Lab9

> Aim :- Sessional Programs

Q1

- Assembly code to perform binary to gray conversion.

```
MVI A,ABH;
MOV B,A;
STC;
CMC;
RAR;
XRA B;
STA 8050H;
HLT;
```

Q2

- Count no of set and reset bits in a byte.

```
MVI A,10111001B;
MVI B,0H
LOOP:
    INR B;
    MOV C,A;
    MOV A,B;
    CPI 9H
    JZ END;
    MOV A,C;
    RLC;
    JC COUNTSET;
    JNC COUNTUNSET;
    JMP LOOP;
COUNTSET:
    INR E;
    JMP LOOP;
COUNTUNSET:
    INR D;
    JMP LOOP;
END:
MOV A,E;
STA 3001H;
MOV A,D;
STA 3002H;
HLT;
```

Q3

- Swap Content of 2 Memory Location using minimum number of registers.

```
LXI H,3412;
SHLD 2050H;
LXI H,2050H;
MOV A,M;
INX H;
MOV C,A;
MOV A,M;
STA 2050;
MOV A,C;
STA 2051;
HLT;
```

Q4

- Palindrome Checker

```
    MVI A,11111111B;
    MOV B,A
    MVI C, 08H
    MVI D, 00H

REVERSE_LOOP:
    RAR
    RLC
    MOV A,D
    MOV D,A
    MOV A,B
    DCR C
    JNZ REVERSE_LOOP

    CMP B
    JZ PALINDROME
MVI A,3
    HLT

PALINDROME:
MVI A,2
    HLT
```