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Subject Micro Controller

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Q: No: 01 (A)

The basics of writing bullet points that work:-

1. A bullet expresses a clear benefit and promise to the reader. That's right ... They are mini-headlines. Bullets encourage the scanning reader to go back to the real meat of your content, or go back forward with your call to action.
2. Keep your bullet points symmetrical if possible; meaning one line each, two lines each, etc.
3. Avoid bullet clutter at all costs. Do not get into a detailed outline jumble of subtitles, bullets and sub-bullets. Bullets are designed for clarity, not confusion.
4. Practice Parallelism. Keep your bullets groups thematically related. begin each bullet with same part of Speech.

* Bullets are used in place of numbers when the order of items in list is not important. There are many forms of bullets to chosen from. The most common forms are heavy, black dot (•) and open circle (○). other common bullet choices include squares diamond, dashes and checkmarks.

Examples:-

① Combine all ingredients in a large bowl.
② Pour mixture into a large pan
③ Bake at 180 degrees for 50 minutes.

B. Difference between micro-controller & micro processor:-

Micro controller:-

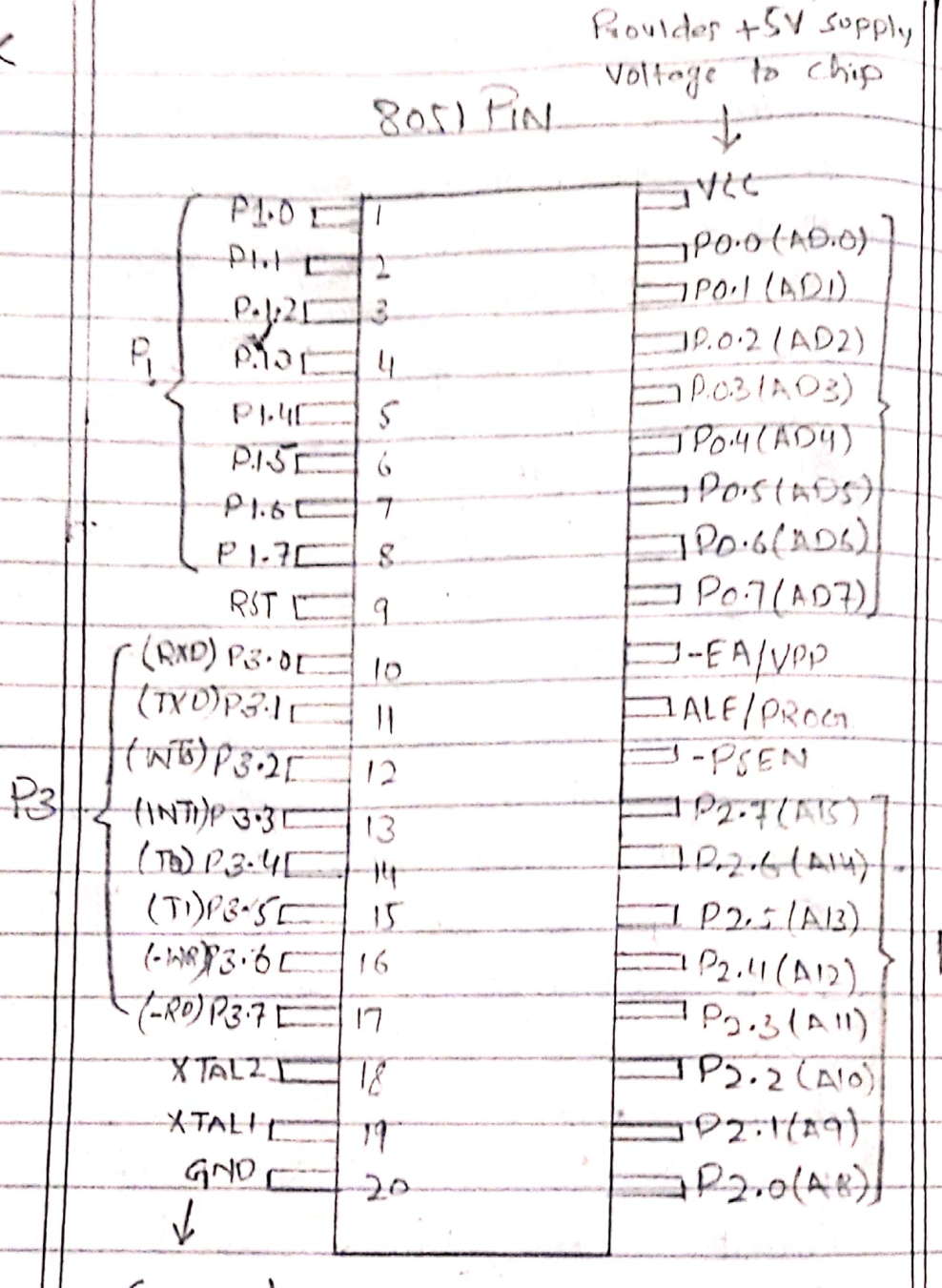
A micro controller is a chip optimized to control electronic devices. it is stored in a single integrated circuit which is

dedicated to performing a particular task and exute one specific application. It is specially designed circuit for embedded applications and and is widely used in automatically controlled electronic devices. It contains memory, Processor, and Programmable I/O

Microprocessor

A microprocessor is a controlling unit of a micro-computer wrapped inside a small chip It performs Arithematic Logical Unit (ALU) operations and communicates with the other devices connected with it. It is a single integrated circuit in which several functions are combined.

