

# INDIAN INSTITUTE OF INFORMATION TECHNOLOGY SONEPAT

# Microprocessor and Interfacing Lab (CSC508)

## **Practical Lab File**

Submitted To:

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Submitted By

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Branch: CSE

Semester: 5

Session: 2021-25

## Practical 1: - Write a program for addition of two 8 bit numbers

#### CODE:

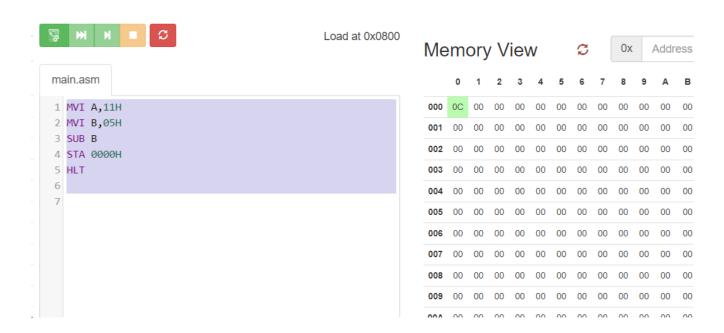


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	0	1	2	3	4	5	6	7	8	9	Α	В	С	D	
000	06	00	00	00	00	00	00	00	00	00	00	00	00	00	
001	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
002	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
003	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
004	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
005	00	00	00	00	00	00	00	00	00	00	00	00	00	00	

## Practical 2: - Write a program for subtraction of two 8 bit numbers

#### CODE:

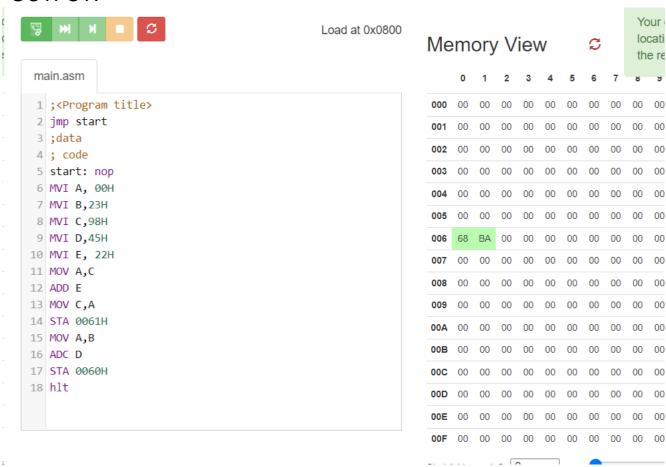
```
MVI A,11H
MVI B,05H
SUB B
STA 0000H
HLT
```



# Practical 3: - Write a program for addition with a carry of two 8 bit numbers

#### CODE:

```
MVI B,23H
MVI C,98H
MVI D,45H
MVI E, 22H
MVV A,C
ADD E
MVV C,A
STA 0061H
MVV A,B
ADC D
STA 0060H
hlt
```



Practical 4: - Write a program for subtraction of two 8 bit numbers with borrow.

#### CODE:

MVI A, 8DH
MVI B, 7DH
MOV C, A
SUB B
JC SUBTRACT
SUBTRACT: STA RESULT
RESULT: DB 00H
HLT;



Practical 5: - Write a program for multiplication of two 8 bit numbers using repeated addition.

#### CODE:

```
MVI c,04h

MVI a, 00h

MVI d,00h

loop: add b

jnc skip

inr d

skip: dcr c

jnz loop

mov b,d

mov c,a

mov a,c

sta 0000h

hlt
```

IV	iviemory view							UX Address I									
		0	1	2	3	4	5	6	7	8	9	Α	В	С	D	E	F
0	000	80	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
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0	002	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0	003	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0	004	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0	005	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0	006	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0	007	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0	800	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0	009	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0	00A	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

# Practical 6: - Write a program for multiplication of two 8 bit numbers using bit rotation method

#### CODE:

```
MVI A,05H
LXI H,0000H

LOOP: RRC
    JNC SKIP
    DAD D

SKIP: XCHG
    DAD H
    XCHG
    DCR C
    JNZ LOOP
    HLT
```

A/PSW	0x 05 56	main.asm
ВС	0x 00 00	1 MVI D,06H
DE	0x 00 00	2 MVI A,05H 3 LXI H,0000H
HL	0x 1E 00	5 LOOP: RRC
SP	0x FF FF	7 DAD D
PC	0x 08 14	8 NOTE: VOIC
		9 SKIP: XCHG 10 DAD H
Elogo	C	11 XCHG 12 DCR C
Flags	No.	13 JNZ LOOP
7		14 HLT

Practical 7: - Write a program for division of two 8 bit numbers by repeated addition method.

#### CODE:

```
MVI A, 27H

MVI B, 05H

MVI C, 00H

MVI D, 00H

LOOP: SUB B

JC DONE

INR C

JMP LOOP

DONE: MOV E, A

HLT
```

A/PSW	0x FF 97	main.asm
ВС	0x 05 07	1 MVI A, 27H 2 MVI B, 05H
DE	0x 00 FF	3 MVI C, 00H 4 MVI D, 00H
HL	1L 0x 00 00	5 LOOP: SUB B
SP	0x FF FF	6 JC DONE 7 INR C
PC	0x 08 12	8 JMP LOOP 9 DONE: MOV E, A
		10 HLT
Flags	$\mathcal C$	

Practical 8: - Write a program for division of two 8 bit numbers using by bit rotation method.

#### CODE:

```
MVI E,00H;
   LHLD 0008H;
   LDA 0007H;
   MOV B,A;
   MVI C,08H;
NEXT: DAD H;
   MOV A, E;
   RLC
   MOV E,A;
   MOV A,H;
   SUB B;
   JC SKIP;
   MOV H,A;
    INR E;
SKIP:DCR C;
    JNZ NEXT;
   MOV A,E;
   STA 0033H;
   MOV A,H;
   STA 0034H;
   HLT;
```

```
main.asm

0 1 2

1 2

start: nop
    MVI E,00H;
    LHLD 0008H;
    LDA 0007H;
    MOV B,A;
    MVI C,08H;

NEXT:DAD H;
    MOV A,E;
    RLC
    MOV E,A;
    MOV E,A;
    MOV A,H;
    SUB B;
    JC SKIP;
```

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000	00	00	00	00	00	00	00	00	00	00	0(
001	00	00	00	00	00	00	00	00	00	00	0(
002	00	00	00	00	00	00	00	00	00	00	01
003	00	00	00	FF	00	00	00	00	00	00	00
004	00	00	00	00	00	00	00	00	00	00	0(
005	00	00	00	00	00	00	00	00	00	00	00
006	00	00	00	00	00	00	00	00	00	00	00
007	00	00	00	00	00	00	00	00	00	00	00
800	00	00	00	00	00	00	00	00	00	00	00
009	00	00	00	00	00	00	00	00	00	00	0(
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