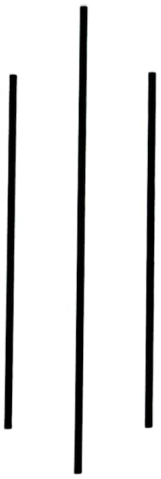
TRIBHUVAN UNIVERSITY

PATAN MULTIPLE CAMPUS

PATAN DHOKA, LALITPUR



DIGITAL LOGIC (BIT 103)

LAB ..7..

SUBMITTED BY

NAME: Suresh Dahal

CLASS: ..BEI.. I-I

ROLL NO: 23

DATE: 2080/12/16

SUBMITTED TO

JYOTI PRAKASH CHAUDHARY

.....

CHECKED BY

TITLE:- DESIGN SEVEN SEGMENT DISPLAY CIRCUIT TO DISPLAY THE DECIMAL NUMBERS 1, 7 AND 3.

a.) OBJECTIVE :-

→ To design seven segment display circuit to display the decimal numbers 1, 7 and 3

b.) REQUIREMENTS :-

i) Digital logic kit and simulator
ii) Logic gates and connecting wires
iii) Interactive / sequence generator as input
iv) 7 segment display as output
~~v) LED~~

c.) THEORY:-

Seven segment display consists of 7 segments a,b,c,d,e,f,g to display numbers or characters. BCD input is given to the BCD to 7 segment decoder which gives (7) seven outputs.

TRUTH TABLE

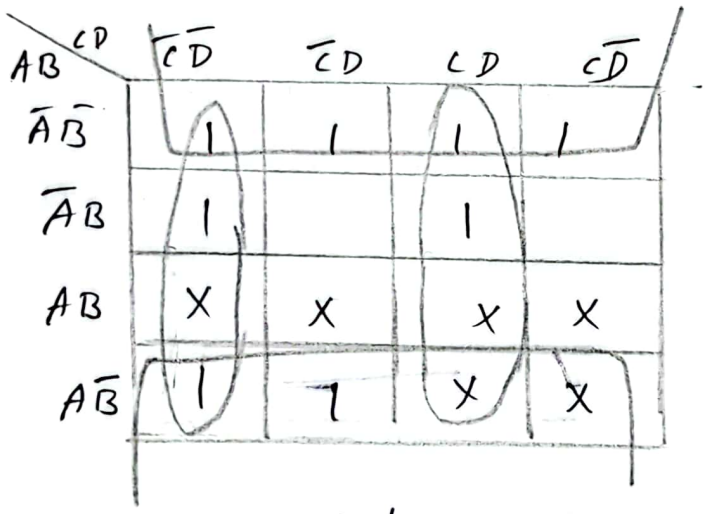
Inputs				outputs						
A	B	C	D	a	b	c	d	e	f	g
0	0	0	0	1	1	1	1	1	1	0
0	0	0	1	0	1	1	0	0	0	0
0	0	1	0	1	1	0	1	1	0	1
0	0	1	1	1	1	1	1	0	0	1
0	1	0	0	0	1	1	0	0	0	1
0	1	0	1	1	0	1	1	0	1	1
0	1	1	0	1	0	1	1	1	1	1
0	1	1	1	1	1	1	0	0	0	0
1	0	0	0	1	1	1	1	1	1	1
1	0	0	1	1	1	1	1	0	1	1

