



# **Dr.SNS RAJALAKSHMI COLLEGE OF ARTS AND SCIENCE**

**(AUTONOMOUS)**

**COIMBATORE-2241049**

**Accredited by NAAC(Cycle III) with “A+” Grade  
Recognised by UGC, Approved by AICTE, New Delhi and  
Affiliated to Bharathiar University, Coimbatore.**



## **DEPARTMENT OF COMPUTER SCIENCE**

### **Computer System Architecture**

**I YEAR - I SEM**

### **Unit II – Digital Logic Circuit**



# Logic Gates



**Logic gates** are the basic building blocks of any digital system. It is an electronic circuit having one or more than one input and only one output.

## Basic logic Gates

AND

OR

XOR

NOT

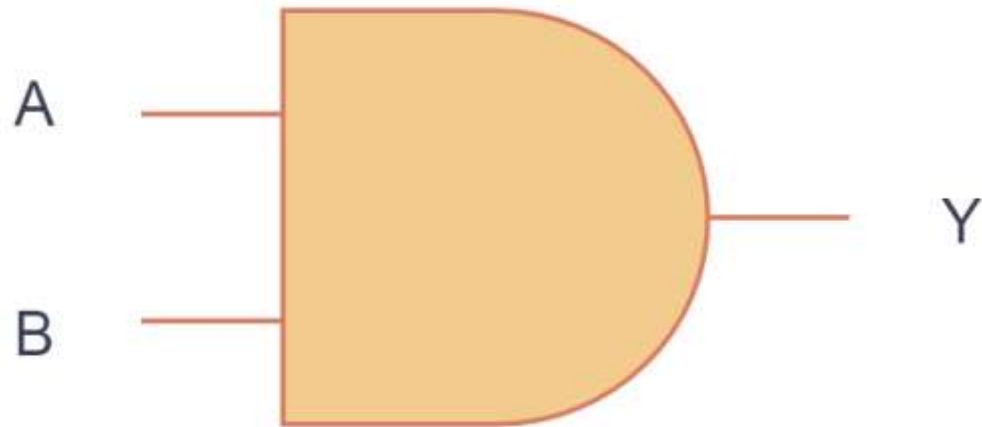
NAND

NOR

XNOR

# OR Gate

## Logic Diagram

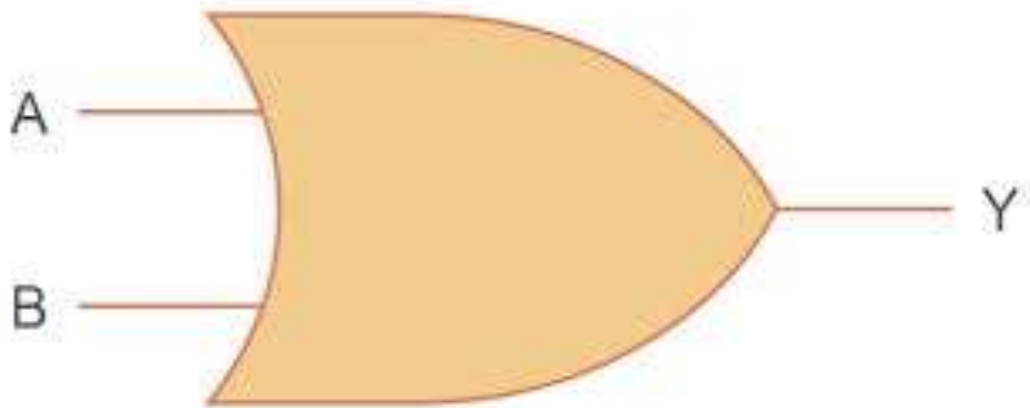


## Truth Table

Inputs		Output
A	B	$Y=A.B$
0	0	0
0	1	0
1	0	0
1	1	1

# OR Gate

## Logic Diagram

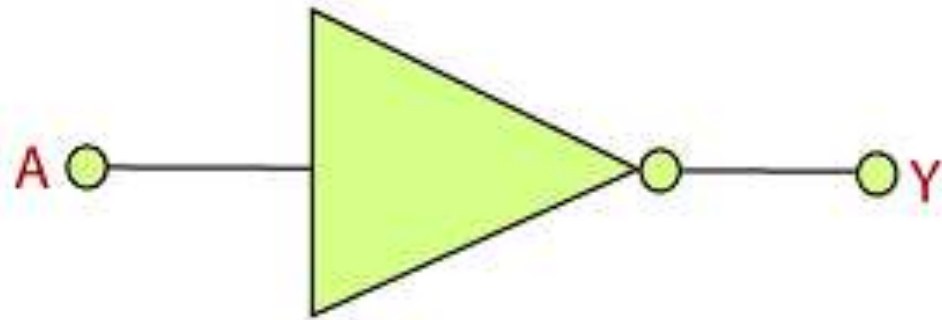


## Truth Table

Inputs		Output
A	B	$Y=A+B$
0	0	0
0	1	1
1	0	1
1	1	1

# NOT Gate

## Logic Diagram

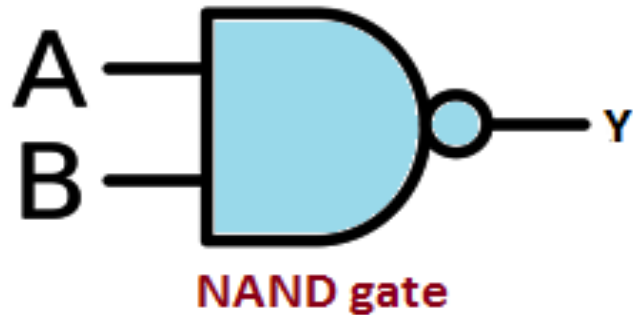
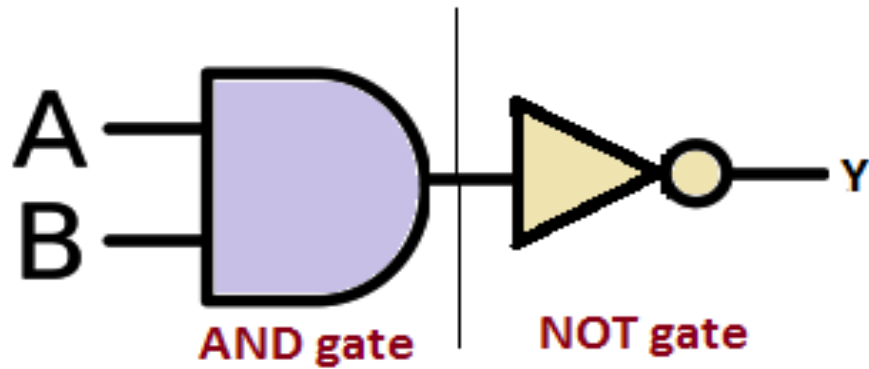


