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NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR

CACHAR, ASSAM

LABORATORY EXCERCISE BOOK

B.TECH. IIIRD SEM.

NAME: SUBHOJIT GHIMIRE

SCH. ID.: 1912160

BRANCH: C.S.E. - B

SUBJECT: MICROPROCESSOR LAB

CODE : EE224

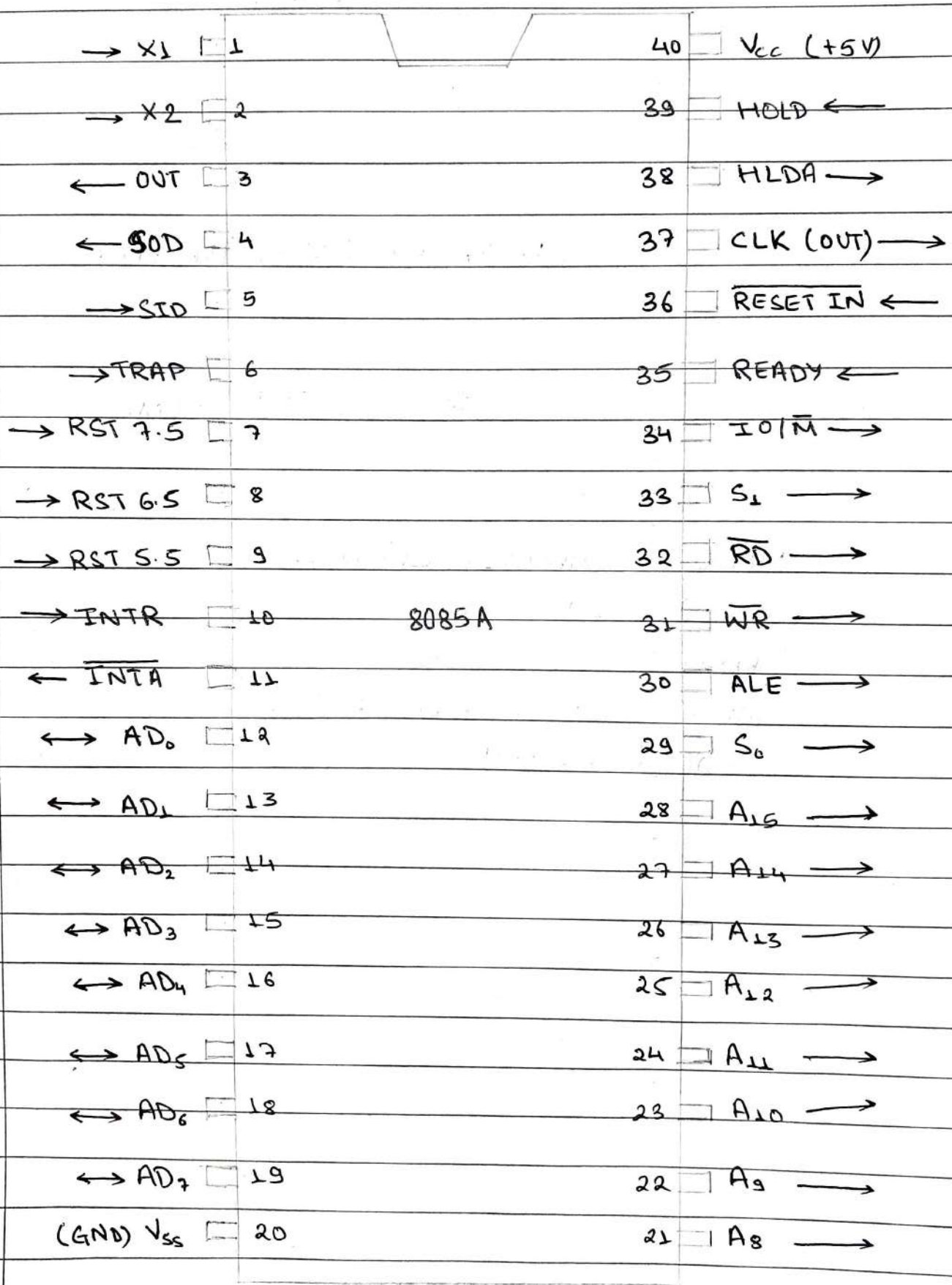

figure.: Pin Diagram of 8085 Microprocessor

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EXPLANATION OF 8085 MP PINS:

1. A8-A15 (Output): These are address bus and used for the most significant bits of the memory address.

2. $AD_0 - AD_7$ (Input/Output): These are time multiplexed address data bus and are used for the least significant 8 bits of the memory address during the first clock cycle and then for data during the second and third clock cycles.

3. ALE (Address Latch Enable): It goes high during the 1st clock cycle of a machine. It enables the lower 8 bits of the address to be latched either in the memory or external latch.

4. IO/M: It is a status signal; when it goes high, the address on the address bus is for I/O device, otherwise for memory.

5. S_1: These are status signals to distinguish various types of operation.

6. RD (Output): It is used to control read signal.

7. WR (Output): It is used to control write operation

8. HOLD (Input): It is used to indicate that another device is requesting the use of address and data bus.

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9. HLDA (Output): It is an acknowledgement signal used to indicate HOLD request has been received.

