DATE: PAGE:

POOJA.K
1BM19CS111

8051

Lab program 11

- Drive a stepper motor interface to rotate the motor in Anti-clockwise direction by N steps. Introduce suitable delay between successive steps

```
#include<stdio.h>
#include<reg51.h>
char xdata port_at_0xe803;
char xdata porta_at_0xe800;
char idataacc_at_0x30;
delay()
 {
int j;
for(j=0;j<800;j++)
  { }
}
void main()
{
port=0x80;
while(1)
 {
 acc=0x11;
porta=acc;
delay();
 acc=0x22;
porta=acc;
 delay();
 acc=0x44;
```

```
porta = acc
delay();
acc = 0x88;
porta = acc;
delay();
}
}
```

DATE: PAGE:

POOJA.K
1BM19CS111

8051
Lab program 12

Drive a Stepper Motor interface to rotate the motor in clockwise by N steps. Introduce suitable delay between successive steps.

```
#include<stdio.h>
#include< reg51.h >
charxdata port_at_0xe803;
charxdata porta_at_0xe800;
charidataacc_at_0x30;
delay()
{
int j;
for(j=0;j<800;j++)
  {}
}

void main()
{
port = 0x80;
while(1)
  {
  acc=0x88;
  porta=acc;
  delay();
  acc = 0x44;
  porta= acc;
  delay();
```

```
acc = 0x22;
porta = acc;
delay();
acc = 0x11;
porta = acc;
delay();
}
}
```

DATE: PAGE:

POOJA.K
IBM19CS111

8051

Lab program 13

Display messages FIRE and HELP alternatively with flickering effects on a 7-segment display interface for a suitable period of time. Ensure a flashing rate that makes it easy to read both the messages.

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

char xdata commW_at_0xe803;
char xdata portB_at_0xe801;
char xdata portC_at_0xe802;

char port[20]={0x8e,0xf9,0xde,0x86,0x11,0xff,
        0xff,0xff,0x89,0x86,0xc7,0x8c},i;

delay()
{
long u;
for(u=0;u<8000;u++);
}

void main()
{
  int a,b,f,m;
  unsigned char k;
  commW=0x80;
```

DATE: PAGE:

```
do
{
i=0
for(d=0; d<3; d++)
 {
    for(b=0; b<4; b++)
    {
      k = port[i++];
     for(j=0; j<8; j++)
       {
        m=k;
        k = k & 0x80;
        {
        if(k==00)
        portB = 0x00;
        else ----------> portB = 0x01;
        portC = 0x01;      }
        portC = 0x00;
         k=m;
          k<<=1;
       }
     }
    delay();
    }
 }
while(1);
}
```

DATE: PAGE:

POOJA.H
1BM19CS114

8051

Lab program 14

- Display messages BANGALORE in rolling fashion on a 7 - segment display interface for a suitable period of time.

```
#include<stdio.h>
#include<reg51.h>
char xdata commW_at_0xe803;
char xdata portB_at_0xe801;
char xdata portC_at_0xe802;
char port[20]={0xff,0xff,0xff,0xff,0x83,0x88,0xc8,
        0x88,0xc8,0x82,0x88,0xc7,0xc0,0xAF
        ,0x86},i;
delay()
{
long u;
for(u=0; u<4000; u++);
}
void main()
{
int d,b,j,m;
unsigned char k;
CommW=0x80;
do
{
i=0;
for(d=0;d<1;d++)
{
```

DATE:

```
for(b=13; b>0; b--)
 {
 delay();
 k=port[i++];
for(j=0; j<8; j++)
 {
 m=k;
 k=k&0X80;
 {
 if(k==00)
portB=0x00;
 else
 portB=0x01;
 portC=0x01;
 portC=0x00;
 k=m;
 k<<=1;
 }
 }
 delay();
 }
 }
while(1);
}
```

DATE: PAGE:

8051

Lab Program 15

POOJA.K
1BM19CS111

Program to demo the elevator interface.

```
#include<stdio.h>
#include<reg51.h>
unsigned char xdata CommandWord_at_0xe803;
unsigned char xdata PortA_at_0xe800;
unsigned char xdata PortB_at_0xe801;
Unsigned char xdataPresentFloor, RequestedFloor, Step=0xf0;
unsigned long xdata count, i;

Delay().
{
for(count=0; count<=4500; count++);
}

Rest()
{
  Step=Step & 0x0f;
  PortA=step;
  Step = Step | 0x f0;
  PortA=step;
}

GoUp()
{
switch(RequiredFloor)
  {
  case 0xDA: while(Step<0x32)
```

```
        {
        Step++;
        PortA=Step;
        Delay();
        }
        Reset();
        break;

case 0x0b: while(Step<0xf6)
        {
        Step++;
        PortA = Step;
        Delay();
        }
        Reset();
        break;

case 0x07: while(Step<0xf9)
        {
        Step++;
        PortA = Step;
        Delay();
        }
        Reset();
        break;

    }
}
```

```
GoDown()
{
 switch(RequestedFloor)
  {
  case 0x0d : while(Step > 0xf3)
                {
                Step--;
               PortA = Step;
               Delay();
                }
               Reset();
               break;

 case 0x0b: while(Step > 0xf6)
               {
               Step--;
              PortA = Step;
              Delay();
               }
              Reset();
              break;

 case 0x0e : while(Step > 0xf0) {
               Step--;
              PortA = Step;
              Delay();
               }
              Reset();
              break;
        }
  }
```

DATE: PAGE:

```
void main()
 {
CommandWord = 0x82;
PortA = 0xf0;
PresentFloor = 0x0e;
while(1) {
   RequestedFloor = PortB;
   RequestedFloor = RequestedFloor & 0x0f;

if (RequestedFloor != 0x0f && RequestedFloor != PresentFloor){
       if (RequestedFloor < PresentFloor)
         GoUp();
       else
         GoDown();
       PresentFloor = RequestedFloor;
       }
      RequestedFloor = PortB;
}
```