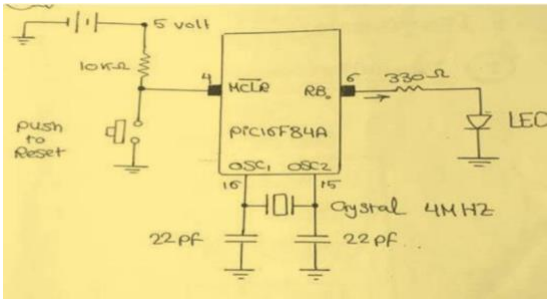
1) Using PIC 16F84A, show how to connect a LED that is flashing continuously every 1 Sec.

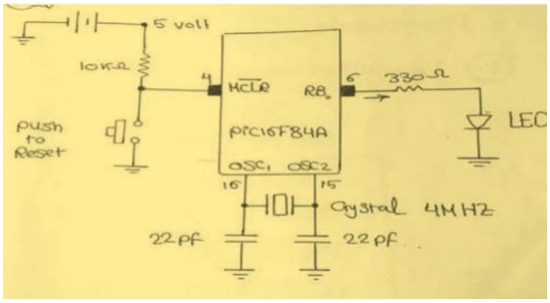
```
Void main(){
  TRIS b=0;
  While(1){
  Port b.b0 =1;
  Port b. bo =0;
  Delay_ms (1000);
  }
}
```



---

2) 3 flashes with 250 ms. Between each flash, then 2 seconds delay.

```
Void main(){
  Int I;
  TRIS b=0;
  While(1){
    For (i=1 ; i<= 3 ; i++){
      Port b.b0 =1;
      Delay_ms (250);
      Port b. bo =0;
      Delay_ms (250);
    }
  Delay_ms (2000);
  }
}
```



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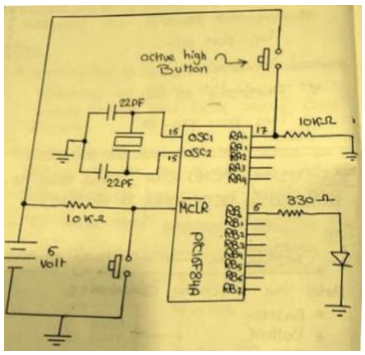
3) Using pic16F84A, show how to turn on a LED using a Button.

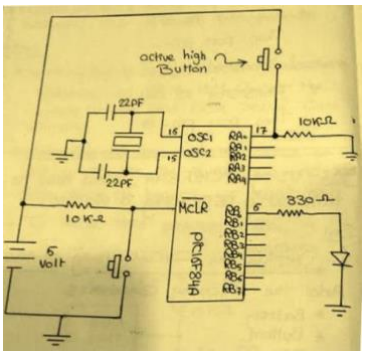
```
Void main( ){
  Trisa=0B00001;
  Trisb=0;
  While(1){
    If (porta.f0==1){
      Portb.b0=1;
      Portb.b0=0;
    }
  }
}
```



---

4) Using pic16F84A, show how to turn on a LED using a button, but When pressing the button, the led becomes open (on) for 2 seconds Then becomes off.

```
Void main( ){
  Trisa=0B00001;
  Trisb=0;
  While(1){
    If (porta.f0==1){
      Portb.b0=1;
      Delay_ms (2000);
      Portb.b0=0;
    }
  }
}
```



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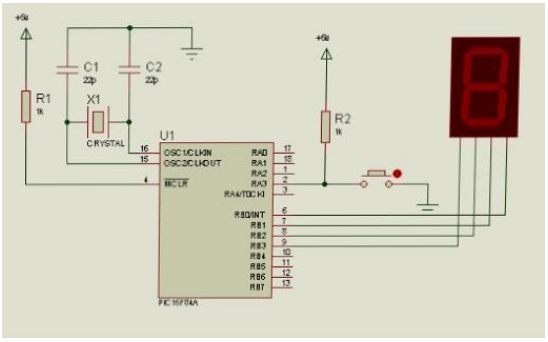
5) Using pic16F84A and LEDs, design a binary counter Circuit that counts from 0 to 9(BCD: Binary Coded Decimal counter).

```
Int I;
Void main(){
  Trisa=0;
  Trisb=0;
  For(i=0; i<=10; i++){
    Portb=I;
    If(portb==9){
      Porta.f0=1;
    }
    Delay_ms(1000);
  }
}
```



