Name: KEY **Id#**

COE 205, Term 101

Computer Organization & Assembly Programming

Quiz#3

Date: Wednesday, Nov. 10, 2010

Q1. Fill the blank in each of the following:

1. Assume that the instruction JMP NEXT is at offset address 000000A1H in the code segment, its size is 2 bytes, and the label NEXT is at offset 00000020H. Then, the address stored in the assembled instruction for the label NEXT is <u>FFFFFF7D</u>.

    EIP=000000A1+2=000000A3. Stored address is NEXT-EIP=00000020-000000A3=FFFFFF7D.

2. Assuming that EBX=FFFFFFFE and ESI=00000010, the address of the source operand in this instruction MOV AL, [EBX+ESI*2-5] is <u>00000019</u> and its addressing mode is <u>Based-Indexed addressing mode</u>.

3. The value of EAX after executing the following instructions will be <u>21d=00000015</u>.

               mov eax, 0
               mov ecx, 6
        L1:
               add eax, ecx
               loop L1

4. The following instructions **{mov eax, esi; add eax, eax; add eax, ebx; add eax, OFFSET Array}** have the following equivalent <u>single</u> instruction <u>LEA EAX, Array[EBX,+ESI*2].</u>

5. The content of register EAX after executing the instructions below will be <u>12d=0000000C.</u>

```
.DATA
     ARRAY        DWORD  1, 2, 3, 4
                  DWORD  5, 6, 7 , 8
                  DWORD  9, 10, 11, 12
RS EQU   SIZEOF ARRAY
.CODE
     MOV ESI, 2*RS
     MOV EDI, 3
     MOV EAX, ARRAY[ESI+EDI*TYPE ARRAY]
```

The content of Intarray after executing the program below will be: <u>60000h, 50000h, 40000h, 30000h, 20000h, 10000h.</u>

```
.DATA
Intarray DWORD 10000h, 20000h, 30000h, 40000h, 50000h, 60000h
.CODE
main PROC
    mov esi, 0
     mov edi, LENGTHOF Intarray-1
    mov ecx, LENGTHOF Intarray /2
L1:
    mov eax, Intarray[esi*4]
    xchg eax, Intarray[edi*4]
    mov Intarray[esi*4], eax
    inc esi
    dec edi
    loop L1
    exit
main ENDP
END main
```