EE213 Computer Organization and Assembly Language
Quiz I (GR I) – Spring 2019
February 21st, 2019
Paper-A
Student Name: _____ Roll#_____

Answer the following questions.

1. Draw the instruction execution cycle of following instruction. **[2 Points]**

```
ADD     AX, mem16
```

2. Using *indirect addressing mode* and LOOP only, replace ONLY NEGATIVE elements in **wArray** with their positive twice without using MUL, write only the code part. **[4 Points]**

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

```
.CODE
    MOV   ESI, 2
    MOV   ECX, 5
    L1:   MOV   AX, [wArray+ESI]
          NEG   AX
          ADD   AX,AX
          MOV   [wArray+ESI], AX
          ADD   ESI,4
    LOOP  L1
```

3. Assuming following data segment, answer the following questions: **[4 Points]**

```
.data
   val64      LABEL      QWORD
   var1       WORD       1100h, 2 DUP (0FD1h, 1F0Dh)
   var2       BYTE       12h,13h, 'AB'
   var3       DWORD      $, $
```

A. What value will be returned when Label **val64** is accessed?
0F D1 1F 0D 0F D1 11 00h

B. Assuming that data segment above starts at **FAFA 0000h.** Draw out the byte by byte memory look up with addresses for var3.

FAFA 000Eh	**0E**
FAFA 000Fh	**00**
FAFA 0010h	**FA**
FAFA 0011h	**FA**
FAFA 0012h	**12**
FAFA 0013h	**00**
FAFA 0014h	**FA**
FAFA 0015h	**FA**

4. Elaborate the difference between LENGTHOF and TYPE operators with the help of some working example. **[2 Points]**