

Assignment no 6

Q.1 Program to find greatest among two 8-bit numbers.

Statement:

Input numbers from memory location 2050H and 2051h and store greatest number in memory location 2055h

Program

```
9 ;code
0 start: nop
1 lda 2051h
2 mov b, a
3 lda 2050h
4 cmp b
5 jnc x
6 mov a, b
7 x: sta 2055h
8
9 hlt
```

Output:

Start	2050h	
Address (Hex)	Address	Data
2050	8272	16
2051	8273	12
2052	8274	0
2053	8275	0
2054	8276	0
2055	8277	16

Register:

Registers			Flag	
A	10		S	0
BC	0C	00	Z	0
DE	00	00	AC	0
HL	00	00		
PSW	00	00		

Q.2 Program to find smallest among two 8-bit numbers.

Statement:

Input numbers from memory location 2050H and 2051H and store smallest number in memory location 2055H.

Program:

```
start: nop
lda 2051h
mov b, a
lda 2050h
cmp b
jc x
mov a, b
x: sta 2055h
hlt
```

Output:

Start

2050h

Address (Hex)	Address	Data
2050	8272	16
2051	8273	12
2052	8274	0
2053	8275	0
2054	8276	0
2055	8277	12
2056	8278	0

Register:

Registers			Flag	
A	0C		S	0
BC	0C	00	Z	0
DE	00	00		
HL	00	00		
PSW	00	00	AC	0

Q.3 Program to find whether a number is odd or even.

Statement:

Input number from memory location 2050H and store result in 2055H.

Program:

```
9      ;code
10     start: nop
11     lda 2050h
12     ani 01h
13     jz x
14     mvi a, 0dh
15     jmp y
16     x: mvi a, 0eh
17     y: sta 2055h
18
19     hlt
```

Output:

Start	2050h	
Address (Hex)	Address	Data
2050	8272	15
2051	8273	0
2052	8274	0
2053	8275	0
2054	8276	0
2055	8277	13

Registers:

Registers			Flag
A	0D		S 0
BC	0C	00	Z 0
DE	00	00	
HL	00	00	
PSW	00	00	AC 1

Q.4 Program to count no. of 1's in given number.

Statement:

Input number from memory location 2050H and store result in 2055H.

Program:

```
11  
12  lda 2050h  
13  mvi c, 08h  
14  mvi b, 00h  
15  x: rar  
16  jnc y  
17  inr b  
18  y: dcr c  
19  jnz x  
20  mov a, b  
21  sta 2055h  
22  hlt
```

Output:

Start	2050h	
Address (Hex)	Address	Data
2050	8272	111
2051	8273	0
2052	8274	0
2053	8275	0
2054	8276	0
2055	8277	6

Registers:

Registers			Flag	
<i>A</i>	06		<i>S</i>	0
<i>BC</i>	06	00	<i>Z</i>	1
<i>DE</i>	00	00		
<i>HL</i>	00	00		
<i>PSW</i>	00	00		
			<i>AC</i>	0

Q.5 Display number from 1 to 10.

Statement:

NULL

Program.

```
lxi h, 2050h
mvi b, 01h
mvi c, 0ah
x: mov m, b
inx h
inr b
dcr c
jnz x
hlt
```

Output:

Start	2050h	
Address (Hex)	Address	Data
2050	8272	1
2051	8273	2
2052	8274	3
2053	8275	4
2054	8276	5
2055	8277	6
2056	8278	7
2057	8279	8
2058	8280	9
2059	8281	10

Registers:

Registers			Flag	
A	06		S	0
BC	0B	00	Z	1
DE	00	00	AC	0
HL	20	5A		
PSW	00	00		

Q.6 Find the sum of numbers from 1 to 10.

Statement:

NULL

Program:

```
2 lxi h, 2050h
3 mvi b, 01h
4 mvi c, 0ah
5 mvi a, 00h
6 x: add b
7 inx h
8 inr b
9 dcr c
0 jnz x
1 sta 2055h
2 hlt
```

Output:

Start 2050h

Address (Hex)	Address	Data
2050	8272	1
2051	8273	2
2052	8274	3
2053	8275	4
2054	8276	5
2055	8277	55
2056	8278	7
2057	8279	8
2058	8280	9
2059	8281	10

Registers:

Registers			Flag
A	37		S 0
BC	0B	00	Z 1
DE	00	00	
HL	20	5A	AC 0
PSW	00	00	