LOGIC EXPRESSION

FOR a

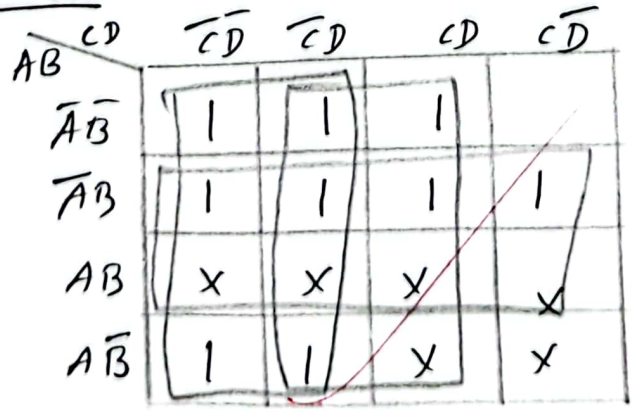
$a = A + c + B'D' + BD$

For b



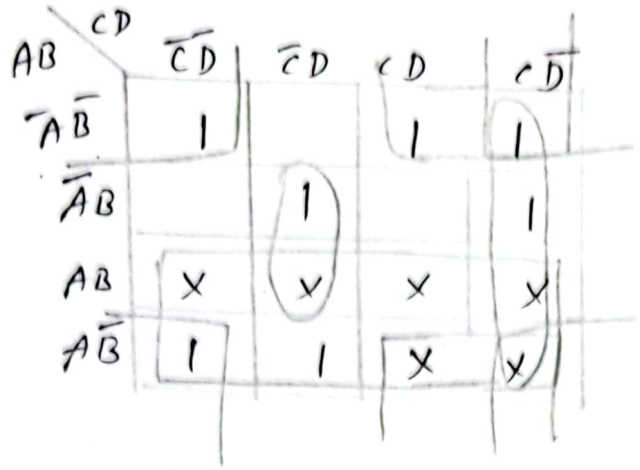
$b = B' + CD + c'D'$

For c



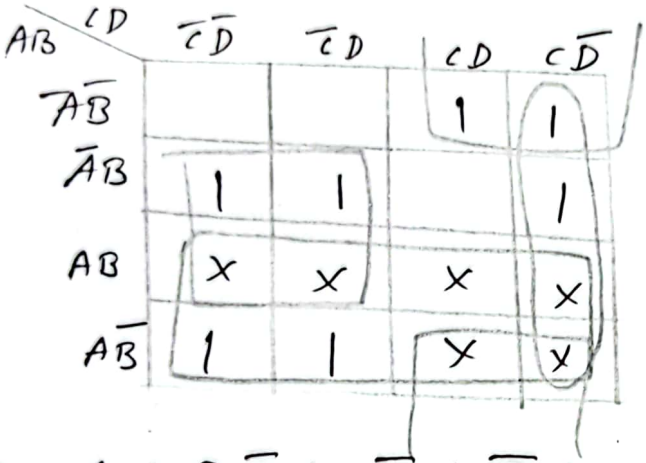
