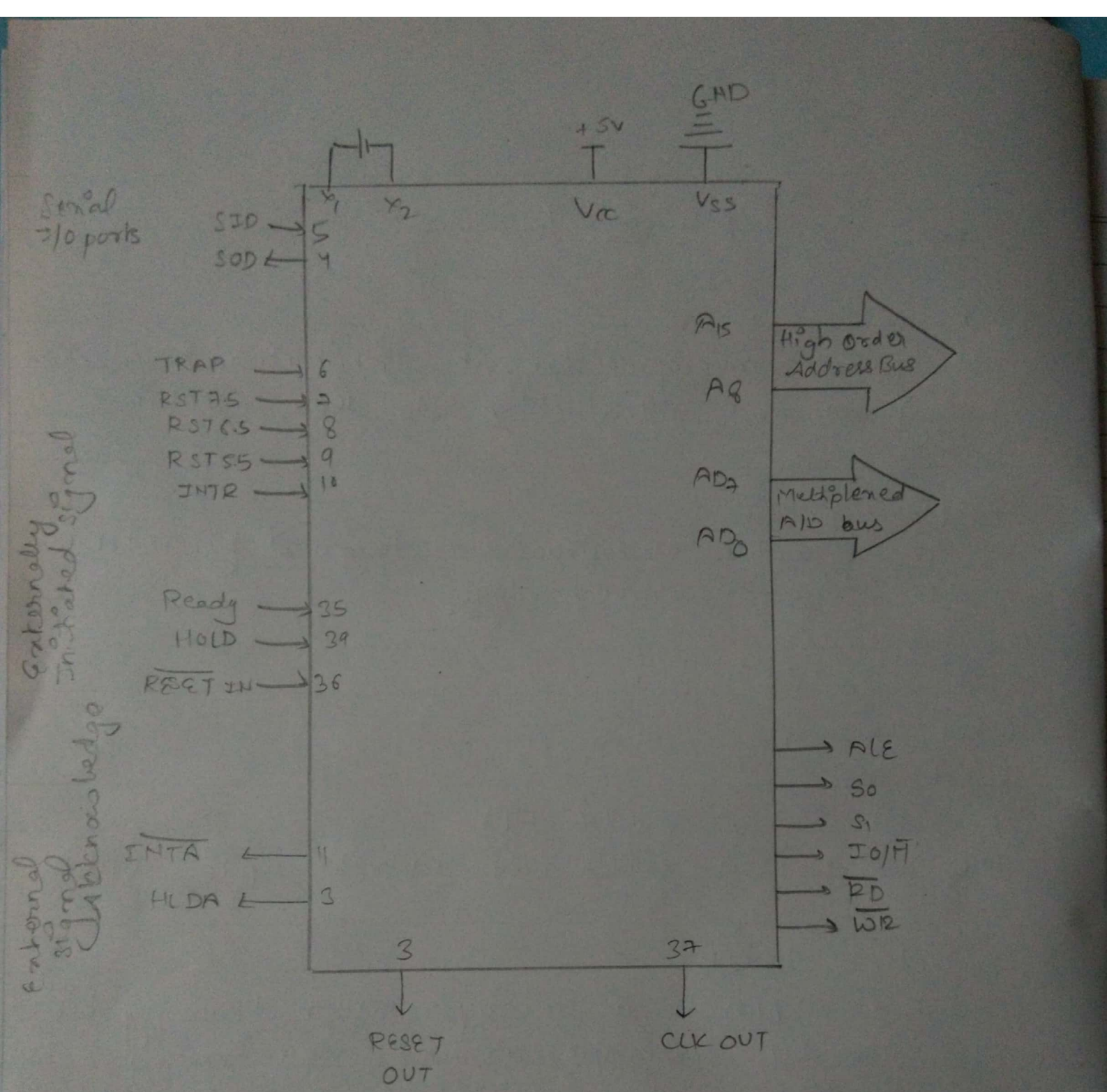
Experiment-1

Aim:-
To study 8085 microprocessor, its architecture & function pin diagram and introduction to the 8085 kit.

