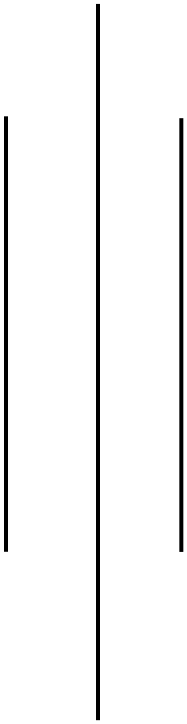
SHAID SMARAK COLLEGE

Kirtipur, Kathmandu



Assignment No. 6 of Microprocessor

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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 locatiomn 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

A	10	
BC	0C	00
DE	00	00
HL	00	00
PSW	00	00

Flag

S 0

Z 0

AC 0

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:

```
;code
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

A	0C	
BC	0C	00
DE	00	00
HL	00	00
PSW	00	00

Flag

S 0

Z 0

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		
DE	00	00	Z	0
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:

```
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	
A	06		S	0
BC	06	00	Z	1
DE	00	00		
HL	00	00	AC	0
PSW	00	00		

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

A	06	
BC	0B	00
DE	00	00
HL	20	5A
PSW	00	00

Flag

S 0

Z 1

AC 0

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 2055hA
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

A	37	
BC	0B	00
DE	00	00
HL	20	5A
PSW	00	00

Flag

S 0
Z 1
AC 0