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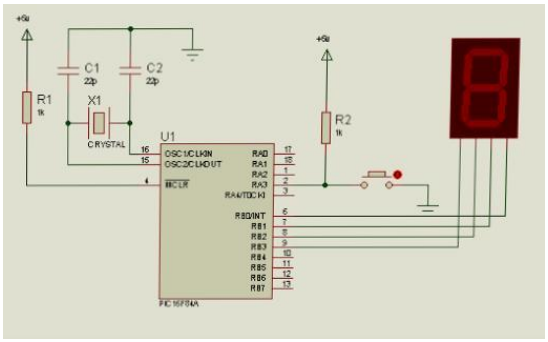
6) Using pic16F84A and LEDs, design a circuit to show in binary The multiplication table for 3. So, the LEDs will show 0,3,6,9,…30.

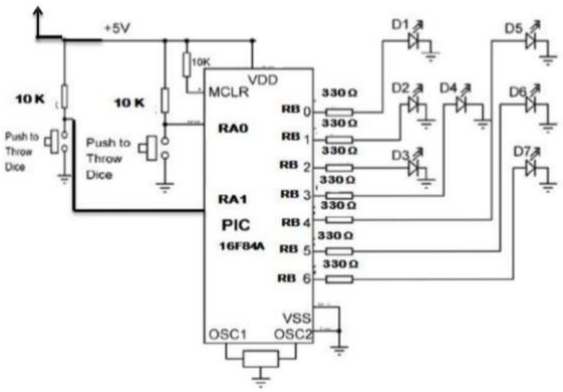
```
Void main(){
Int x;
Trisb=0;
Portb=0;
Delay_ms(1000);
While(1){
  For( x=1; x<=10; x++){
    Portb= 3*x ;
    Delay_ms(1000);
  }
  Portb=0;
  Delay_ms(1000);
  }
```



```
}
```

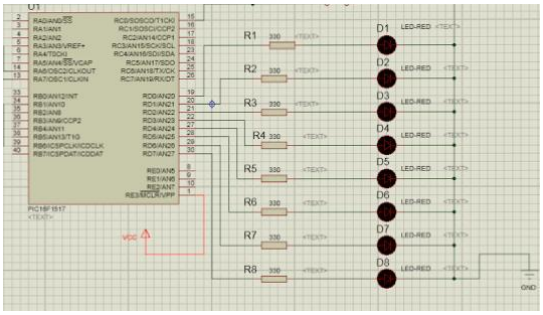
7) Using 16F84A, write a program to implement Up-down dice using two buttons.

```
Char Dice[6]={0x08,0x14,0x1c,0x55,0x5d,0x77};
Int I ;
Void main() {
 Trisb=0 ;
 Trisa=0xff ;
 Portb=dice[0] ;
 I=0 ;
 While(1) {
  If(porta.f0==1) {
    i++ ;
  }
  If(i==6) {
    i=0 ;
   Portb=dice[i] ;
   Delay_ms(500) ;
  }
  If(porta.f1==1) {
    i-- ;
  }
  If(i== -1) {
    I=5 ;
    Portb=dice[i] ;
    Delay_ms(500) ;
   }
 }
}
```



8) Using pic16F84A, design 8-bit shift left Register using LEDs.

```
Void main() {
 Int x;
 trisb=0;
 while(1) {
  portb=0B00000001;
  Delay_ms(500);
  For(x=0; x<8; x++) {
    Portb= portb << 1;
    Delay_ms(500);
```



```
   }
  }
}
```

---

9) Using PIC16F84A, seven segment, and a LED, show how to Display the numbers 0 to 9 with delay 1 sec. when the counts Reaches a 9, the LED should be on.

```
Char arr[10]={ 0000, 0001, 0010, 0011, 0100, 0101, 0110, 0111,
1000, 1001};
Int I;
Void main () {
  Trisb=0;
  Trisa=0;
  For( i=0; I <= 10; i++) {
    Portb=arr[i];
    Delay_ms(1000);
  }
  Porta.f0=1;
}
```