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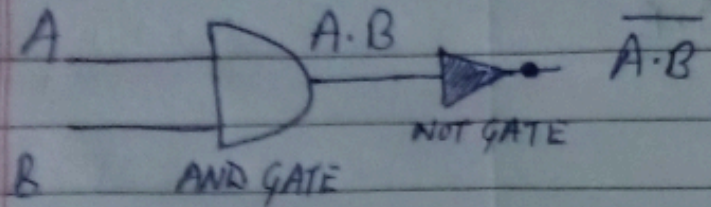
8d Working of NAND Gate -

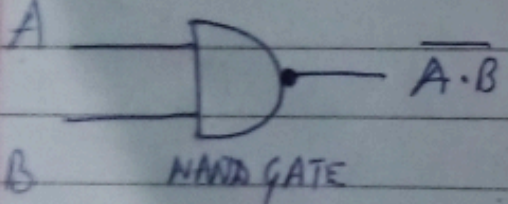
A NAND gate ("not AND gate") is a logic gate that produces a low output (0) only if all its inputs are true, and high output (1) otherwise. Hence the NAND gate is the inverse of an AND gate, and it's circuit is produced by connecting and AND gate to a NOT gate. Just like an AND gate, a NAND gate may have any number of input probes but only one output probe.

The NAND gate performs the logical NAND function. NAND gates are known as universal gates (along with NOR gates (along with NOR gates), which means they are a type of logic gate which can implement any Boolean function without the need to use any other gate type.

The basic logical construction of the NAND gate is shown below (you can see it is an AND gate followed by a NOT gate):



The symbol of a NAND gate is similar to the AND gate, but a bubble is drawn at the output point of the AND gate. The symbol of the NAND gate is shown below.



NAND gate means "not AND gate", hence the output of this gate is just reverse of that of a similar AND gate.

In the NAND, the fact is the opposite, here the output is only logical 0 when the and only when all inputs of the gate are 1s, and in all other cases, the output of the NAND gate is high or 1.

Hence, the truth table of a 2 Input NAND gate can be represented as:

Inputs		Output
A	B	$X = \overline{A \cdot B}$
0	0	1
0	1	1
1	0	1
1	1	0

As we can see that this is just the reverse of the truth table of an AND gate.