Theory:-
8085 is an 8-bit microprocessor designed by INTEL in 1976 using NMOS technology.

Configuration:
- 8 bit data bus
- 16 bit PC
- 16 bit SP
- Six 8-bit Reg (BC, DE, HL)
- 16 bit address Bus which can address upto 64KB.

Introduction to kit:-
ET-8085 AD-LLD is a microprocessor training kit development kit designed around 8085 microprocessor. It has been designed to provide code in interaction with the micro-processor and various peripheral chips. The processor communicates with outside world through 10^4 keys keyboard and liquid crystal displays system provides 16K/32K bytes of EPROM having monitor program & 8K bytes of RAM areas. System provides I/O through two nos. of 8225 PPI. It has 16-bit counter using 8253.



An interface for CRT terminal or PC/AT is provided through serial interface. An additional interface is provided through 8251 USART chip.

→ System specifications:

CPU - 8 bit µp, 8085
XTAL freq. - 6.144 MHz (crystal frequency)
RAM - 8K bytes with provision for expansion
- battery backup for RAM.
EPROM - 16K/32K bytes of EPROM.
Memory - Total on-board capacity of 64 bytes.
Timer - 10 bit programmable content using 8253
I/O lines - 48 I/O lines using 8255.
Interrupts - 8 Interrupts lines through 8259
Serial Interface - RS232 through SID & SOD lines
other Interface - Additional RS232 through R251
- A/D controller
- D/A controller
- Relay I/P
- opto Isolated input
- Printer Input
- Real time clock
keyboard - 101/104 key ASCII keyboard
Display - 70X21 LCD display
Bus - All data, address & control signals
Power supply - 15V, 1.5A per kit & serial I/P.

I/O Devices :-

→ 8255 (programmable peripheral Devices): 8255 is a programmable peripheral devices (PPD) designed general purpose I/O device to interface with peripheral device since the function configuration of 8255 is programmed by system software.

→ 8253 (PIT): This chip is programmable internal Times/ counter and can be used for the generation of accurate time delays under software control.

→ 8251 (USART): This chip is programmable communicator interface. This device accepts data character from CPU in parallel format and then converts them into serial data character for CPU.

→ 8259 (Interrupt control): 8259 is a device specially designed for use in real time; interrupt driven microprocessor system. It manages '8' level of requests & has built in features for expandability to other 8259's.

List of commands:

L - List a memory block

M - Examine / Modify Memory
E = Enter a memory block
R - Examine / Modify Register
S - single step
G - Go
B - Block move
I - Insert
D - Delete
N - Insert Data
O - Delete Data
F - File
H - Relocate
J - Memory compare
K - string
P - Print
I - Assemble / Disassemble.

List a memory block (L) →
L (start address), (end address) "shift key" & then "4" key.

L commands allows user to examine contents of a block of memory. To further see values, press <ENTER>, to exit press <ESC> key.

