EE213 Computer Organization and Assembly Language
Quiz I (Section F) – Fall 2018
September 24th, 2018
Paper-B Solution

Answer the following questions.

1. What happens when CPU wants to write some data to some location in memory? Elaborate how this is achieved (*your answer should be limited to registers for this purpose and busses*). **(2 Points)**

FREE RESPONSE QUESTION

2. Given the code snippet below, fill in the register value/status of FLAGS where indicated:**(3 Points)**

```
FCFA0000h    MOV AL, 255

FCFA0001h    MOV BL, 10
FCFA0002h    MOV CL, 20
FCFA0003h    ADD AL, 1          ;CF: 1 OF: 0 ZF: 1

FCFA0004h    SUB BL,CL          ;CF: 1 OF: 0 SF: 1
FCFA0005h    DEC AL
FCFA0006h    INC BL
FCFA0007h    INC CL             ;EIP: FCFA0008h
FCFA0008h    SUB BL,CL
```

3. Executing the following code snippet, what value will be stored in **EAX**? **(2 Points)**

```
.data
   val32  LABEL DWORD
   var    BYTE 12h,13h
   var2   WORD 1100h, 2 DUP (‘AB’)
   var3   DWORD $, $
.code
   MOV    EAX, val32
```

A. 11001312h **B.** 12131100h **C.** 00111312h **D.** 11001213h

4. Assuming that data segment in Question#3, above, starts at **1000FECEh.** Draw out the byte by byte memory look up with addresses for var3. **(4 Points)**

1000FEDA	DAh
1000FEDB	FEh
1000FEDC	00h
1000FEDD	10h
1000FEDE	DEh
1000FEDF	FEh
1000FEE0	00h
1000FEE1	10h

It is also considerable if a student has reserved a single byte for each of ‘A’ and ‘B’

5. With the help of LOOP replace each of the following NEGATIVE elements in **wArray** with its mathematical positive without using MUL, write only the code part: (**5 Points**)

```
wArray    SWORD  1,-2,7,-6,15,-12,25,-20,37,-30
```

Solution:

```
.code
   MOV ECX, 5
   MOV ESI, OFFSET [wArray+2]
   L1: WORD PTR NEG [ESI]
   ADD ESI,4
   LOOP L1
```