$c = C' + D + B$

For d



$$d = B'D' + A + \bar{B}CD + BC'D + CD'$$

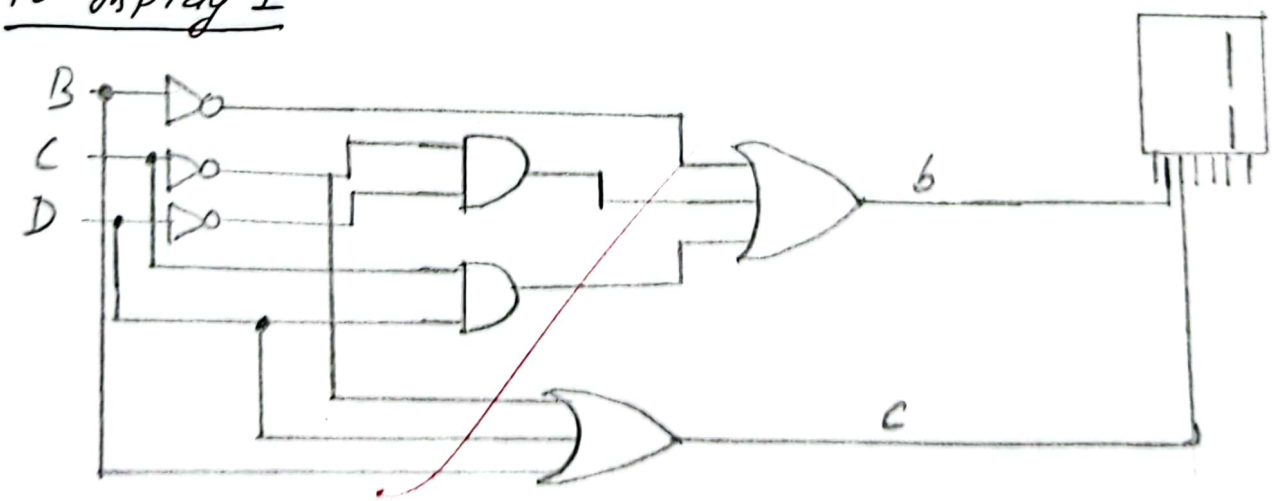
For g



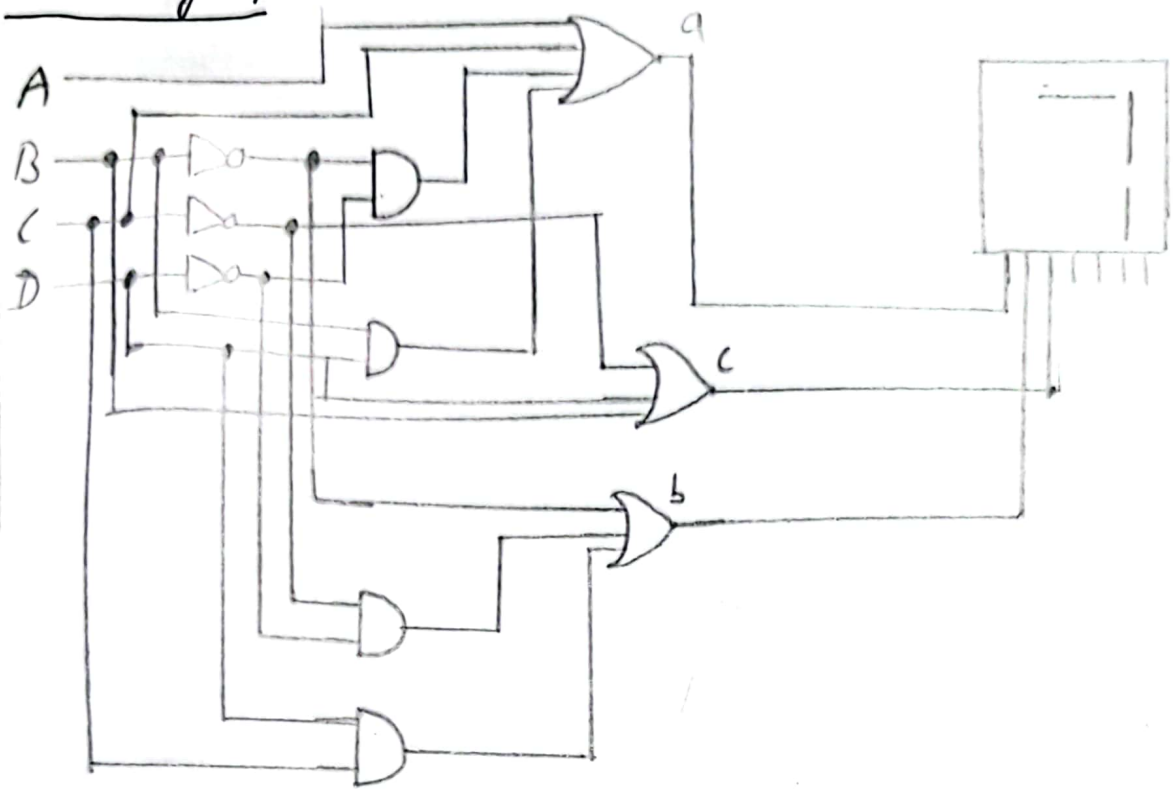
$$g = A + B\bar{C} + C\bar{D} + \bar{B}C$$

