Lab Solution 07

Q1. Write an ALP in 8085 to transfer 20 bytes of data in a table to another table by interchanging D1 and D4 bits of each byte.

```
LXI H, 9000H

LXI D, 9020H

MVI C, 14H

LOOP: MOV A, M

ANI 00010010B

CPI 00010010B

JZ NOCHANGE

CPI 00000000B

JZ NOCHANGE

MOV A, M

XRI 00010010B

STAX D

JMP SKIP

NOCHANGE: MOV A, M

STAX D

SKIP: INX H

INX D

DCR C

JNZ LOOP

HLT
```

Q2. Write an assembly language program for 8085 to find the square of ten 8-bit numbers which are less than or equals to 0FH, stored from memory location C090H. Store the result from the end of the source table.

```
LXI H, C090H

LXI D, C09AH

LOOP: MOV A, M

MOV B,A

MOV C,A

XRA A

MULTIPLY: ADD B ;A<-A+B

DCR C

JNZ MULTIPLY

STAX D

SKIP: INX H

INX D

MOV A, L

CPI 9AH

JNZ LOOP

HLT
```

Lab Solution 07

Q3. Write a program in 8085 to sort the 10 data bytes stored in a table in descending order. The data bytes are stored in a table from memory address 8920H.

```
MVI C, 09H

LOOP2: LXI H, 8920H

MVI D, 09H

LOOP1: MOV A, M

INX H

CMP M

JNC OKAY

JZ OKAY

MOV B,M

MOV M, A

DCX H

MOV M, B

INX H

OKAY: DCR D

JNZ LOOP1

DCR C

JNZ LOOP2

HLT
```

Q4. Write a program in 8085 to find the largest and smallest bytes from the list of 20 bytes stored starting from memory location C050H. Store the largest byte and smallest byte in C070H and C071H respectively.

```
LXI H, C050H

MVI C, 13H

MOV D,M ;Max

MOV E,M ;Min

LOOP:INX H

MOV A, D

CMP M ;D-M

JNC SKIP1

MOV D, M

SKIP1: MOV A, E

CMP M ;E-M

JC SKIP2

MOV E, M

SKIP2: DCR C

JNZ LOOP

MOV A, D

STA C070H

MOV A, E

STA C071H

HLT
```