

Name: KEY

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COE 205, Term 031
Computer Organization & Assembly Programming

Quiz# 4

Date: Sunday, Nov. 30, 2003

Q1. Write an assembly program to change the content of register AL by complementing the even bits and resetting the odd bits to 0. For example, suppose that AL=00011110, your code should change the content of AL to 01000001.

```
XOR AL, 01010101B
AND AL, 01010101B
```

Q2. Write an assembly program to multiply the signed content of register AL by 27.5 based on shift and addition/subtraction instructions using the smallest number of instructions possible.

```
MOV AH, AL
MOV BH, AL
SHL BH, 1           ; BH = 2AL
ADD AL, BH         ; AL = 3AL
SHL BH, 2           ; BH = 8AL
ADD AL, BH         ; AL = 11 AL
SHL BH, 1           ; BH = 16AL
ADD AL, BH         ; AL = 27AL
SAR AH, 1           ; AH = 0.5 AL
ADD AL, AH         ; AL = 27.5 AL
```