

BS-CS 3rd Semester

Computer Organization and Assembly Language

Assignment No. 2

Q. No. 1: What will be the physical address?

I. 4370H : 561EH

II. 7A32H : 0028H

III. 0100H : 0125H

IV. 1234H : 7890H

Q. No. 2: What will be the contents of the register(s) used and status of Carry, Sign, and Zero flags after execution of the following?

I.

```
MOV AL, VAR1
MOV AH, FFH
ADD AH, AL
RET
VAR1 DB, 01H
```

II.

```
K EQU 15BAH
MOV AX, K
RET
```

III.

```
STC
MOV AL, FFH
MOV BL, FFH
SUB AL, BL
RET
```

IV.

```
STC
MOV AL, FFH
MOV BL, FFH
SBB AL, BL
RET
```

V.

```
MOV AL, 13
MOV BL, 0DH
CMP AL, BL
RET
```

VI.

```
MOV AL, 15
MOV BL, -3
IMUL BL
RET
```

VII.

```
MOV AX, 1245
MOV BX, 15
MUL BX
RET
```

VIII.

```
MOV AX, 1255
MOV BL, 50
DIV BL
RET
```

IX.

```
MOV AX, 4587
MOV DX, 8964
MOV BX, 4589
DIV BX
RET
```

X.

```
MOV AL, 7
SHR AL, 3
RET
```

Q. No. 3: Write an instruction for the following:

- I. To declare a variable 'VAR1' of type byte and assign a value of 15
- II. To declare a variable 'VAR2' of type word and assign a value of 1254
- III. To declare a constant 'CON1' having value of 9
- IV. To declare an array 'LIST1' of type byte having values of 9, 15, 1, 45, and 51
- V. To declare an array 'LIST2' of type byte having 150 values, where 1, 2, 3, 4, and 5 is repeated 30 times
- VI. That adds the contents of AX and CF to BX
- VII. That subtracts the contents of CX and CF from AX
- VIII. That divides the contents of AX by the contents of BL
- IX. That shifts the contents of CL register towards left 5 times
- X. That rotates the contents of DL register towards right 3 times along with CF

Q. No. 4: Differentiate between:

- I. SUB and CMP
- II. AND and TEST
- III. SHL and SAL
- IV. SHR and SAR
- V. ROL and RCL
- VI. ROR and RCR