Quiz # 02 **Course Title:** Microprocessors and Assembly Language **Total Marks:** 15
Course ID: CSE - 4503

Time: 25 Mins. **Student Id: ..……..…** **Obtained Marks: …...**

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Q1. Derive the machine code for the instruction: **IN AX, FE h**. Show how the derived contents can be stored in different memory locations. **3**

Q2. Your given Student Id format is **`18..XXXX`**. Use last 4 (four) digits of your id as a hexa-decimal value (i.e., **`XXXXh`**) and consider the following table. **12**

MOD / RM	00	01	10	11	
				W = 0	W = 1
000	[BX] + [SI]	[BX] + [SI] + d8	[BX] + [SI] + d16	AL	AX
001	[BX] + [DI]	[BX] + [DI] + d8	[BX] + [DI] + d16	CL	CX
010	[BP] + [SI]	[BP] + [SI] + d8	[BP] + [SI] + d16	DL	DX
011	[BP] + [DI]	[BP] + [DI] + d8	[BP] + [DI] + d16	BL	BX
100	[SI]	[SI] + d8	[SI] + d16	AH	SP
101	[DI]	[DI] + d8	[DI] + d16	CH	BP
110	d16 (direct address)	[BP] + d8	[BP] + d16	DH	SI
111	[BX]	[BX] + d8	[BX] + d16	BH	DI

Now, using the table derive the machine code contents of the following MOV instructions and show how many memory locations are required to store the derived machine codes:

i. `MOV XXXX h [DI], AH`
ii. `MOV AX, [XXXX h]`
iii. `MOV DX, XXXXh`

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