

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

Decimal - Hex Conversion

Decimal	Hex
0	0

I/O Ports

2	-	+	122
---	---	---	-----

Memory

0	-	+	00
---	---	---	----

```
1
2 ;<Program title>
3
4 jmp start
5
6 ;data
7
8
9 ;code
10 start: nop
11 mvi A, 32H
12 mvi B, 48H
13 add B
14 out 02H
15
16
17 hlt
```

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

Output:

Registers		Flag	
A	7A	S	0
BC	32 00	Z	0
DE	00 00	AC	0
HL	00 00	P	0
PSW	00 00	C	0
PC	42 07		
SP	FF FF		
Int-Reg	00		

Load me at

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

Decimal - Hex Conversion

Decimal	Hex
0	0

To Hex To Dec

I/O Ports

2	-	+	7A
---	---	---	----

Update Port Value

Memory

0	-	+	00
---	---	---	----

Update Memory

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

Output:

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

Load me at

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

Decimal - Hex Conversion

Decimal	Hex
0	0

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

Output:

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

Load me at

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

Decimal - Hex Conversion

Decimal	Hex
0	0

To Hex To Dec

I/O Ports

2	-	+	7A
---	---	---	----

Update Port Value

Memory

0	-	+	00
---	---	---	----

Update Memory

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

Output:

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

Load me at

```
1 ;<Program title>
2
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
```

Decimal - Hex Conversion

Decimal	Hex
0	0

To Hex To Dec

I/O Ports

2	-	+	7A
---	---	---	----

Update Port Value

Memory

8	-	+	50
---	---	---	----

Update Memory

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

Output:

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

Load me at

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

Decimal - Hex Conversion

Decimal	Hex
0	0

To Hex To Dec

I/O Ports

2	-	+	7A
---	---	---	----

Update Port Value

Memory

2	-	+	50
---	---	---	----

Update Memory

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

Output:

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

Load me at

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

Decimal - Hex Conversion

Decimal	Hex
0	0

To Hex To Dec

I/O Ports

8	-	+	0
---	---	---	---

Update Port Value

Memory

2	-	+	32
---	---	---	----

Update Memory

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

Decimal - Hex Conversion

Decimal	Hex
0	0

To Hex To Dec

I/O Ports

8	-	+	00
---	---	---	----

Update Port Value

Memory

2	-	+	32
---	---	---	----

Update Memory

```
1 ;<Program title>
2
3
4 jmp start
5
6 ;data
7
8
9 ;code
10 start: nop
11 MVI A, 32H
12 STA 003FH
13 MVI A, 00H
14 LDA 003FH
15
16 hlt
```

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

Output:

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

Load me at

```
1 ;<Program title>
2 jmp start
3 ;data
4 ;code
5 start: nop
6 MVI A, 32H
7 STA 0008H
8
9
10
11
12
13
14
15 hlt|
```

Decimal - Hex Conversion

Decimal	Hex
0	0

To Hex To Dec

I/O Ports

8	-	+	00
---	---	---	----

Update Port Value

Memory

7	-	+	50
---	---	---	----

Update Memory

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

Load me at

Decimal - Hex Conversion

Decimal	Hex
0	0

To Hex To Dec

I/O Ports

8	-	+	00
---	---	---	----

Update Port Value

Memory

8	-	+	32
---	---	---	----

Update Memory

```
1 ;<Program title>
2 jmp start
3
4 ;data
5
6 ;code
7
8 start: nop
9 MVI A, 32H
10 STA 003EH |
11 LDA 003EH
12 MOV C,A
13 MOV A,C
14
15
16
17
18 hlt
```

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

Output:

Registers		Flag	
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		

Load me at

```
1 ;<Program title>
2
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|
```

Decimal - Hex Conversion

Decimal	Hex
0	0

To Hex To Dec

I/O Ports

8	-	+	00
---	---	---	----

Update Port Value

Memory

8	-	+	32
---	---	---	----

Update Memory