

Name:

Id#

COE 205, Term 033
Computer Organization & Assembly Programming

Quiz# 6 Solution

Date: Saturday, July 31, 2004

Q1. Write a procedure, **ReadBin**, to read a binary number. The number of bits to be read is passed on the stack and it can be up to 16 bits. The read number should be returned on the stack. The procedure should restore the status of all registers to their content before the procedure execution. Then, use the procedure to read an 8-bit binary number and store the result in AL. Show the complete program and the place of the procedure in the program. Do not use multiplication instructions in your solution.

```
.model small
.stack 100h
.code
.startup
    MOV AX, 8
    PUSH AX
    CALL READBIN
    POP AX
.exit

READBIN PROC
    PUSH BP
    MOV BP, SP
    PUSH AX
    PUSH BX
    PUSH CX
    MOV CX, [BP+4]
    XOR BX, BX
    MOV AH, 1
Next:   INT 21H
    SHR AL, 1
    RCL BX, 1
    LOOP Next
    MOV [BP+4], BX
    POP CX
    POP BX
    POP AX
    POP BP
    RET
READBIN ENDP

END
```