

MIT Assignment-02

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Question 1 : Write instruction to load the two hexadecimal numbers 32H and 48H in registers A and B, respectively. Add the numbers, and display the sum at the output port 02.

Output:

Registers

A	7A
BC	48 00
DE	00 00
HL	00 00
PSW	00 00
PC	42 0C
SP	FF FF
Int-Reg	00

Flag

S	0
Z	0
AC	0
P	0
C	0

Load me at

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

<<Program title>

jmp start

;data

;code

start: nop

mvi A,32H

mvi B,48H

add B

out 02H

hlt

Decimal - Hex Conversion

Decimal

Hex

0

0

To Hex

To Dec

I/O Ports

2

-

+

122

Update Port Value

Memory

0

-

+

00

Update Memory

Question 2: Write instruction to load an 8-bit number in a B.

Output:

Registers			Flag	Load me at
A	7A		S 0	
BC	32	00	Z 0	1
DE	00	00	AC 0	2 ;<Program title>
HL	00	00	P 0	3
PSW	00	00	C 0	4 jmp start
PC	42	07		5
SP	FF	FF		6 ;data
Int-Reg	00			7

Decimal - Hex Conversion

Decimal	Hex
<input type="text" value="0"/>	<input type="text" value="0"/>
<input type="button" value="→ To Hex"/>	<input type="button" value="← To Dec"/>

I/O Ports

<input type="text" value="2"/>	-	+	<input type="text" value="7A"/>
<input type="button" value="⌂ Update Port Value"/>			

Memory

<input type="text" value="0"/>	-	+	<input type="text" value="00"/>
<input type="button" value="⌂ Update Memory"/>			

```
1
2 ;<Program title>
3
4 jmp start
5
6 ;data
7
8
9 ;code
10 start: nop
11 mvi B, 32H
12
13
14 hlt
```

Question 3: Write instruction to load a 16-bit number in a BC register pair.

Output:

Registers			Flag		Load me at
A	7A		S	0	
BC	00	32	Z	0	1
DE	00	00	AC	0	2 ;<Program title>
HL	00	00	P	0	3
PSW	00	00	C	0	4 jmp start
PC	42	08			5
SP	FF	FF			6 ;data
Int-Reg	00				7

Decimal - Hex Conversion	
Decimal	Hex
0	0

```
1
2
3
4 jmp start
5
6 ;data
7
8
9 ;code
10 start: nop
11 lxi B,0032H
12
13 hlt
```

Question 4 : Write instruction to copy data from register B to register H.

Output:

Registers			Flag		Load me at	
A	7A		S	0		
BC	32	32	Z	0		
DE	00	00	AC	0		
HL	32	00	P	0		
PSW	00	00	C	0		
PC	42	08				
SP	FF	FF				
Int-Reg	00					

Decimal - Hex Conversion

Decimal	Hex
<input type="text" value="0"/>	<input type="text" value="0"/>
<input type="button" value="To Hex"/>	<input type="button" value="To Dec"/>

I/O Ports

<input type="text" value="2"/>	<input type="button" value="-"/>	<input type="button" value="+"/>	<input type="text" value="7A"/>
<input type="button" value="Update Port Value"/>			

Memory

<input type="text" value="0"/>	<input type="button" value="-"/>	<input type="button" value="+"/>	<input type="text" value="00"/>
<input type="button" value="Update Memory"/>			

```
1
2 ;<Program title>
3
4 jmp start
5
6 ;data
7
8
9 ;code
10 start: nop
11 mvi B,32H
12 mov H,B
13
14 hlt
```

Question 5 : Write instruction to copy data from register B to memory location 0008H.

Output:

Registers			Flag		Load me at
A	32		S	0	
BC	32	32	Z	0	
DE	00	00	AC	0	
HL	32	00	P	0	
PSW	00	00	C	0	
PC	42	09			
SP	FF	FF			
Int-Reg	00				

Decimal - Hex Conversion

Decimal

Hex

0

0

To Hex

To Dec

I/O Ports

2

-

+

7A

Update Port Value

Memory

8

-

+

50

Update Memory

```
1
2 ;<Program title>
3
4 jmp start
5
6 ;data
7
8
9 ;code
10 start: nop
11 MOV A,B
12 STA 0008H
13
14
15
16 hlt
```

Question 6 : Write instruction to transfer data of accumulator to memory location 0002H

Output:

