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: