

## BS-CS 3rd Semester

### Computer Organization and Assembly Language

#### Assignment No. 4

**Q. No. 1:** Write an Assembly Language Program to copy a block of data consisting of 100 bytes from memory locations starting from 4000h to memory locations starting from 5000h.

**Q. No. 2:** Write an Assembly Language Program to find the sum of 100 numbers each of one byte stored in the memory locations starting from 4000h.

**Q. No. 3:** Write an Assembly Language Program to find the average of 100 numbers each of one byte stored in the memory locations starting from 4000h.

**Q. No. 4:** Write an Assembly Language Program to find the factorial of a number stored in CX.

**Q. No. 5:** Write an Assembly Language Program to find the minimum and maximum numbers in an array (List) of 100 numbers (indexed from 1 to 100), each of one byte. The minimum number must be in AL while maximum in AH.

**Q. No. 6:** What will be the contents of DX and AX registers after the execution of the code given below:

```
org 100h
    MOV CX, 5
    MOV AX, 1
    MOV DX, 0
LABEL:
    MUL CX
    LOOP LABEL
RET
```

**Q. No. 7:** What will be the contents of CX register after the execution of the code given below:

```
org 100h
    MOV AX, 81
    MOV CX, 0
    MOV BX, 9
LABEL:
    INC CX
    SUB AX, BX
    JNZ LABEL
RET
```

**Q. No. 8:** What will be the contents of BL register after the execution of the code given below:

```
org 100h
    MOV SI, -1
    MOV CX, 10
    MOV BL, 0
LABEL1:
    INC SI
    MOV AL, LIST[SI]
    TEST AL, 01
    JZ LABEL2
    ADD BL, AL
LABEL2:
    LOOP LABEL1
    RET
LIST DB 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
```

**Q. No. 9:** What will be the contents of BL register after the execution of the code given below:

```
org 100h
    MOV SI, -1
    MOV CX, 10
    MOV BL, 0
LABEL1:
    INC SI
    MOV AL, LIST[SI]
    TEST AL, 01
    JNZ LABEL2
    ADD BL, AL
LABEL2:
    LOOP LABEL1
    RET
LIST DB 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
```

**Q. No. 10:** What will be the output after execution of the code given below:

**Part (a):**

```
include 'emu8086.inc'
#make_COM#
org 100h

        MOV AX, 0
        MOV CX, 5
LABEL:
        PRINTN 'ALLAH'
        ADD AX, 100
        CMP AH, 0
        LOOPE LABEL
RET
```

**Part (b):**

```
include 'emu8086.inc'
#make_COM#
org 100h

        MOV SI, 0
        MOV CX, 5
LABEL:
        PRINTN 'ALLAH'
        MOV AL, LIST[SI]
        INC SI
        CMP AL, 7
        LOOPNE LABEL
RET
LIST DB 9, 8, 7, 6, 5
```