Experiment 7

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Div/Batch:A/A1   Roll No.07

```
.MODEL SMALL

.STACK 100H

.DATA

    NUM1 DW 36      ; First number

    NUM2 DW 24      ; Second number

    GCD_RESULT DW ?  ; Store GCD result

    LCM_RESULT DW ?  ; Store LCM result

    MSG_GCD DB 'GCD: $'

    MSG_LCM DB ' LCM: $'

    NEWLINE DB 0DH, 0AH, '$'  ; New line for output formatting


.CODE

MAIN PROC

    MOV AX, @DATA

    MOV DS, AX


    MOV AX, NUM1

    MOV BX, NUM2

    CALL GCD        ; Compute GCD

    MOV GCD_RESULT, AX


    MOV AX, NUM1

    MUL BX          ; AX = NUM1 * NUM2
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        DIV GCD_RESULT   ; AX = LCM (Product / GCD)

        MOV LCM_RESULT, AX


        MOV DX, OFFSET MSG_GCD

        MOV AH, 09H

        INT 21H         ; Print "GCD: "


        MOV AX, GCD_RESULT

        CALL PRINT_NUM   ; Print GCD


        MOV DX, OFFSET NEWLINE

        MOV AH, 09H

        INT 21H         ; Print new line


        MOV DX, OFFSET MSG_LCM

        MOV AH, 09H

        INT 21H         ; Print " LCM: "


        MOV AX, LCM_RESULT

        CALL PRINT_NUM   ; Print LCM


        MOV AH, 4CH

        INT 21H         ; Exit program
MAIN ENDP


; GCD Procedure (Euclidean Algorithm)
GCD PROC

        CMP BX, 0
```

```asm
        JE END_GCD

GCD_LOOP:

    MOV DX, 0

    DIV BX          ; AX = AX / BX, Remainder in DX

    MOV AX, BX

    MOV BX, DX

    CMP BX, 0

    JNE GCD_LOOP

END_GCD:

    RET

GCD ENDP


; Print Number Procedure

PRINT_NUM PROC

    MOV CX, 0

NEXT_DIGIT:

    MOV DX, 0

    MOV BX, 10

    DIV BX          ; AX / 10 → Quotient in AX, Remainder in DX

    PUSH DX

    INC CX

    TEST AX, AX

    JNZ NEXT_DIGIT


PRINT_LOOP:

    POP DX

    ADD DL, '0'

    MOV AH, 02H
```

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    INT 21H

    LOOP PRINT_LOOP


    RET

PRINT_NUM ENDP


END MAIN
```

OUTPUT: