Assignment-4

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1) Specify the contents of the registers and the flag status as the following instructions are executed.

```
MVI A, 00H
MVI B, F8H
MOV C,A
MOV D,B
HLT
```

2) Write instructions to load the hexadecimal number 65H in register C, and 92H in the accumulator A. Display the number 65H at port0 and 92H at port1.

3) Write instructions to read the data at input PORT 07H and at PORT 08H. Display the input data from PORT 07H at output PORT 00H, and store the input data from PORT 08H in register B.

4) Specify the output at PORT1 if the following program is executed.

```
MVI B, 82H
MOV A,B
MOV C,A
MVI D,37H
OUT PORT1
HLT
```

4) Specify the contents of the registers and the flag status as the following instructions are executed. Specify also the output at PORT0.

A	B	S	Z	CY	
00	**FF**	**0**	**1**	**0**	initial contents

```
MVI A, F2H
MVI B, 7AH
ADD B
OUT PORT0
HLT
```

5) Specify the register contents and the flag status as the following instructions are executed.

A	C	S	Z	CY	
XX	**FF**	**0**	**1**	**0**	initial contents

```
MVI A, 5EH
ADI A, A2H
MOV C,A
HLT
```

6) Write a program using the ADI instruction to add the two hexadecimal numbers 3AH and 48H and to display the answer at an output port.

7) What is the content of register A and the status of the S and CY flags. MVI A, F8H
SUI 69H.

8) Specify the register contents and the flag status as the following instructions are executed.

A	B	S	Z	CY	
XX	**XX**	**X**	**X**	**X**	initial contents

```
SUI A
MOV B,A
DCR B
INR B
SUI 01H
HLT
```

9) Write a program to: a) clear the accumulator
b) add 47H (use ADI instruction)
c) subtract 92H
d) add 64H
e) display the result after subtracting 92H and after adding 64H.

10)
```
MVI A,A9H
MVI B,57H
ADD B
ORA A
```
specify the register contents and the flags status(S, CY, Z).

11) Load the data byte A8H in register C. Mask the high-order bits (D7-D4), and display the low-order bits (D3-D0) at an output port.

12)
```
        MVI A,8FH
        ADI,72H
        JC DISPLAY
        OUT PORT1
        HLT
DISPLAY: XRA A
        OUT PORT1
        HLT
```

PORT1=?

13) Replace the instruction **ADI 72H** by the instruction **SUI 67H** and specify the output in question no (12).

13).
```
        MVI A, BYTE1
        MOV B,A
        SUI 50H
        JC DELETE
        MOV A,B
        SUI 80H
        JC DSPLAY
DELETE: XRA A
        OUT PORT1
        HLT
DISPLAY MOV A,B
        OUT PORT2
        HLT
```

WHAT WILL BE THE RANGE OF DATA DISPLAYED AT PORT2.

14) Explain the following programs:

```
        MVI A,BYTE1
        ORA A
        JM OUTPRT
        OUT 01H
        HLT
OUTPRT: CMA
        ADI 01H
        OUT 01H
        HLT
```