LAB 2 REPORT:

STIMULATION OF CMOS AS LOGIC GATES

Aim: Study of HCC4007UB & HCF400UB ICs and basic components like power supply, DSO etc.

Summary of the experiment: Study of HCC4007UB and HCF400UB verifying their

functionality, learning the usage of function generator (FG) and digital storage and how that works as CMOS by two NMOS &PMOS

Components used: HCC4007UB and HCF400UB IC's 1Kohm resistor array -2 , DIP

switches, LED displays, breadboard, power supply.

Design Procedure & circuit gates :

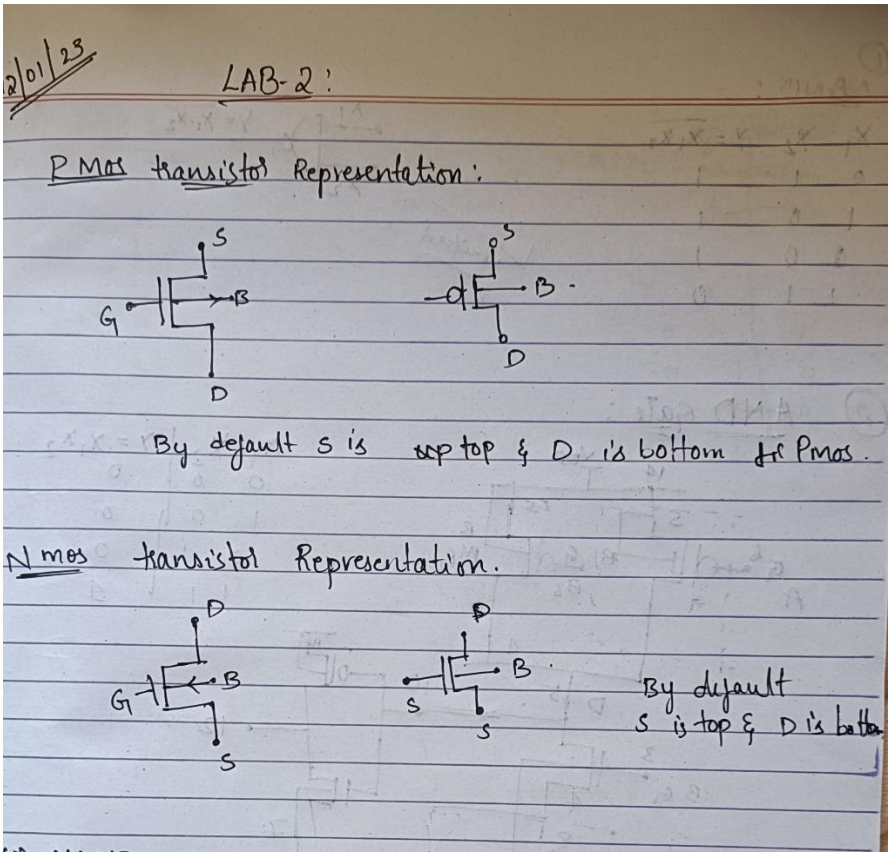
Truth table/Excitation table of all logic gates and logic circuits.

Truth tables are written below for :

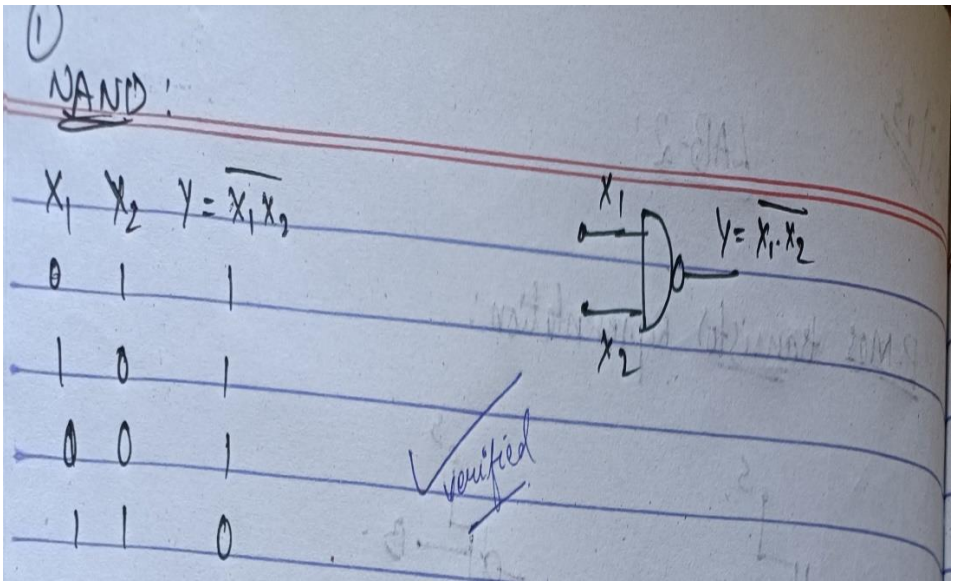
1) NAND Gate
2) AND Gate
3) NOR Gate
4) OR Gate