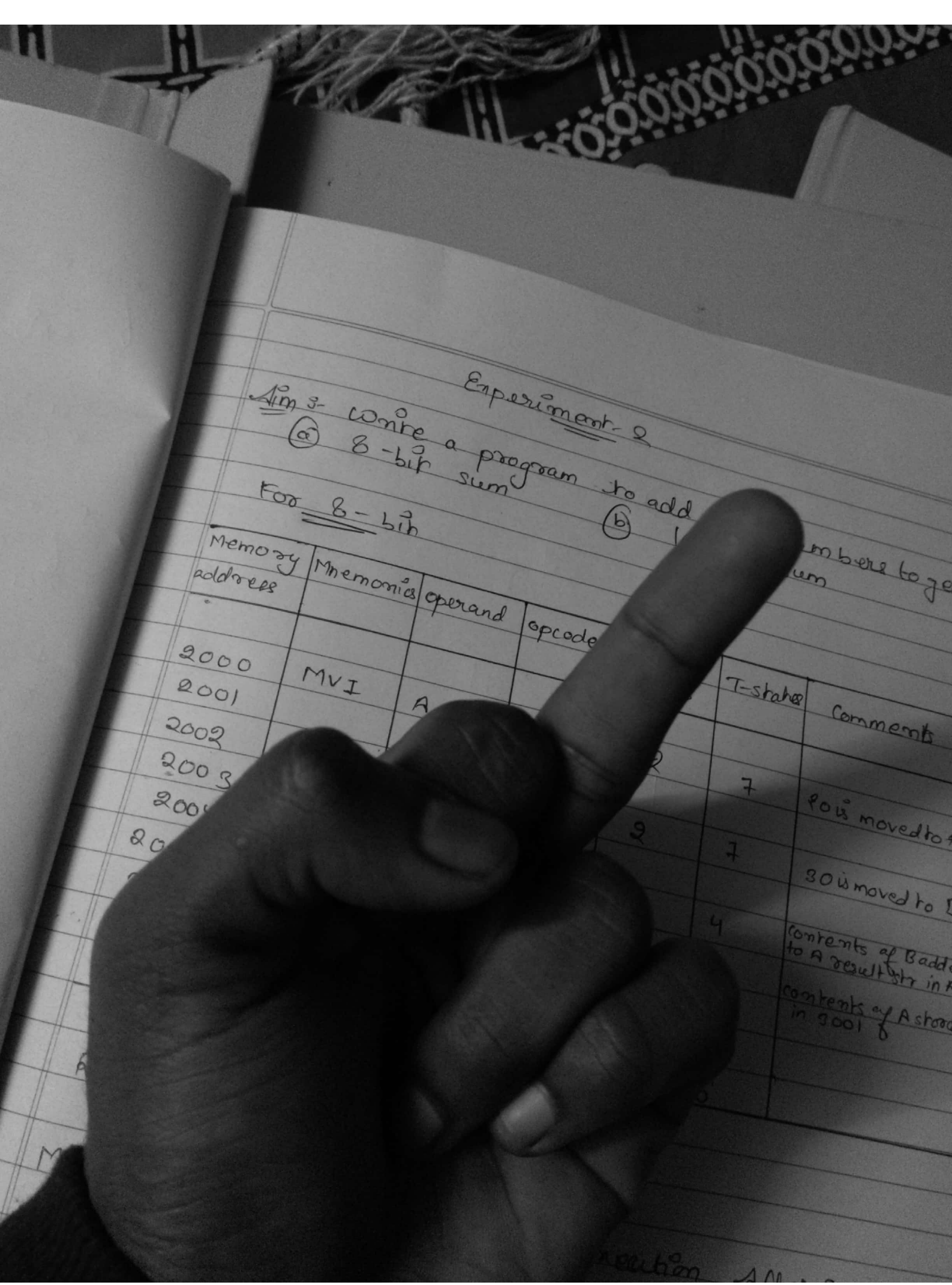
→ Examine / Modify memory (M)
M (start address) <ENTER>

→ ~~EXAM~~ M command allows user to examine constants of any memory location & modify contents of RAM area.

→ Enter a memory block (E)
E (startaddress) <ENTER>

E command allows user to modify the content of any memory location of RAM areas enter address & press <ENTER>

~~R~~ Result :-
8085 microprocessor kit studied. Basic ~~covered~~ operation performed on 8085 AD-LCD kit.



Experiment- 2

Aim :- Write a program to add
(a) 8-bit sum (b)

For 8-bit

Memory address	Mnemonics	operand	opcode	T-states	Comments
2000	MVI	A		7	20 is moved to
2001				7	30 is moved to
2002				4	contents of B add... to A result str in ...
2003					contents of A stor... in 3001
200...					
20...					