Digital Logic Design Lab Report

Experiment No: 01

Experiment Name: Implementation of

Basic Logic Gates(AND,OR,NOT)

Submitted By:

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(Team-A)

Experiment Name: Implementation of milouignos los Basic Logic Gates to smitheriday or, Not).

· Objective Ingtho only . stugni sti The objective of this experiment is to design and implement basic logic gates CAND, OR, NOT) using digital components and verify their functionality by constructing circuits and analysing their truth table.

Theory - tugtous entres are fundamental building blocks of digital circuits. They penforme basic logic functions that are essential for digital computations. no not noise on que A + A = Y

strio AD.

· AND Gate-The AND gate is a digital logic with 'n' ilps one orp which perform logical conjunction based on the combinations of its inputs. The output of its. gate is true only when all the inputs are true. When one or more inputs are false, then only the output is fulse. The boolean expression for an AND Algertaisis: (night on bus dinorio Y = A.B · eld)s.

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The output of the The only when one or more inputs are true. If iall the inputs are fulse, then the output is fulse. The boolean expression for an OR fute is:

Y = A + B

· NOT Gate - The NOT gate is a digital logic gerte with one input and one output that operators ear inverter operation of the input. The output of the NOT gate is the neverse of input. When the input of the NOT gate is true then the output will be fulse and vice versa. The boolean expression for a NOT gede is:

 $Y = \overline{A}$

· Circuit Diagram -AND gate-

Figure-01: AND Gate

OR gate - TON SAT TON Judice Judice Judice Judice Confinite Chart of Confinite TON SAL TO Fuglis STA + Barri . Ingrifigure-02:00R Gates; stof LAYER THE infourt of the NOT, late NOTTO Gate TO SILL OTTONE tillse and vice vosa. The beclean expression for a NCT yeale is: Input A > Y Ouput Maria Hyprain . AND Rate-

Figure - 03: NOT Gate

· Truth table -

AND Gate:

A	B	A.B
0	0	0
0	1	0
1	0	0
1	1	1

OR Gate:

A	B	A+B
0	0	0
0	1	1
1	0	1
1	1	1

NOT hate:

A	Ā
0	1
1	0

· Discussion - The experiment verified the working principles of AND, OR and NOT gate. When me and group members work to do for this experiment we didn't face any critical problem. We understood the experiment easily.

Exp No-01

Exp Name - Implementation of Basic Logic Code Rate (AND, OR, NOT)

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A	B	A.B
0	0	50
0.	. 1	0
1	0	0
	1	1

A.	B		Hilmold	A
0	0	0		0
0	1	1] \	
1	0	1		
,	11	l_	1	

A	Ā
0	1
1	10

earl suitediretail is

1) or x (1+2) = (xxy) + (xxx)

(Styl) * (Ktyl) = (SXK) + (N+2)

3 = Pxx - = m = 10 x = 1