Registers			Flag		Load me at
A	32		S	0	
BC	32	32	Z	0	
DE	00	00	AC	0	
HL	32	00	P	0	
PSW	00	00	C	0	
PC	42	08			
SP	FF	FF			
Int-Reg	00				

Decimal - Hex Conversion

Decimal	Hex
<input type="text" value="0"/>	<input type="text" value="0"/>
<input type="button" value="→ To Hex"/>	<input type="button" value="← To Dec"/>

I/O Ports

<input type="text" value="2"/>	<input type="button" value="-"/>	<input type="button" value="+"/>	<input type="text" value="7A"/>
<input type="button" value="⌂ Update Port Value"/>			

Memory

<input type="text" value="2"/>	<input type="button" value="-"/>	<input type="button" value="+"/>	<input type="text" value="50"/>
<input type="button" value="⌂ Update Memory"/>			

```
1
2 ;<Program title>
3
4 jmp start
5
6 ;data
7
8
9 ;code
10 start: nop
11 STA 0002H
12
13
14 hlt|
```

Question 7 : Write instruction to accept data from port 08H and place it in accumulator.(IN)

Output:

Registers			Flag		Load me at	
A	00		S	0		
BC	32	32	Z	0		
DE	00	00	AC	0		
HL	32	00	P	0		
PSW	00	00	C	0		
PC	42	07				
SP	FF	FF				
Int-Reg	00					

Decimal - Hex Conversion

Decimal

Hex

0

0

→ To Hex

← To Dec

I/O Ports

8

-

+

0

Update Port Value

Memory

2

-

+

32

Update Memory

```
1
2 ;<Program title>
3
4 jmp start
5
6 ;data
7
8
9 ;code
10 start: nop
11 IN 08H
12
13
14 hlt
```

Question 8 : Write instruction to accept data from memory location 003F and place it in accumulator.(LDA)

Output:

Registers

A	32
BC	32 32
DE	00 00
HL	32 00
PSW	00 00
PC	42 0F
SP	FF FF
Int-Reg	00

Flag

S	0
Z	0
AC	0
P	0
C	0

Load me at

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

<Program title>

jmp start

data

code

start: nop

MVI A, 32H

STA 003FH

MVI A, 00H

LDA 003FH

hlt

Decimal - Hex Conversion

Decimal

Hex

0

0

To Hex

To Dec

I/O Ports

8

-

+

00

Update Port Value

Memory

2

-

+

32

Update Memory

Question 9 : Write instruction to copy data (results)from accumulator to memory location 0008H.(STA)

Output:

Registers			Flag		Load me at
A	32		S	0	
BC	32	32	Z	0	
DE	00	00	AC	0	
HL	32	00	P	0	
PSW	00	00	C	0	
PC	42	0A			
SP	FF	FF			
Int-Reg	00				

Decimal - Hex Conversion

Decimal

Hex

0

0

To Hex

To Dec

I/O Ports

8

-

+

00

Update Port Value

Memory

7

-

+

50

Update Memory

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

<Program title>

jmp start

data

code

start: nop

MVI A, 32H

STA 0008H

hlt

Question 10 : A. load data 05H to memory location 003E H.

B. Store this memory location to register C.

C. Copy the data of memory location stored in C to accumulator.

Output:

Registers			Flag		Load me at	
A	32		S	0		
BC	32	32	Z	0		
DE	00	00	AC	0		
HL	32	00	P	0		
PSW	00	00	C	0		
PC	42	0F				
SP	FF	FF				
Int-Reg	00					

Decimal

0

↔ To Hex

Hex

0

↔ To Dec

Decimal - Hex Conversion

8

-

+

00

Update Port Value

8

-

+

32

Update Memory

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

<Program title>

jmp start

;data

;code

start: nop

MVI A, 32H

STA 003EH

LDA 003EH

MOV C, A

MOV A, C

hlt

Question 11: Copy the data of accumulator into the memory specified by the address in register pair BC.

Output:

Registers			Flag	Load me at
A	32		S 0	
BC	03	2A	Z 0	
DE	00	00	AC 0	
HL	32	00	P 0	
PSW	00	00	C 0	
PC	42	0B		
SP	FF	FF		
Int-Reg	00			

Decimal

0

→ To Hex

Hex

0

← To Dec

I/O Ports

8 - + 00

Update Port Value

Memory

8 - + 32

Update Memory

```
1
2 ;<Program title>
3
4 jmp start
5
6 ;data
7
8
9 ;code
10 start: nop
11 MVI A, 32H
12 LXI B, 32AH
13 STAX B
14
15 hlt
```