8085 programs asked in board exam

1. Write a program that finds the number of 0s in a given byte, for 8085 microprocessor.

```
LXI H, 5001H
MOV A,M
MVI C, 08H
MVI B, 00H
MOV D,B
L1:
RLC
JC L2
INR B
L2:
DCR C
JNZ L1
HLT

#ORG 5001H
#DB 5F
```

2. Write a program to copy 10 bytes of data from RAM location starting at 5021H to RAM location starting at 6021H.

```
LXI H, 5021H
LXI D, 6021H
MVI C, 0AH
L1:
MOV A,M
STAX D
INX H
INX D
DCR C
JNZ L1
HLT

#ORG 5021H
#DB 5FH,12H,36H,15H,78H,59H,ABH,56H,8CH,CFH
```

3. Write an ALP for 8085 to find out many positive integers and negative integers are there in an array available from memory location 2500H to 2510H. Store the result at memory locations 2514H and 2512H respectively.

```
LXI H, 2500H
MVI C, 0AH
```

```
MVI B,00H
MOV D,B
L1:
MOV A,M
RLC
JC L2
INR B
JMP L3
L2:
INR D
L3:
INX H
DCR C
JNZ L1
HLT

#ORG 2500H
#DB 5FH,12H,36H,15H,78H,59H,ABH,56H,8CH,CFH
```

4. Write an ALP to count number of 1s in a given byte.

```
LXI H, 5001H
MOV A,M
MVI C, 08H
MVI B, 00H
MOV D,B
L1:
RLC
JNC L2
INR B
L2:
DCR C
JNZ L1
HLT

#ORG 5001H
#DB 5F
```

5. Sixteen bytes of data available from memory location 2500H to 2510H. Write an ALP for 8085 to count even and odd number and store the count in the register B and C for even and odd number respectively.

```
LXI H, 2500H
```

```
MVI C, 0AH
MVI B,00H
MOV D,B
L1:
MOV A,M
RRC
JC L2
INR B
JMP L3
L2:
INR D
L3:
INX H
DCR C
JNZ L1
HLT
```

```
#ORG 2500H
#DB 5FH,12H,36H,15H,78H,59H,ABH,56H,8CH,C2H
```

6. Write an assembly language program for 8085 to generate a Fibonacci series up to eight terms.

```
LXI H, 2021H
MVI C, 08H
MVI B, 00H
MVI D,01H
L1:
MOV M,B
MOV A,B
ADD D
MOV B,D
MOV D,A
INX H
DCR C
JNZ L1
HLT
```

7. WAP in 8085 to transfer ten bytes data from 5050H to 505AH only if data is data is between 30H and 70H else store 00H.

```
LXI H, 5050H
LXI D, 505AH
MVI C, 0AH
L1:
MOV A,M
CPI 30H
JC L2
CPI 70H
JNC L2
STAX D
JMP L3
L2:
MVI A, 00H
STAX D
L3:
INX H
INX D
DCR C
JNZ L1
HLT

#ORG 5050H
#DB 51H,2CH,65H,32H,48H,89H,ABH,F5H,38H,79H
```

8. Write an 8085 program for the following type of addition

$$1^2 + 2^2 + 3^2 + \cdots + 9^2$$

```
# ORG 2500H
# DB 1,2,3,4,5,6,7,8,9
# ORG 0000H
        LXI H,2500
        LXI D,3500
        MVI B,09

L1:     MVI A,00
        MOV C,M

L2:     ADD M
        DCR C
        JNZ L2
        STAX D
        INX H
        INX D
        DCR B
        JNZ L1
```

```
        LXI H,3500
        MVI C,09
        MVI A,00
        MOV B,A

L3:     ADD M
        JNC L4
        INR B

L4:     INX H
        DCR C
        JNZ L3
        HLT
```

9. Write an 8085 ALP to find out the largest number in an array available from memory location starting from 2500H to 2510H. Store the result in the register B.

```
        LXI H,2500H
        MVI C,0FH
        MOV A,M

L1:     INX H
        MOV B,M
        CMP B
        JNC L2
        MOV A,B

L2:     DCR C
        JNZ L1
        HLT
# ORG 2500H
# DB 51H,2CH,65H,32H,48H,89H,ABH,F5H,38H,79H,45H,62H,F2H,26H,66H,7AH
```

10. Write an 8085 ALP to find out the smallest number available in an array available from memory location starting from 2500H to 2510H. Store the result in the register C.

```
        LXI H,2500H
        MVI B,0FH
        MOV A,M

L1:     INX H
        MOV C,M
```

```
        CMP C
        JNC L2
        MOV A,C

L2:     DCR C
        JNZ L1
        HLT
# ORG 2500H
# DB 51H,2CH,65H,32H,48H,89H,ABH,F5H,38H,79H,45H,62H,F2H,26H,66H,7AH
```

11. Write an 8085 ALP to multiply the number 37H and 42H and keep the result in memory.

```
        MVI D, 37H
        MVI B, 42H
        MVI C, 00H
        MOV A,C

L1:     ADD A

        JNC L2
        INR C

L2:     DCR B

        JNZ L1
        LXI H, 2500H
        MOV M,A
        INX H
        MOV M,C
        HLT
```

12. Write an ALP in 8085 to find whether the given number is palindrome or not.

```
        LXI H,5001
        MOV B,M
        MVI D,00
        MVI C,08

L1:     MOV A,B
        RLC
        MOV B,A
        MOV A,D
        RAR
        MOV D,A
        DCR C
        JNZ L1
        CMP B
```

```
        JZ L2
        MVI A,00
        JMP L3

L2:     MVI A,FF

L3:     INX H
        MOV M,A
        HLT
# ORG 5001H
# DB 12
```

8255

1. Write a program to set PC3 and PC5 and reset them after 1 sec.

```
MVI A, 07H
OUT 53H
MVI A, 0BH
OUT 53H
CALL DELAY1SEC
MVI A, 06H
OUT 53H
MVI A, 0AH
OUT 53H
HLT
```

2. Write a program to turn on LEDs connected at port A sequentially from PA0 to PA7 for 1 sec.

```
MVI A, 80H
OUT 57H
START:
RLC
OUT 54H
CALL DELAY1SEC
JMP START
HLT
```

3. Write a program to read the DIP switches and display the reading from port B at port A and port C-lower to port C-upper. Let the address of control word register be 8003H.

```
MVI A, 83H
STA 8003H
LDA 8001H
```

```
STA 8000H
LDA 8002H
ANI 0FH
RLC
RLC
RLC
RLC
STA 8002H
HLT
```