

Name: KEY

Id#

**COE 205, Term 051**  
**Computer Organization & Assembly Programming**  
**Quiz# 4**

Date: Monday, Nov. 14, 2005

Q1. Suppose that you have the following initial content of 8086 registers:

AX=FF04H      BX=0010H      CX=02F2H      DX=0000H

(i) Determine the content of the **destination** operand after the execution of each of the following instructions. Indicate the effect on the **overflow** flag. Use the **initial content** of the registers for the execution of each instruction.

1. MUL BX

DX=000F    AX=F040    OF=1

2. IMUL CL

AX=FFC8    OF=0

3. DIV BX

DX=0004    AX=0FF0    OF=undefined

4. IDIV CH

AH=00      AL=82      OF=undefined

(ii) Write the **minimum** number of instructions to do the following **using only logical** instructions:

1. Clear the content of the Byte variable I.

AND I, 0

2. Change the content of AL register from upper case to lower case and from lower case to upper case, assuming that it contains either upper or lower case alphabetic characters.

XOR AL, 20H