

Name: KEY

Id#

COE 205, Term 071
Computer Organization & Assembly Programming

Quiz# 6

Date: Monday, Jan. 7, 2008

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
```