10. INTR (Input): When it goes high, the microprocessor suspends its normal sequence of operations.

11. INTA (Output): It is an ~~input~~ interrupt acknowledgement signal sent by MP after INTR is received.

12. RST 5.5, 6.5, 7.5 and TRAP: These are various interrupt signals. Here, TRAP has the highest priority.

13. RESET IN (Input): It resets the PC to zero.

14. RESET OUT (Output): It indicates CPU being reset.

15. X_1, X_2 (Input): This circuitry is required to produce a suitable check for operation of the MP.

16. Clk (Output): It is clock output for the user. Its frequency is same at which processor operates.

17. SID (Input): It is used for data lines for serial input.

18. SOD (Output): It is used for data line for serial output.

19. Vcc: It is the +5 volts supply.

20. Vss: It is a ground reference.

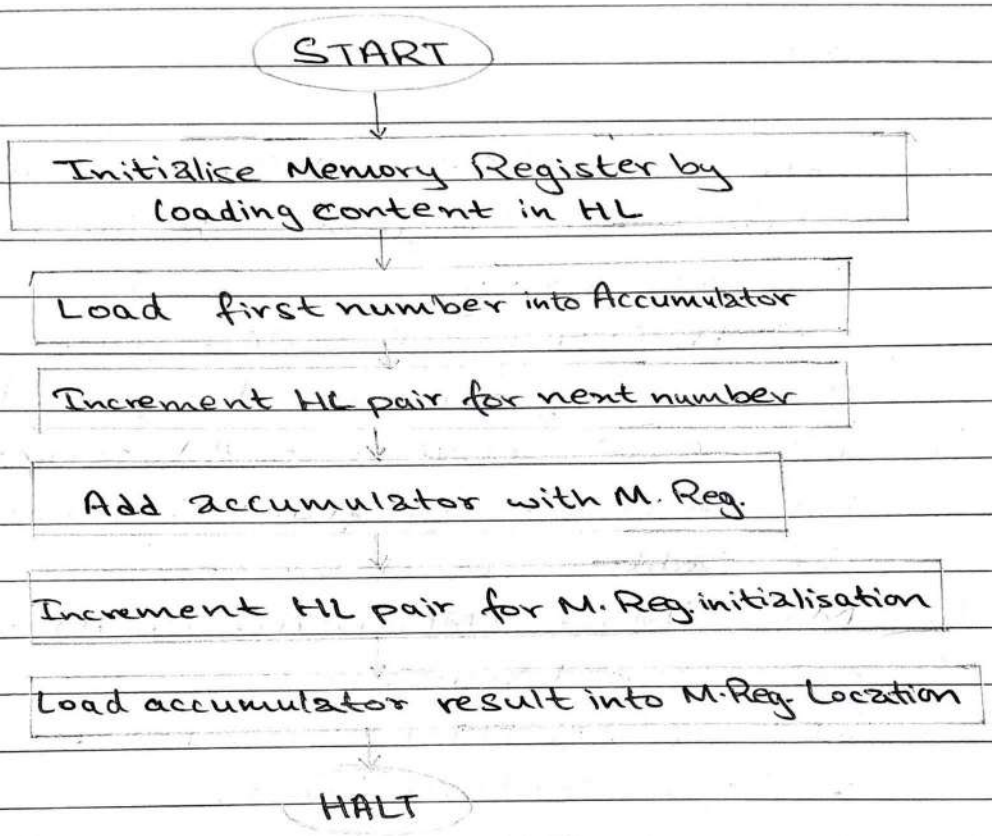
15/09/2020
Experiment - 01

AIM: ADDITION OF TWO 8-BIT NUMBERS.

THEORY:

1. ORG Address (ORIGIN) Directive reserves the starting address for Program Code or data in specified memory array.
2. LXI H (LOAD ADDRESS PAIR IMMEDIATELY) loads 16-bit data in register pair designated by operand.
3. MOV A, M (MOVE M TO A) copies the data ~~byte~~ into accumulator from the memory specified by the address in H-L pair.
4. MVI (MOVE IMMEDIATE DATA) moves immediate value to specified register.
5. INR R (INCREMENT REGISTER) increment the specified register content by 1.
6. INX H (INCREMENT REGISTER PAIR) increments the contents of the register pair by one.
7. ADD M (ADDITION) adds the contents of memory to accumulator.
8. RST 1 (RESET) finishes the execution of the current instruction and stops any further execution.
9. DB (DEFINE BYTE) Directives defined to store values in specified memory array.

FLOW CHART:



PROGRAM:

#ORG 7000H

Memory Address	Mnemonics	Comments	Hexcod
7000	LXI H,	Get address of 1st no. in HL pair	21
7001			01
7002			75
7003	MOV A,M	Move number into accumulator	7E
7004	INX H	HL points address	23
7005	ADD M	Add the 2nd number	86
7006	INX H	HL points	23
7007	MOV M,A	Store result in	77
7008	RST 1	Terminate	CF
#ORG 7501H		Store input at the address	
#DB 12H, 13H		Get two 8 bit no. in successive location	

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RESULT :

INPUT : 7501-13H , 7502-12H

OUTPUT : A-25H , 7503-25H