

Name: KEY

Id#

COE 205, Term 061
Computer Organization & Assembly Programming

Quiz# 5

Date: Sunday, Jan. 7, 2006

Q1. Given the following macros shown below, determine the **macro expansion**, i.e. the assembly code that will be generated, for the macro invocation **ADDA MyArray, EAX, 10**.

```
Save_Regs    MACRO reg
               IRP R, <reg>
                 PUSH R
               ENDM
             ENDM
Restore_Regs  MACRO reg
               IRP R, <reg>
                 POP R
               ENDM
             ENDM
ADDA          MACRO X, Y, Z
               Local Next
               Save_Regs <ESI, ECX>
               XOR ESI, ESI
               MOV Y, 0
               MOV ECX, Z
               Next:
                 ADD Y, X[ESI*4]
                 INC ESI
                 LOOP Next
               Restore_Regs <ECX, ESI>
             ENDM

               PUSH ESI
               PUSH ECX
               XOR ESI, ESI
               MOV EAX, 0
               MOV ECX, 10
??0000:     ADD EAX, MyArray[ESI*4]
               INC ESI
               LOOP ??0000
               POP ECX
               POP ESI
```