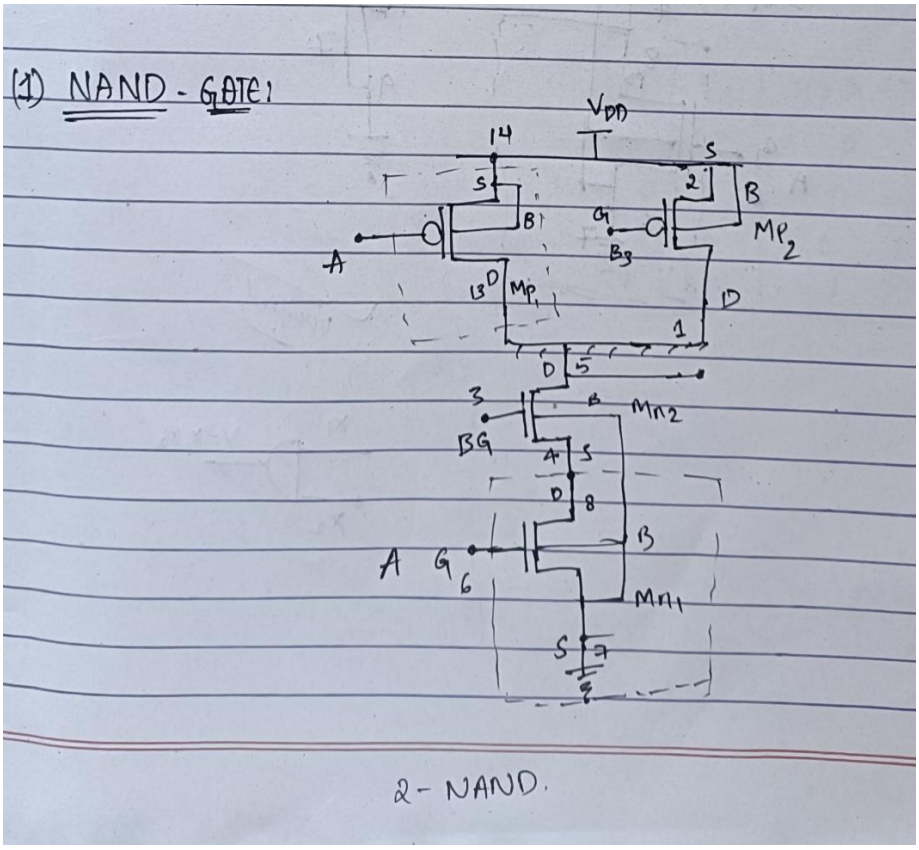
REPRESENTATION OF TRANSISTORS :

PMOS & NMOS :

