REG #
NAME

INSTRUCTIONS:

1. Edit name and reg # in header before printing this assignment.
2. Then solve this assignment and scan using CamScanner.
3. Also add your neat working on white printer pages.
4. Submit L1F24BSCS0000.PDF File on portal.

Question#1

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

DS:0xA1B9 SI:0x0024 DI:0x0032 BP: 0x0110 SS:0x3C80

AX:0xABCD BX:0x12C2 CX:0xFEED DX:0x2032 ES:0x1AB0

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

Instructions	Physical Address	Registers
MOV [BX+SI], CX		
MOV [BP+DI+0x0016], DX		
MOV AX, [BX+DI]		AX=
MOV [BX+SI+9D], CX		
MOV DX, DS:[BP+SI+11BCH]		DX=

Memory

			0x0	0x1	0x2	0x3	0x4	0x5	0x6	0x7	0x8	0x9	0xA	0xB	0xC	0xD	0xE	0xF
0x1AB0	:	0x0120																
0x1AB0	:	0x0130				50	56	78	AB									
0x1AB0	:	0x0140																
0x3C80	:	0x0150								20	89						AB	CD
0x3C80	:	0x0160																
0xA1B9	:	0x12E0								10	67						40	92
0xA1B9	:	0x12F0	66	F0	50	30	12	23	45									
0xA1B9	:	0x1300															EE	89

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b) Write the status of various flags after the execution of the ADD instruction. (6 Marks)

MOV AL, 0x80	CF	ZF	SF	OF	PF	AF
ADD AL, AL						

Question#2 (3 + 3 + 3 Marks)

Write set of instructions to store 0x0BAD in memory at physical address 0x07DE1 using the following addressing modes one by one.

a) Direct Addressing Mode
b) Register Indirect Addressing Mode
c) Register relative base plus index addressing mode.

Part-A	Part-B	Part-C

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Question#3

Review the following instructions and fill in the table accordingly.

1. Write TRUE for VALID instructions only?
2. In the case of INVALID, write FALSE and also give reasons.

NOTE: Reasons based on rules or addressing modes. Avoid lengthy discussion.

Sr#	Instructions	Valid/ Invalid	Reasons for INVALID instructions
1.	MOV 0X1234, AX		
2.	MOV AX, [CX]		
3.	MOV AL, [BL + 4]		
4.	ADD DX, [BX+DX+2]		
5.	MOV CS, AX		
6.	ADD NUM1, NUM2		
7.	MOV DS, 0X720		
8.	ADD AX, BL		
9.	MOV BL, SI		
10.	MOV AX, [BP+BX]		
11.	MOV DX, [SI+DI]		
12.	ADD BX, [NUMBER + CX]		
13.	MOV [0X1234], BL		
14.	MOV AX, [BX+SI+4]		