

## **LAB 2**

**AIM: To Analyse Data Transfer, Arithmetic and Logical instructions in 8085.**

### **PRACTICE ASSIGNMENT**

1. Analyze the Data transfer instructions by checking the usage on the 8085 simulator.

- LXI
- LHLD
- SHLD
- LDAX
- STAX
- XCHG

2. Analyze the different Arithmetic and logical instructions by checking the usage on the 8085 simulator.

- DAD (Double Addition)
- ANA, ANI (Logical AND)
- ORA, ORI (Logical OR)
- XRA, XRI (Logical XOR)
- INR, INX (Increment)
- DCR, DCX (Decrement)
- CMA (Complement Accumulator)
- CMP, CPI (Compare)
- STC (Set Carry)

### **LAB ASSIGNMENT**

1. Write an assembly language program to perform following operations: AND, OR, Complement, EX-OR. Store the results in the memory location (pointed by HL register-pair) starting from 2210H respectively and by incrementing HL.

2. Write an assembly language program to 1's complement and 2's complement of a number.

Input: (2234H) = 23H

Output: (2235H) = DCH

(2236H) = DDH

3. Specify the Register contents and the Flag Status as the following instructions are executed having the following initial values A=XX, C =XX, S=0, Z=0, CY=0.

Program:

MVI A, 5EH

ADI A2H

MOV C,A

HLT

4. Write an Assembly program to perform the following operations and verify the contents by step-by-step execution.
- Clear the Accumulator
  - Add 47H
  - Subtract 92H
  - Add 64H

5. In many embedded systems, hardware control registers are used to manage multiple devices or features, such as turning LEDs on/off or controlling motors. If you need to disable a specific feature represented by a particular bit in the control register, how would you achieve the same? Explain your answer.

Write an **8085 assembly program** that results in the value **0x3C** (binary **00111100**) in the **B register** when the **Accumulator** is initially loaded with the value **7FH**.