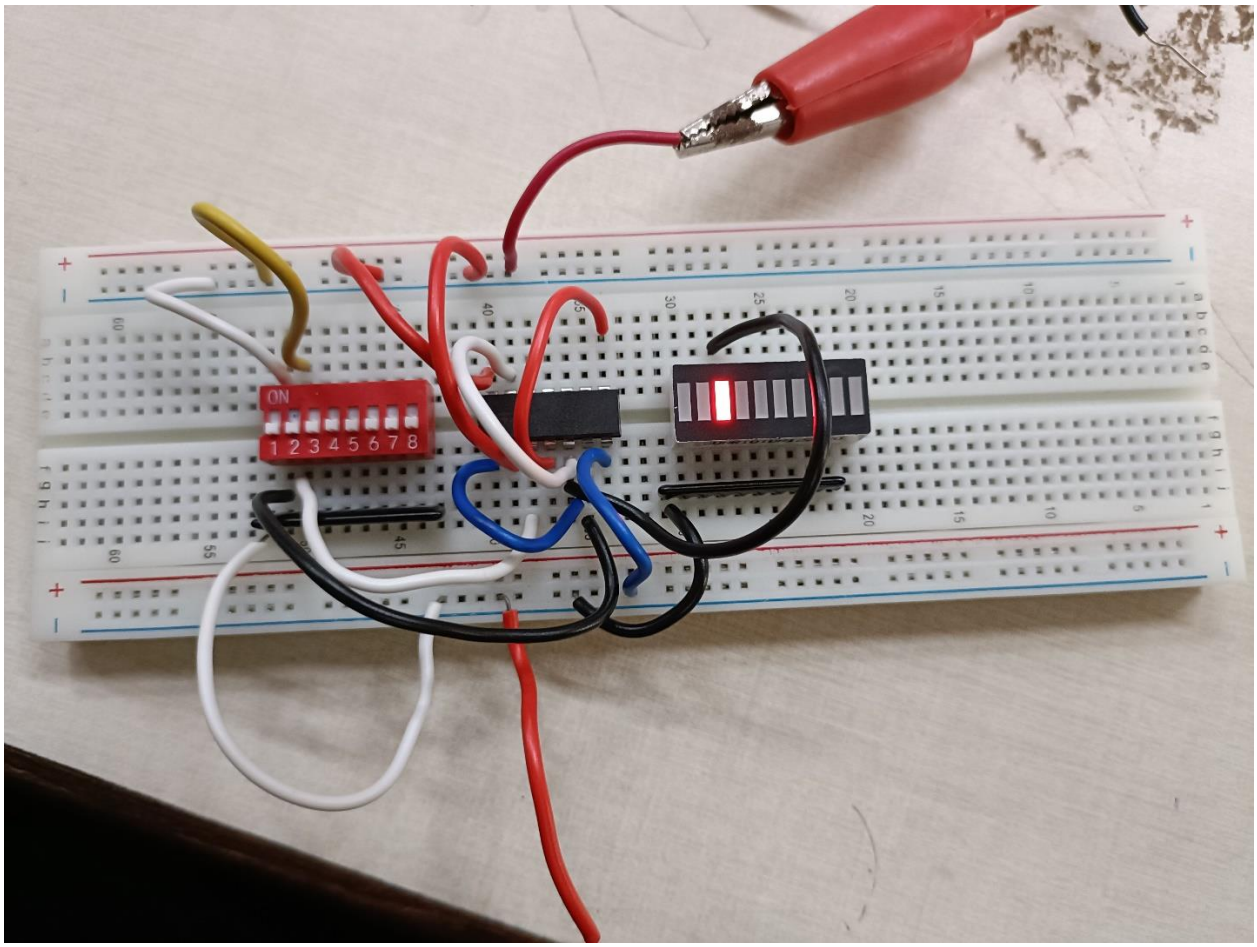


1) NAND GATE (Snapshots) :
   TRUTH TABLE & CIRCUIT :