LOGIC CIRCUITS

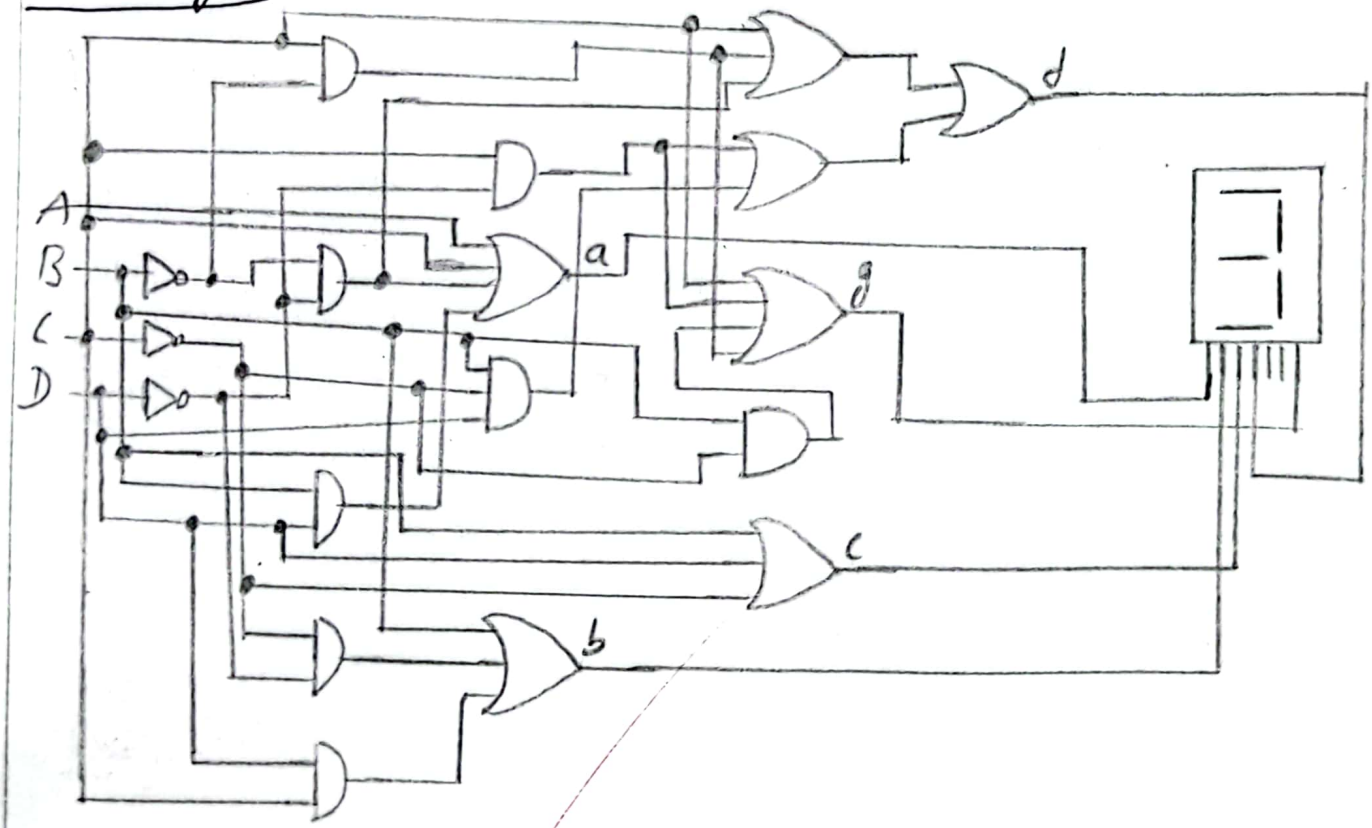
To display 1



To display 7



To display 3



d) CONCLUSION :-

In this lab we have designed the seven segment display using different gates to display the numbers 1, 3 and 7.