

Name: Key

Id#

COE 205, Term 022
Computer Organization & Assembly Programming

Quiz# 5

Date: Sunday, Apr. 27, 2003

Q1. Based only on logic instructions, do each of the following:

- a. Convert the decimal digit (0-9) stored in register AL to its corresponding character. Note that the ASCII code of '0'=30h.

OR AL, 30H

- b. Check if the number stored in register AL is even or odd.

TEST AL, 1
JZ Even

- c. Convert a lower case character in AL to upper case and upper case character to lower case.

XOR AL, 20H

Q2. Write an assembly program to multiply the signed content of register AL by 48.5 based on shift and addition/subtraction instructions using the smallest number of instructions possible.

```
MOV AH, AL
MOV CL, 4
SAL AL, CL      ; AL = 16 AL
MOV DL, AL     ; DL = 16 AL
SAL AL, 1      ; AL = 32 AL
ADD AL, DL     ; AL = 48 AL
SAR AH, 1      ; AH = 0.5 AL
ADD AL, AH     ; AL = 48.5 AL
```