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National University of Computer and Emerging Sciences, Lahore Campus

Course:	Computer Organization and Assembly Language	Course Code:	EE213
Program:	BS(Computer Science)	Semester:	Fall 2019
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Paper Date:	04-09-2019	Weight	
Section:	[redacted]	Page(s):	2
Exam:	Quiz 1	Roll No:	[redacted]

1) Consider the following Memory Area and give the answer of the following question

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0C21:01A0	13	96	D0	EC	D0	E0	A2	1E	99	80	3E	20	99	00	75	24
0C21:01B0	A2	24	99	DA	C9	75	1D	0A	EC	74	19	8B	0E	21	90	E3
0C21:01C0	13	B0	1A	D6	33	FF	3E	D6	D0	96	F2	AE	07	75	D5	4F
0C21:01D0	89	3E	21	D6	BB	06	97	80	3E	13	96	00	74	03	BB	4C
0C21:01E0	97	BE	C3	96	88	3E	D5	98	B9	D8	00	AC	3C	3F	75	02
0C21:01F0	8A	07	3C	20	74	01	AA	43	E2	F1	B1	03	B0	20	38	04
0C21:0200	74	12	B0	2E	AA	AC	3C	3F	75	02	8A	07	3C	20	74	01
0C21:0210	AA	43	E2	F1	32	C0	AA	C3	F6	46	04	02	75	43	8B	A3

3
0C40F
- 0C210
00 1FF

Which Logical address (i.e segment and offset address) in the above Memory area is equal to Physical address 0C40F? (2)

2

0C21:01FF

2) What will be stored in data label after executing following line of code, let data is stored at 0100 offset. (Part i and part ii are separate, do not copy part i answer in part ii) both are legal instructions. (2)

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i)

```
mov byte [data], 0x4567
```

	0	1	2	3	4	5
DS:0100	67					

ii)

```
mov word [data], 0x456789AB
```

	0	1	2	3	4	5
DS:0100	AB	89				

67230 + 0ABC = 67CEC

71000 + 0110 = 71110

67CEC − 67CEC = 09424

FFFF0 + FFFF = 1OFFEF

1OFFEF − 10000 = FFFEF

3) If it is required to store a byte in each of the following range of memory locations, how many bytes will be stored in total: (2) 1.5

Memory Locations Seg : offset to Seg : Offset	Number of bytes (you can write answer in hex)
6723:0ABC to 7100:0110	$(9424)_{16}$ ✓
1000:0000 to FFFF:FFFF	$(FFFEF)_{16}$ ✗

4) Write down name of any two Control flags. (2) 2

Interrupt Flag & Direction Flag ✓

5) Write down the value of CF, OF, SF and PF register after execution of last instruction of following code. (2) 1.5

```
MOV AL, 0x50
MOV BL, 0x32
Add AL, BL
Add AL, BL
```

0101 0000
0011 0010
10000010

Flag	Value
CF (Carry flag)	1 ✓
OF (Overflow flag)	0 ✓
SF (Sign flag)	1 ✓
PF (Parity flag) even	0 ✗

10000
0000
10000

FFFF0
FFFF
1FFFEF

1000 0010
0011 0010
1011 0100

10000
FFEF
0FFEF

11

0101 0000
0011 0010
1000 0010

0111 0010
0011 0010
1010 0100

1000 0010
0011 0010
1 0110 0100