C



A total of 32 pins are set aside for the four ports P0, P1, P2, P3 where each port takes 8 pins.

d The dual role of Port 0:
Port 0 can be used to configures for both data and address. The port 0 is also designated as AD0 - AD7. When connecting an 8051 to an external memory, port 0 provides both data and address The 8051 multiplex address and data through port 0 to seven pins.

Dual Role of Port 2:

This indicates that port 2 has a dual function. An 8031 microcontroller is capable of accessing 64K bytes of external memory, it needs a path for the 16 bits of the address. Po provides the lower 8 bits via A0 - A7 while Port 2 Provides bits A8 - A15 of the address.

Dual Role of Port 3:-

Pins 10 to 17 form the Port 3 pins of 8051 microcontroller. Port 3 also acts as a bidirectional input/output Port with internal

pull-ups. Additionally, all the Port 3 pins have special functions.

c) It is slightly more powerful micro controller, sporting a number of additional features which the developer may make use of:

- 256 bytes of internal RAM (compared to 128 in standard 8051).
- A third 16-bit timer, capable of number of new operation modes and 16-bit reloads
- Additional SFRs to support the functionality offered by Third timer.

e) Delay of 56.384

```
#include <reg51.h>
void T1 Delay;
void main (void)
{
```

```
while 1
{
  P1 = 0x55;
  T1 Delay (1;

  P1 = 0xAA
  T1 Delay (1;

  }

  }
    Void T1 Delay () {
  TMOD = 0x01;
  TL1  = 0x00;
  TH1  = 0x35;
  TR   = 1;

  while (TF0 == 0);
  TR1 = 0;
  TF1 = 0;

  }
```

```
#include <reg51.h>
sbit Led = P0^0;
void timerDelay()
{
    TH0 = 0x4B;
    TL0 = 0xFD;
    TR0 = 1;
    While (TF0 == 0);
    TF0 = 0;
    TR0 = 0;
}
    voidmain
{
    TMOD = 0x01;
  while (1)
  {
    LED = 1;
  timerDelay();
    LED = 0;
  timer Delay();
  }
  }
```

Q: No: 2

```
#include <reg51.h>
sbit button 1 = P1^0;
sbit button 2 = P2^1;
sbit out 1 = P3^0;
sbit out 2 = P3^1;
void main ()

{
  if (button 1 == 0)
{
    out 1 = 1;
}
  if (button 2 == 0)

{
  If (button 2 == 0)
{
    out 2 = 1;

}
  else
{
    out 1 = 0;
    out 2 = 0;
}
```

This code will be used for user 1.

User 2 code:

```
#include <reg51.h>
#define out P2

Sbit in1 = P1^0;
Sbit in2 = P1^0;
unsigned int num=0x00;
int current (void);
void delay (void);
void main ()

{
out =0x00;
while (1)
{
if (in1==1)

{
delay (1);
num++
out = convert ();

}
if (in2==1)
{ delay ();
num--;
out = convert ();
```

```
}}
}
    int convert ()
{
  unsigned int num1=
                num+10;
  unsigned in num2=num1(0);
  return ((num2<<4) (num1);
}
    void delay ()
{
  unsigned int i,j;
for (i=0;i<100;i++)
for (j=0;j<500;j++)
}
```

Q.No: 3

Code for transmitter which will transmit it to recieves

```
#include <reg51.h>

sbit m1P = P2^0
sbit m1Pn = 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;
m1pn = 1;
m2n = 1;
}
void stop()
{
m1p = 0;
m1n = 0;
m2p = 0;
m2n = 0;
}
```

Code for Recievev which will recive commond from transmittev.

```
#include <reg51.h>
{
    voidmain()
    {
        F= 0;
        Ba = 0;
        while (1)
    { if (F == 1)
        forward ()
    else if (Ba == 1)
        backward ();
    else
        stop();
    }
    }
```

Q: No: 4 (b)

```
#include <reg 50.h>

sbit SW1 = P3^1;

unsigned int i = 0;

void delay - ms (unsigned int x)

{
    unsigned int y, z;

for (y = 0; y <= x; y--)

for (z = 0; z <= 1275; z++);

}

    voidmain (1)

{
    while (0)

{
    if SW1 == 1)

    P3 = i++;
    delay - ms (1000);
}
}
```

4 (b) (A)

Ans:- Switch and LED 1 are connected as an AND gate when both are 1, LED 2 will turn OFF after delay of 100ms.

It will turn ON and if switch is ON and LED 1 is OFF LED 2 will turn on and after the delay it will turn ON. and both the process will continue till the loops end.