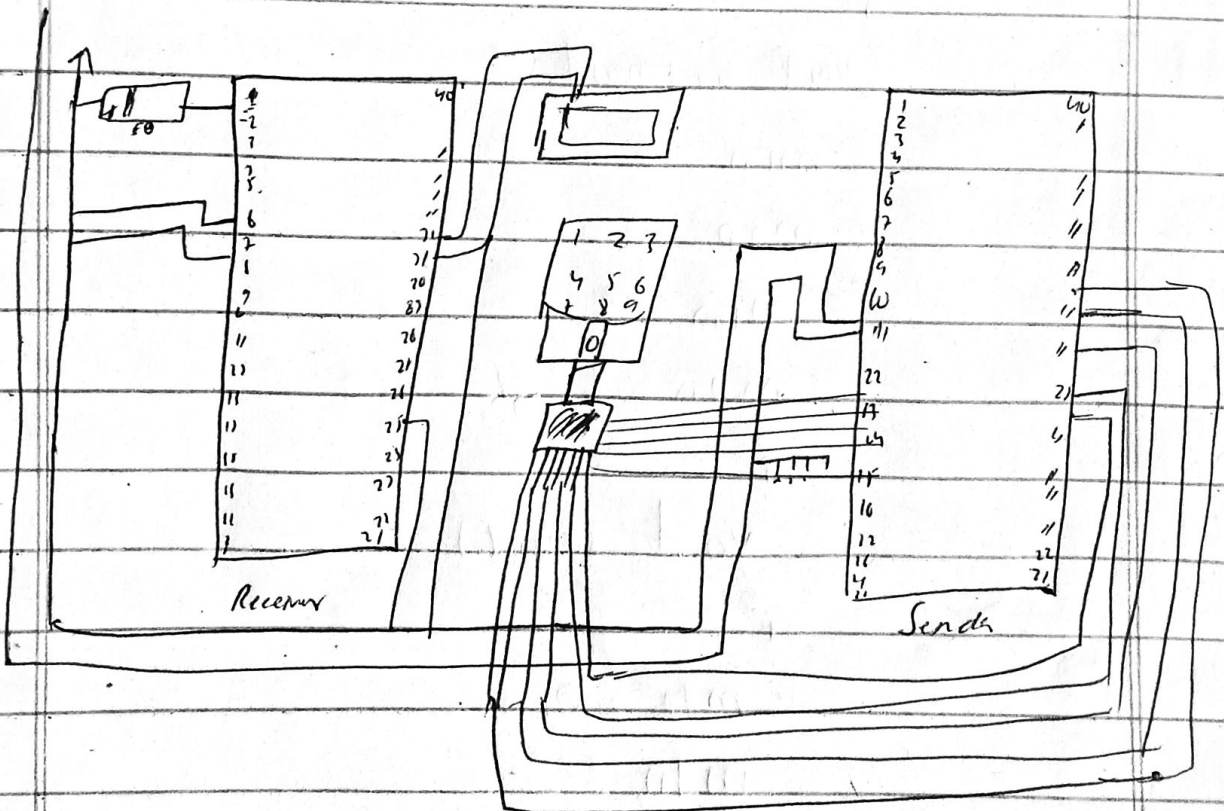
```
{
```

```
    unsigned int i,j;
```

```
    for (i = 0; i < 100; i++)
```

```
        for (j = 0; j < 500; j++);
```

```
}
```





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Q3:-

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

```
sbit m1p = P2^0;
```

```
sbit m1n = P2^1;
```

```
sbit m2p = P2^2;
```

```
sbit m2n = P2^3;
```

```
sbit f = P1^0;
```

```
sbit Ba = P1^1;
```

```
void forward ()
```

```
{
```

```
    m1p = 1;
```

```
    m2p = 1;
```

```
    m1n = 0;
```

```
    m2n = 0;
```

```
}
```

```
void backward ()
```

```
    m1p = 0;
```

```
    m2p = 0;
```

```
    m1n = 1;
```

```
    m2n = 1;
```

```
}
```

```
void stop ()
```

```
{
```

```
    m1p = 0;
```

```
    m1n
```

(9)

```
m2p = 0;
```

```
m2n = 0;
```

```
}
```

Code for Receiver

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

```
{
```

```
void main()
```

```
{
```

```
F = 0;
```

```
Ba = 0;
```

```
while(1)
```

```
{
```

```
if (F == 1)
```

```
forward ();
```

```
else if (Ba == 1)
```

```
backward ();
```