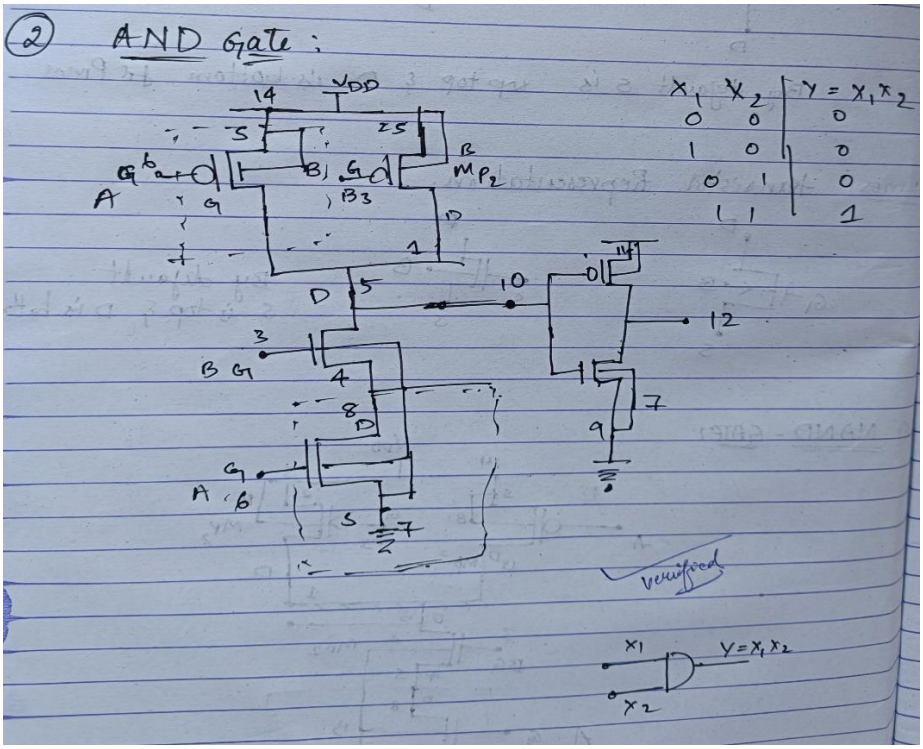


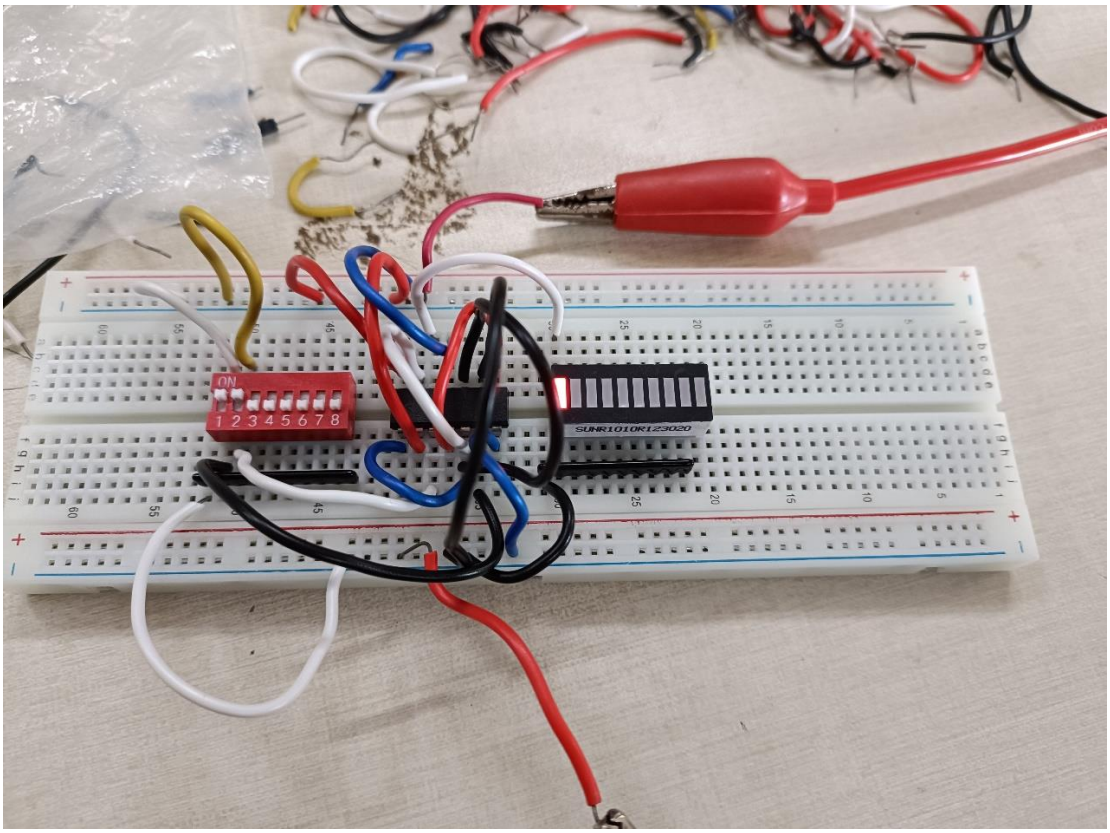

(1) NAND - GATE:
V_{DD}
14
S
2
B
A
MP_2
B_3
MP_1
D
1
5
3
BG
MN_2
4
8
MN_1
G
6
7

2- NAND.

