190050820001

4th Sem / Comp. Engg.

Microprocessors And Peripheral Devices

Practical -

Apparatus Required : 8085 KIT and power supply.

Theory : Problem is analyzed and assembly language program for the problems is written using the instructions MOV, LXI, INX, ADD, SUB, STA and HLT.

Program for Addition of Two 8-bit Numbers (Result 8 bit) :

The first number 48 H is in memory location 2401.

The second number 56 H is in memory location 2402.

The result is to be stored in memory location 2403.

Memory Address	Machine Code	Mnemonics	Operands	Comments
2000	21,01,24	LXI	H,2401 H	Place address of the 1st number in H-L register pair.

2003	7E	MOV	A,M	Move the contents of memory addressed by H-L pair to the accumulator.
2004	23	INX	H	Increased the contents of H-L pair by 1 i.e. address is 2402 in the H-L pair.
2005	86	ADD	M	Add the 2nd number in the first number, and the result is in the accumulator.
2006	32,03,24	STA	2403H	Store the result in memory location 2403.
2009	76	HLT		Stop.

Program for Subtraction of Two - 8 bit Numbers :

1st number of 48H in memory location 2401
2nd number 33H in memory location 2402
result is to be stored in memory location 2403.

Memory Address	Machine Code	Mnemonics	Operands	Comments
2000	21,01,24	LXI	H,2401	Load address of first number in the register pair H-L

2003	7E	MOV	A,M	Move the first number in accumulator
2004	23	INX	H	Add 1 to the contents of H-L register pair.
2005	96	SUB	M	Subtract 2nd number from the first number and the result is placed in the accumulator.
2006	23	INX	H	Get memory address 2403 in the H-L pair.
2007	77	MOV	M,A	Move the contents of accumulator to the memory location whose address is in the H-L register pair (memory address 2403).
2008	76	HLT		Stop.

Result -

$$48 \text{ H}$$
$$- 33 \text{ H}$$
$$15 \text{ H}$$

Procedure -

1) Connect the power supply to the 8085 kit and switch on the power supply.

2) Enter the program and the input data.
3) Execute the program.
4) Check the result.