EE213 Computer Organization and Assembly Language
Quiz I – Fall 2019
September 18, 2019
Paper-B Solved

1. Assuming the following data segment starts at **0000 1F07h**, answer the following questions: **[6 Points]**

```
.data
      val32       LABEL       DWORD
      var1        WORD        0F001h, 2 DUP (0F00Fh, 0F0Dh)
      var3        DWORD       $
.code
      MOV         EAX, PTR DWORD [val32+2]          ;EAX = 0F 0D F0 0F
      INC         AL                                ;EAX = 0F 0D F0 10
      MOV         EDX, EAX                          ;EDX = 0F 0D F0 10
      XCHG        AL, AH                            ;EAX = 0F 0D 10 F0
      XCHG        DX, WORD PTR [var3 + 2]           ;EDX = 0F 0D 00 1F
```

VAL32/VAR1	0000 1F07h	01		0000 1F0Fh	0D
	0000 1F08h	F0		0000 1F10h	0F
	0000 1F09h	0F	VAR3	0000 1F11h	11
	0000 1F0Ah	F0		0000 1F12h	1F => 10
	0000 1F0Bh	0D		0000 1F13h	00 => F0
	0000 1F0Ch	0F		0000 1F14h	00
	0000 1F0Dh	0F			
	0000 1F0Eh	F0			

A. What does **EAX**, and **EDX** contain after the above code gets executed?

EAX = 0F 0D 10 F0
EDX = 0F 0D 00 1F

B. Draw out the **var3**'s memory look up (byte by byte) after above code gets executed.

0000 1F11h	11
0000 1F12h	10
0000 1F13h	F0
0000 1F14h	00

2. Fill in the blanks: **[2 Points]**

I. The **LENGTHOF** operator counts the number of elements in an array.

II. The EDS register is used to store the **BASE ADDRESS OF DATA SEGMENT**

III. **SIGN FLAG** flag is set when an arithmetic or logical operation generates a negative result.

IV. What special purpose does the ECX register serve?

It serves as **LOOP COUNTER**.

3. Complete the given diagram. **[4 Points]**