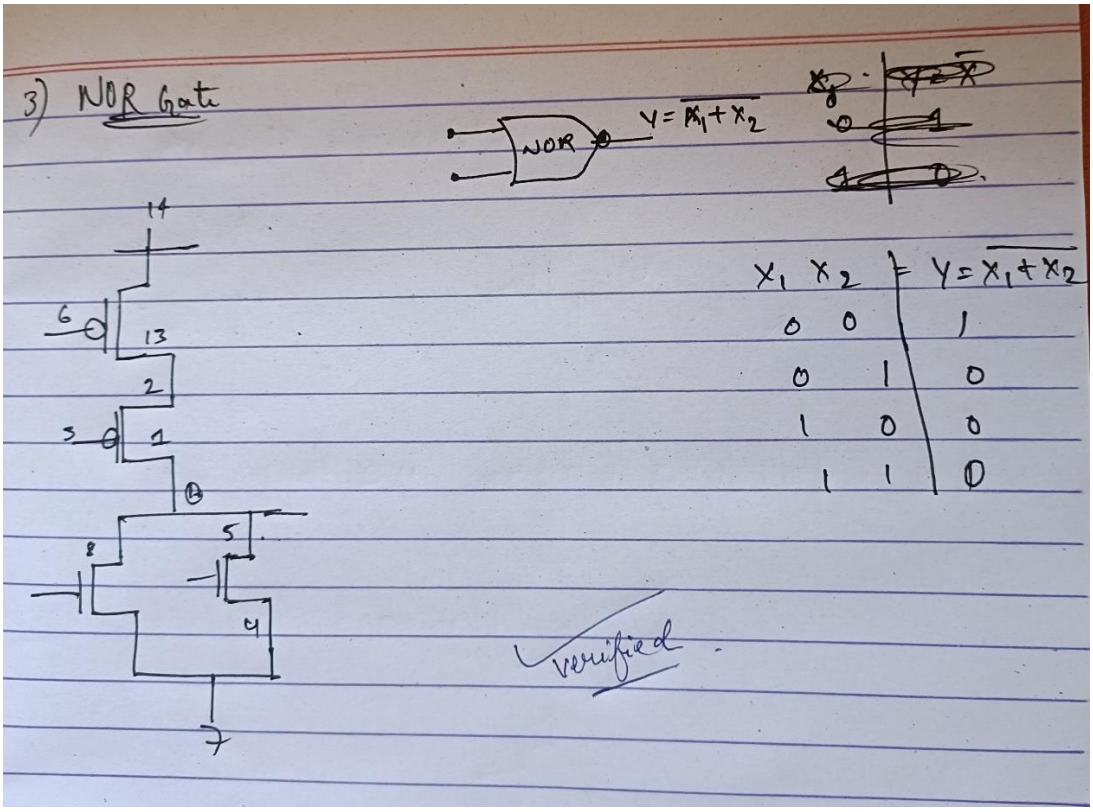

ON
1 2 3 4 5 6 7 8

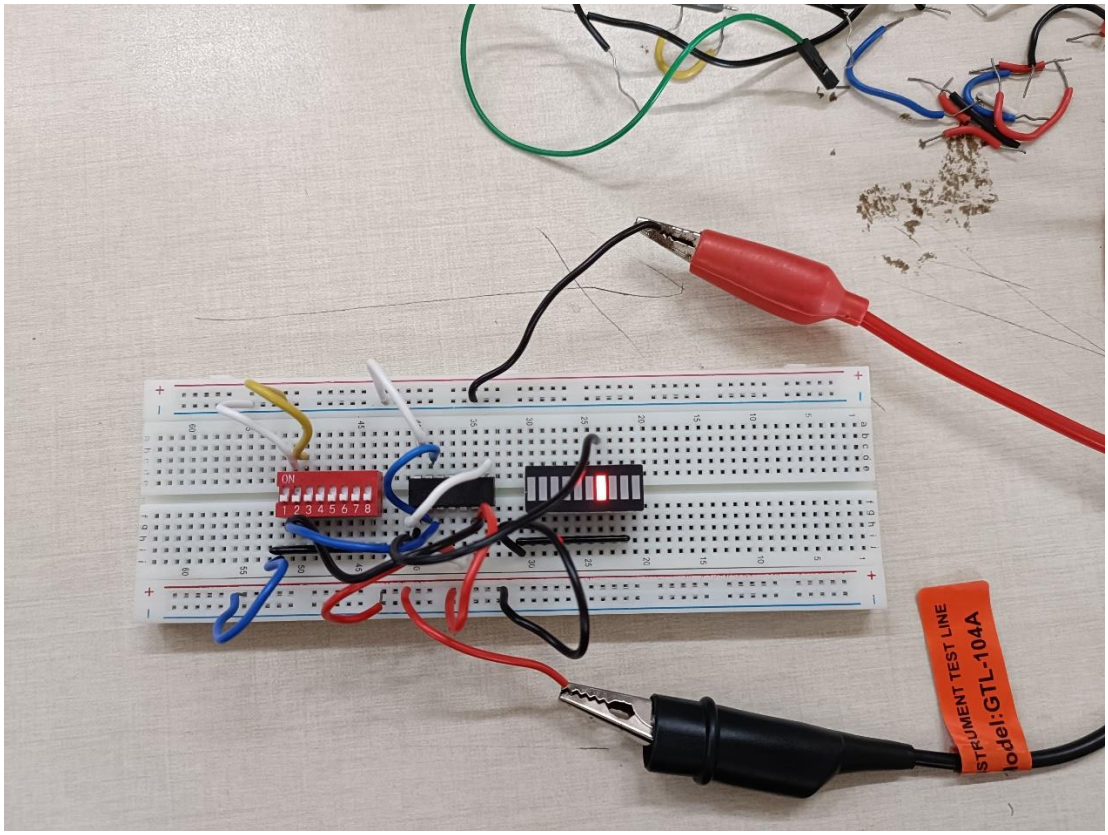
2)AND GATE (Snapshots & Circuit):



