

NAME - ROHIT ASWAL RollNo-66 StudentID - 21711220

Subject - Computer Organisation & Architecture

RAswal

## NOR GATE

The NOR gate is also a universal gate. So we can also form all the basic gates using the NOR gate. The NOR gate is the combination of two NOT-OR gate. The output state of a NOR gate will be high only when all of the inputs are low. Simply, this gate returns the complement result of the OR gate.

The logical or Boolean expression for the NOR gate is the complement of logical multiplication of inputs denoted by the plus sign as

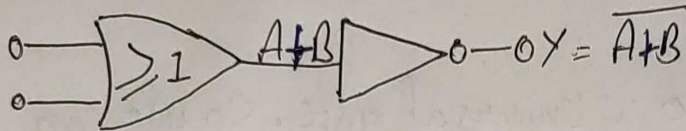
$$(A+B)' = Y$$

The value of  $Y$  will be true when all of its inputs are set to 0.

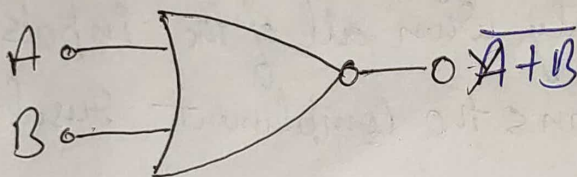
The two types NOR gate.

Just like other gates, it is also a simple form of the NOR gate. In this type of NOR gate, there are

only two input values and an output value, there are  $2^2 = 4$  possible combinations of inputs; the first two logic designs are ~~shown below~~ as



~~2-Input "AND" gate plus a "NOT" gate~~



2-Input NOR gate

TRUTH TABLE

Input		Output
A	B	<del>A+B</del>
0	0	1
0	1	0
1	0	0
1	1	0

The 3-Input NOR gate.

Unlike the 2-input NOR gate, the 3-input NOR gate has three inputs. The Boolean expression of the logic

A NOR gate is also referred to as a universal gate.  
Because all binary realized by only using NOR gates