**NOT Gate**

## Truth Table

Inputs	Output
A	$Y = \overline{A}$
0	1
1	0

## Logic Diagram

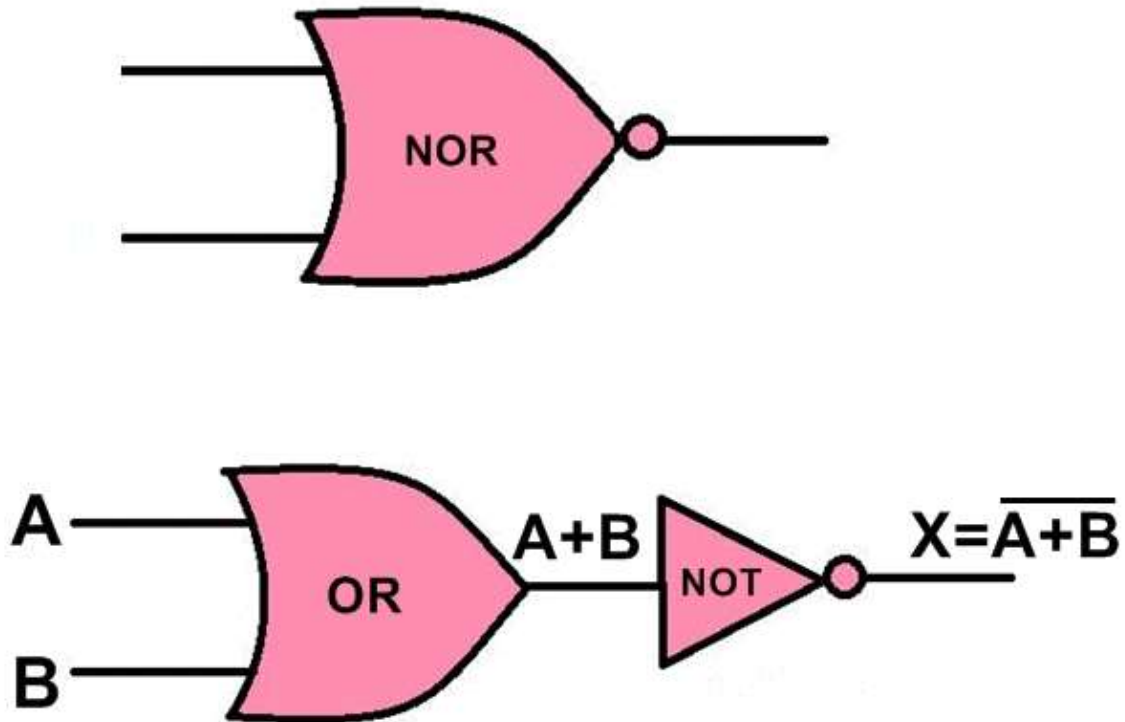


## Truth Table

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

# NOR Gate

## Logic Diagram

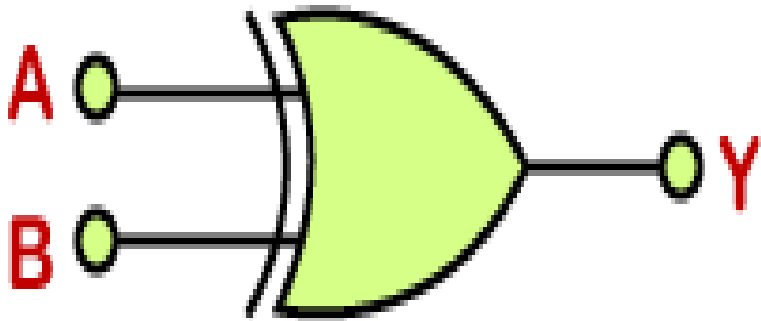


## Truth Table

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

# XOR Gate

## Logic Diagram



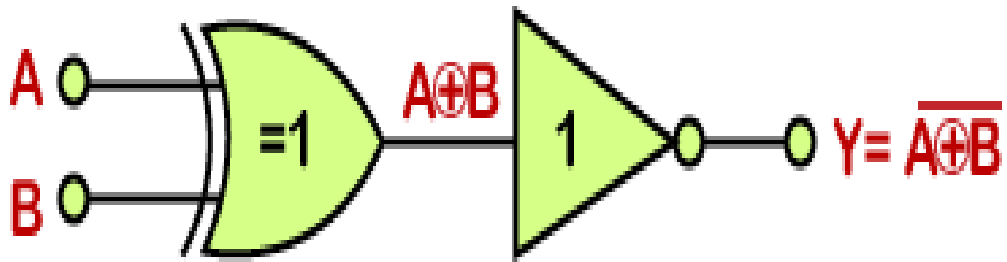
## Truth Table

Inputs		Output
A	B	$Y = A \oplus B$
0	0	0
0	1	1
1	0	1
1	1	0



# XNOR Gate

## Logic Diagram



## Truth Table

Inputs		Output
A	B	$Y = \overline{A \oplus B}$
0	0	1
0	1	0
1	0	0
1	1	1



Thank You