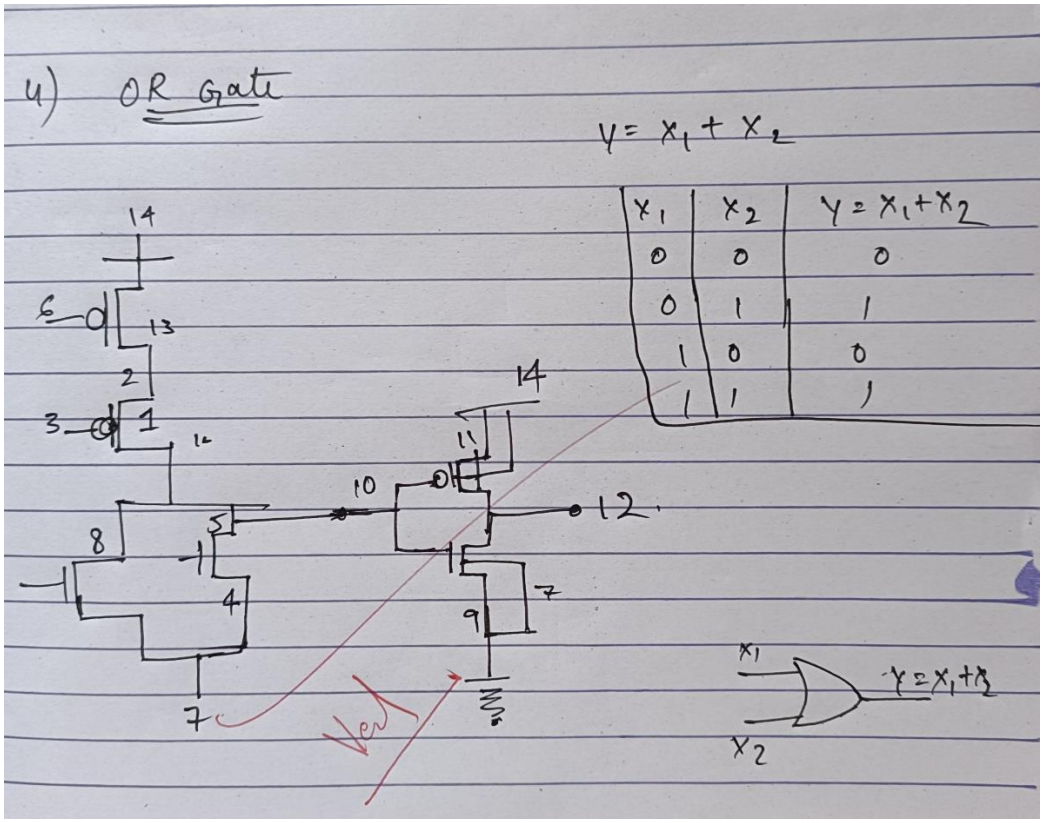


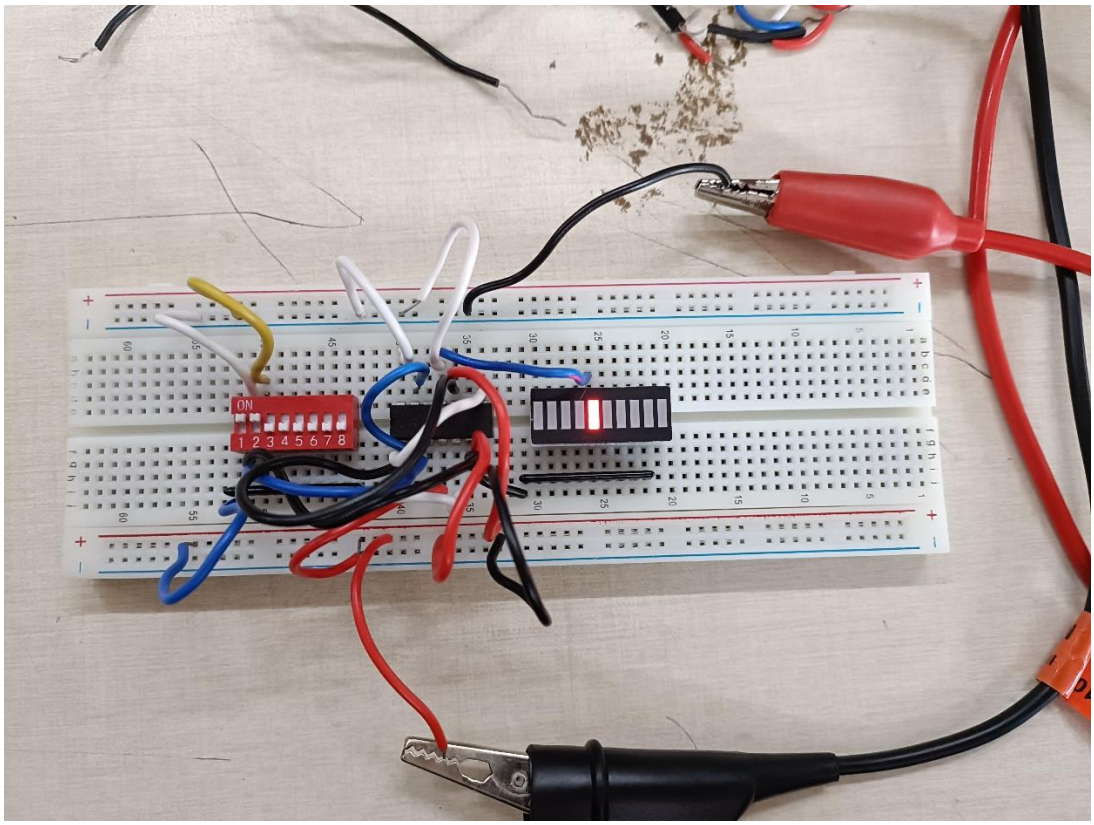
3)NOR GATE (Snapshot & Circuit):





4)OR GATE (Snapshot & circuit) :





RESULTS :

Using this HCC4007UB IC which having 2 chanels of PMOS & NMOS we connected them in a circuit which results to form a CMOS and through that we form the different logic gates such as

NAND Gate
AND Gate
NOR Gate
OR Gate .

CONCLUSION :

Through this different IC's called HCC4007UB & HCF400UB which are acting as CMOS and forms some basic gates which finally gives a conclusion that we can connect any logic gate circuits using these PMOS & NMOS as ONE CMOS .