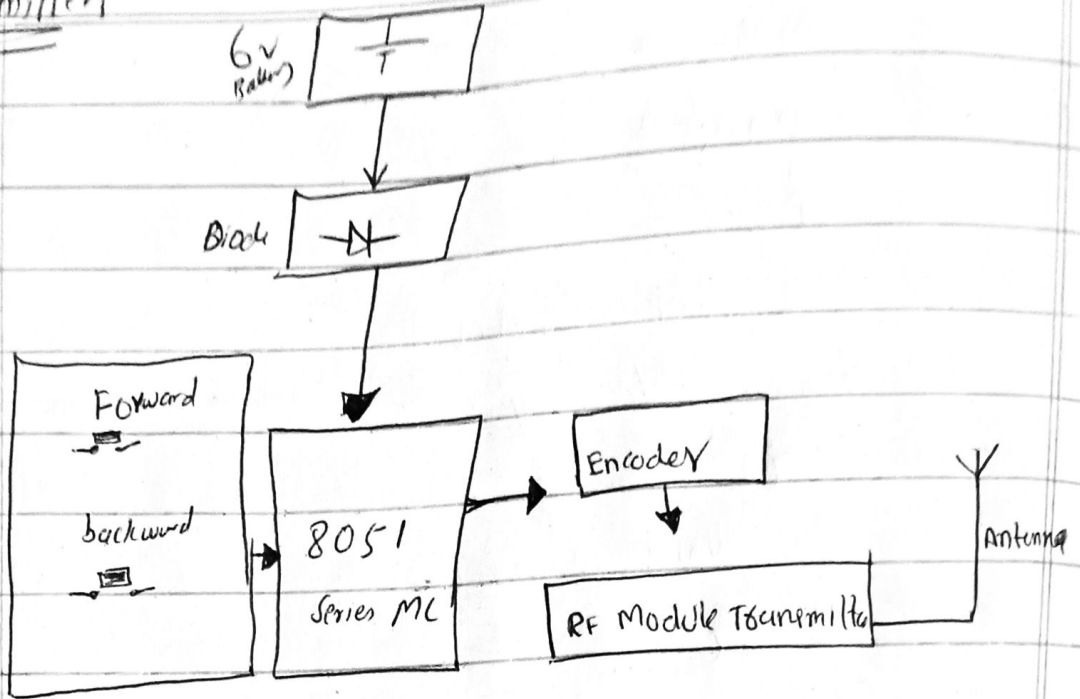
```
else
```

```
stop ();
```

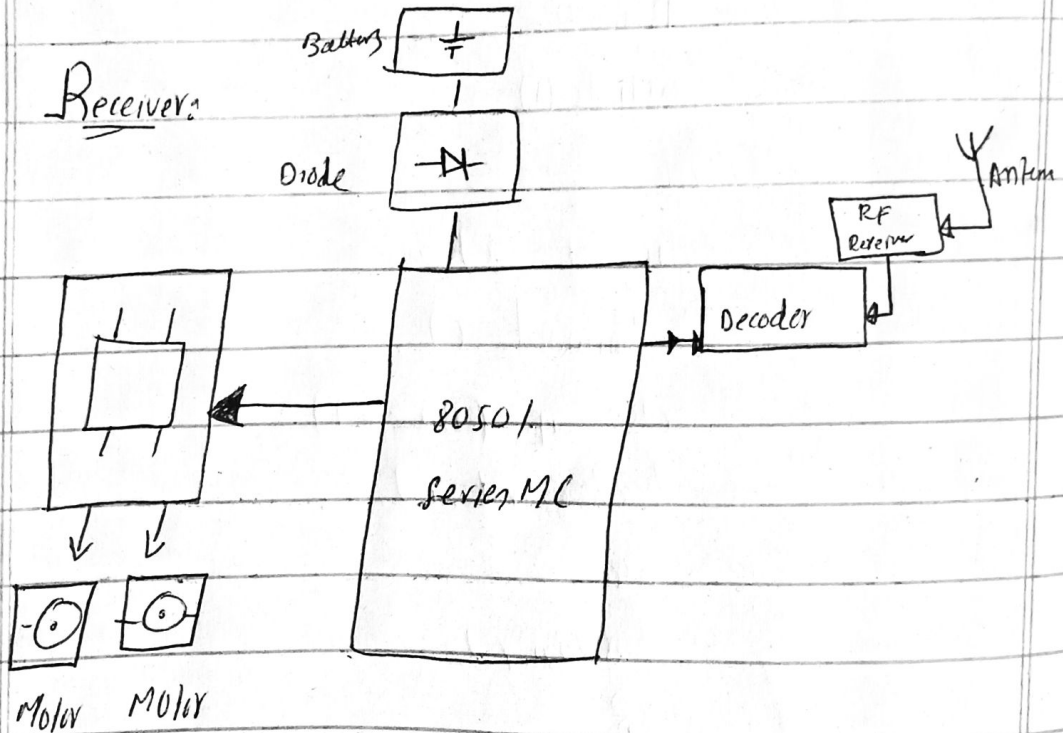
```
}
```

```
}
```

Transmitter



Receiver



(11)

Q4 (A part): Answer

LED will blinking with 100ms delay

(1) When sw<sub>1</sub> is ON and LED 1 is ON → LED 2 become OFF and occur 100ms delay and after 100ms delay the LED 2 will be ON again.

(2) When sw<sub>1</sub> is ON and LED 2 is OFF → LED 2 become ON and occurs 100ms delay after 100ms delay the LED<sup>2</sup> will be ON again.

This programming is just used for blinking of LED 1 and LED 2 with 100ms delay.

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Q4B part: ~~Q~~ ~~\*~~ ~~\*~~ ~~correct~~ program ~~\*~~

```
#include <reg51.h>
sbit sw1 = P3^1;
void delay (unsigned char x)
{
    unsigned int y, z;
    for (y=0; y<=x; y++)
    for (z=0; z<=1275; z++)
    }
void main()
{
    while (1)
    {
        if (sw1 == 1)
            x = y++;
            delay (100);
        }
    }
}
```