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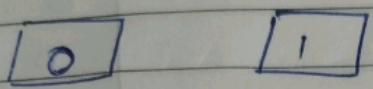
DAY-4 TASK

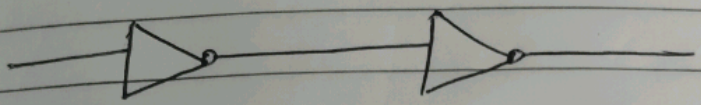
Qubits

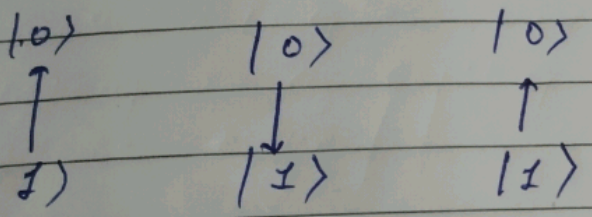
Classical Bits



a unit of information either a 0 or a 1 is called Bit

Not Gate:-

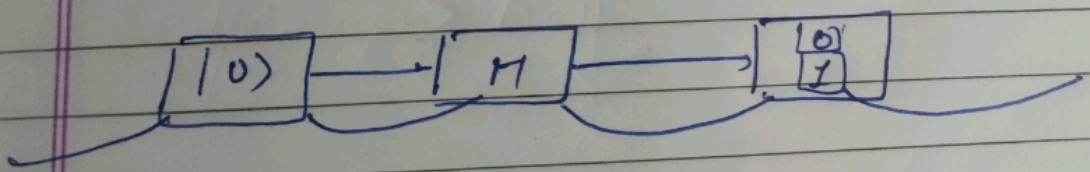




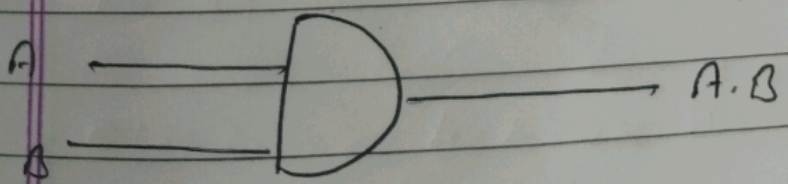
True Table

input	output
0	1
1	0

Hadamard Gate.



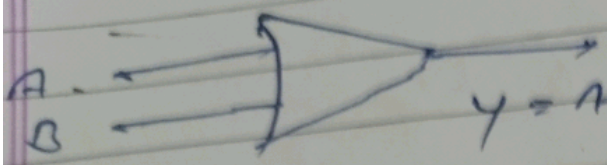
AND Gate.



True Table

A	B	output
0	0	0
0	1	0
1	0	0
1	1	1

OR GATE :-



A	B	Y = A+B
0	0	0
0	1	1
1	0	1
1	1	1

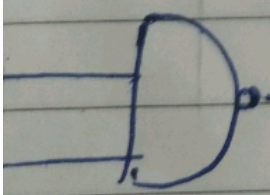
output is high if input is 1.

NOT GATE :-

A	Y = $\bar{A}$
0	1
1	0

NAND Gate :-

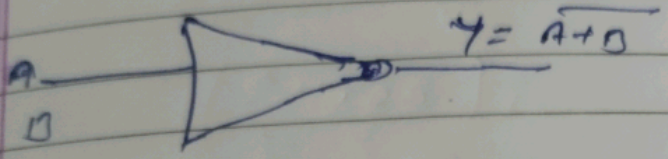
AND + NOT



A	B	Y = $\overline{AB}$
0	0	1
0	1	1
1	0	1
1	1	0

output of NAND Gate will be low only if all the input is high otherwise output is high.

NOR GATE:-
OR + NOT Gate.

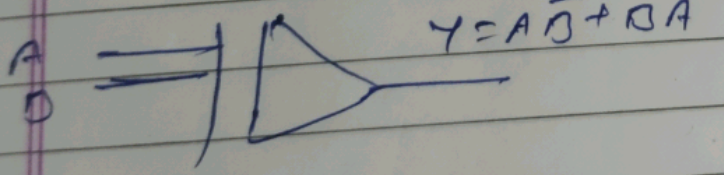


A	B	$Y = \overline{A+B}$
0	0	1
0	1	0
1	0	0
1	1	0

The output of NOR Gate is high only if all the input is low.

EX-OR GATE:-

$Y = A\bar{B} + B\bar{A}$



A	B	$Y = A\bar{B} + B\bar{A}$
0	0	0
0	1	1
1	0	1
1	1	0

EX-NOR GATE:-

$Y = AB + \bar{A}\bar{B}$

A	B	$Y = AB + \bar{A}\bar{B}$
0	0	1
0	1	0
1	0	0
1	1	1