**MPI LAB**

Experiment 1

Store 8 bit data in mem

Step-1:

Store the data in accumulator

MVI A,35H

Move VALUE of 35H (35 in hexadecimal) into Accumulator(A)

Step 2:

Copy accumulator content at a particular memory location or we can use a register.(choose an address and store it in memory at that address)

STA 2000H

Store the value at accumulator at the provided address

HLT

MVI A,35H

STA 0001

HLT

Experiment 2

Exchange the contents of two memory location.

Step -1:

Load data into accumulator from provided address

LDA 2000H

Step -2:

Copy content of accumulator into register B

MOV B,A

Step-3:

Load new data into accumulator from address

LDA 4000H

Step-4:

Store the value of accumulator at previous address

STA 2000H

Step-5:

Load data into accumulator from register B

MOV A,B

Step-4:

Store the value of accumulator at next address

STA 4000H

HLT

LDA 0001

MOV B,A

LDA 0003

STA 0001

MOV A,B

STA 0003

HLT

# Experiment – 3

## 8 bit Addition

MVI A,20

STA 0000H

MOV B,A

MVI A,30

STA 0001H

ADD B

STA 0003H

HLT

# Experiment-4

## Addition of 16 bit no.

Load first 16 bit no in HL register

LHLD 4000H

Save first 16 bit no in DE

XCHG

Load Second 16 bit no in HL register

LHLD 4002H

Load lower byte of first no in A

MOV A,E

Add Lower bytes of second no

ADD L

Store result in L register

MOV L,A

Load higher bytes of first no in A

MOV A,D

Add higher bytes of second no

ADC H

Store result in H register

MOV H,A

Store result in memory

SHLD 4004H

Halt

HLT

LHLD 0000H

XCHG

LHLD 0002H

MOV A,E

ADD L

MOV L,A

MOV A,D

ADC H

MOV H,A

SHLD 0004H

HLT

or

LHLD 0000H

XCHG

LHLD 0002H

DAD D

SHLD 0004H

HLT

# Experiment-5

Subtractions of two 16 bit number

LHLD 0000H

XCHG

LHLD 0002H

MOV A,E

SUB L

MOV L,A

MOV A,D

SBB H

MOV H,A

SHLD 0004H

HLT

# Experiment-6

Multiplication of 8-bit number

Experiment 7

Division of 8 bit no

LXI H,1100

MOV B, M

MVI C,00

INX H

MOV A, M

LOOP: CMP B; IF A>B C==0,A<B C=1, A=B ZERO=1

JC SKIP

SUB B

INR C

JMP LOOP

SKIP: STA 1102;REMAINDER

MOV A,C

STA 0003

HLT

EXPERIMENT-8

ADDITION USING CARRY

LHLD 0000

MOV A,L

ADD H

MOV L,A

MVI A,00

ADC A

MOV H,A

SHLD

HLT

# Experiment-9

;Substraction using carry

LHLD 0000

MOV A,L

SUB H

MOV L,A

MVI A,00

SBB A

MOV H,A

SHLD 0005

HLT

# Experiment – 10+11

# Experiment-12

To move a block of data from one location to other

MVI C,5

LXI H,0

LXI D,10

LOOP: MOV A,M

STAX D

INX H

INX D

DCR C

JNZ LOOP

HLT

# Experiment 13