FC0319 ·	Digital	Electronics
LUUSIS.	Digital	Licetionics

Date:\_\_\_\_\_

#### PRACTICAL-2

AIM: To Verify Demorgan's theorem using Truth Table and Logic Diagram

- · To verify Demorgan's theorem using touth table and logic diagram:
- is Boolean Expression:

as. First Law:

A.B = A + B

b). Second Law:

A+B = A . B

iis. Touth Table :-

as. First Law:

The state of							
	IA	B	A.B	A.B	A	B	$\bar{A} + \bar{B}$
	0	0	0	1	1	1	1
	0	. 1	0	1	1	0	
	1	0	0	1	0		1
	1	1	- 1	0	0	0	0
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b. Second Law:

A	В	A+B	A+B	Ā	B	Ā.B
0	0	0	1	1	1	1
0	1	1	0	1	0	0
1	0	1	0	0		0
1	1	1	0	0	0	0

### iii). Logic Circuit Diagram :-

- a. First Law Logic Circuit:

  - · Left: AND gate followed by a NOT gate for A.B.
    · Right: Two NOT gate followed by an OR gate for A+B.

# b). Second Law Logic Circuit:

· Left: OR gate followed by a NOT gate for AtB.
· Right: Two NOT gates followed by an ANO gate for AtB.

## a). First Low Logic Circuit:

### b). Second Law Logic Circuit:

By compasing the touth table oresults and the outputs from the logic circuits, we verify that both Demorgan's laws hold true.	By co		the the	touth	table circuits	results:	and Verify	the that
	both	Demorga	n's la	acos	hold -	toue.	7	
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