

## Assignment#1

### Instructions

Scanned copy of handwritten assignment is to be uploaded on Teams/portal before deadline.

### Question#1

The values of various registers before executing each of the following instructions are as follows:

DS:0x1AB0 SI:0x0014 DI:0x0002 AX:0xACBD BX:0x012C CX:0xFEDC DX:0x3120

BP: 0x0110 SS:0x08C0

Execute the following instructions and update the registers and memory accordingly. Also, calculate the physical addresses in the hexadecimal number system. (10 Marks)

Instructions	Physical Address	Registers
MOV [BX], CX		
MOV [BP+SI], DX		
MOV AX, [BX+DI]		AX = _____
MOV [DI+6],CX		
MOV DX, [0x0100+SI]		DX = _____

### Memory

	0x0	0x1	0x2	0x3	0x4	0x5	0x6	0x7	0x8	0x9	0xA	0xB	0xC	0xD	0xE	0xF
0x1AB0 : 0x0000																
0x1AB0 : 0x0100																
0x1AB0 : 0x0110				45	56	78										
0x1AB0 : 0x0120														12	AB	CD
0x08C0 : 0x0100																
0x08C0 : 0x0110																
0x08C0 : 0x0120														FF	EE	89
:																
:																
:																
:																
:																
:																
:																

NAME \_\_\_\_\_ REG# \_\_\_\_\_

Question#2. Which of the following instructions is invalid? In the case of invalid, give reasons; otherwise, write "valid." (2x10 Marks)

Instructions	Reasons
MOV AX, BH	
MOV BL,256	
MOV ES, CS	
MOV ES, 0xFFCD	
MOV [DX], BX	
MOV [BL], AX	
MOV [SI + DI], AX	
MOV CS, AX	
MOV AL,0BH	
MOV DI, IP	

Question#3: (5+ 5 points)

- a) For the given program, write the value of destination operand after execution of each instruction.

Instructions	Registers Contents of AX	Flags					
		OF	ZF	SF	PF	AF	CF
XOR AX, AX							
XOR AX, 0x6450							
AND AX,125FH							
OR AX,1FCDH							
NOT AX							
Neg AX							