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Date = 22/03/2022 Course = MCA Sem = I

Section = B Subject = computer Subject = organization

Q1) Discuss the working of NAND gate with the help of circuit diagram truth table

=) The NAND gate is a special type of logic gate in the digital logic circuit the NAND gate is the universal gate it means all the basic gates such as AND, OR OR NOT gate can be constructed using a NAND gate

=) The NAND gate is the combination of the NOT-AND gate

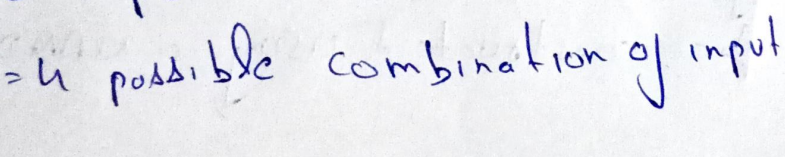
=) the output state of the NAND gate will be low only when all the inputs are high simply this gate return the complement result of the AND gate

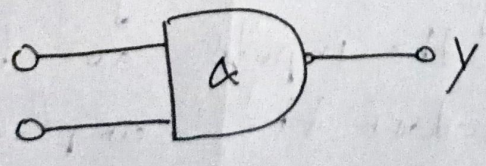
The logic or Boolean Expression for the NAND gate is the complement of logical multiplication of inputs denoted by a full stop or a single dot as $(A.B)' = y$

The value of y will be true when any one of the input is set to 0

Two input NAND Gate:-

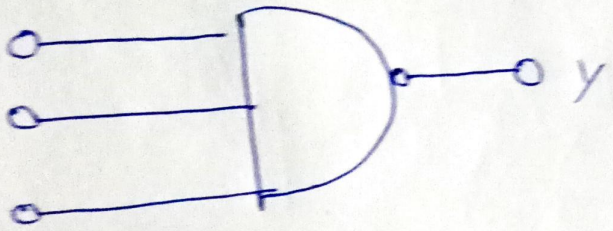
This is the simple formation of the NAND gate In this type of NAND gate, there are only two input values and an output value Therefore $2^2 = 4$ possible combination of input





Input		Output
A	B	y
0	0	1
0	1	1
1	0	1
1	1	0

Unlike the 2 input NAND gate the 3 Input NAND



Input			Output
A	B	C	Y
0	0	0	1
0	0	1	1
0	1	0	1
0	1	1	1
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	0