Name: KEY Id#

COE 205, Term 092

Computer Organization & Assembly Programming

Quiz# 5

 Date: Monday, May 10, 2010

#

# **Q1.** Translate the following High level language constructs into assembly language with the minimum number of instructions possible. Assume that all numbers are signed.

# if (EAX > EBX || (ECX < 100 && EDX>20))

EAX = EAX - 2;

 else

 EDX=EDX+EBX;

 CMP EAX, EBX

 JG if

 CMP ECX, 100

 JGE else

 CMP EDX, 20

 JLE else

 if: SUB EAX, 2

 JMP endif

 else: ADD EDX, EBX

 endif:

# for (ESI=1; ESI< ECX; ESI=ESI+2)

EBX = EBX + ESI

 MOV ESI, 1

 for: CMP ESI, ECX

 JGE endfor

 ADD EBX, ESI

 ADD ESI, 2

 JMP for

 endfor:

# do{

Call RaedInt

while (EAX< ESI || EAX > EDI)

 do: Call ReadInt

 CMP EAX, ESI

JL do

CMP EAX, EDI

JG do

# switch(ESI){

case ‘0’: EAX=EAX + EBX; break;

case ‘1’: EAX=EAX + ECX; break;

case ‘2’: EAX=EAX + EDX; break;

case ‘3’: EAX=EAX + EDI; break;

default: EAX=EAX + EAX;

 }

JMPTable DWORD case0, case1, case2, case3

 SUB ESI, ‘0’

 CMP ESI, 3

 JG default

JMP JMPTable[ESI\*4]

case0: ADD EAX, EBX

 JMP endswitch

case1: ADD EAX, ECX

 JMP endswitch

case2: ADD EAX, EDX

 JMP endswitch

case3: ADD EAX, EDI

 JMP endswitch

default: ADD EAX, EAX

endswitch: