



# **SNS COLLEGE OF ENGINEERING**

Kurumbapalayam (Po), Coimbatore – 641 107

**An Autonomous Institution**

Accredited by NBA – AICTE and Accredited by NAAC – UGC with ‘A’ Grade  
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

## **DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

**COURSE NAME : 19EC306 – Digital Circuits**

**II YEAR / III SEMESTER**

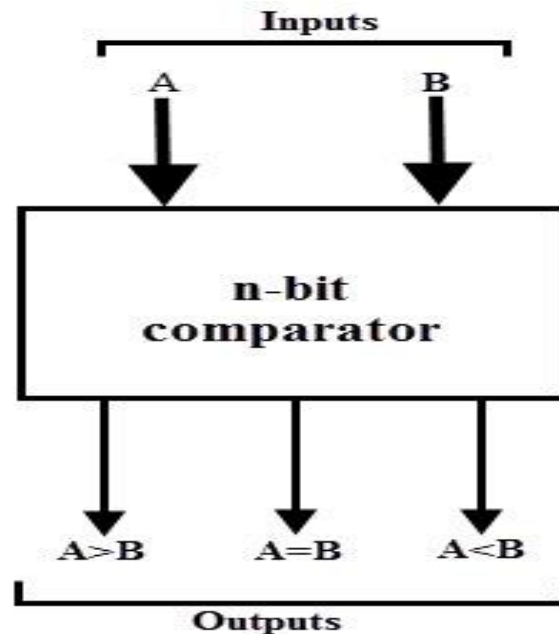
**Unit II- COMBINATIONAL CIRCUITS**

**Topic : Magnitude Comparator**



## Magnitude Comparator

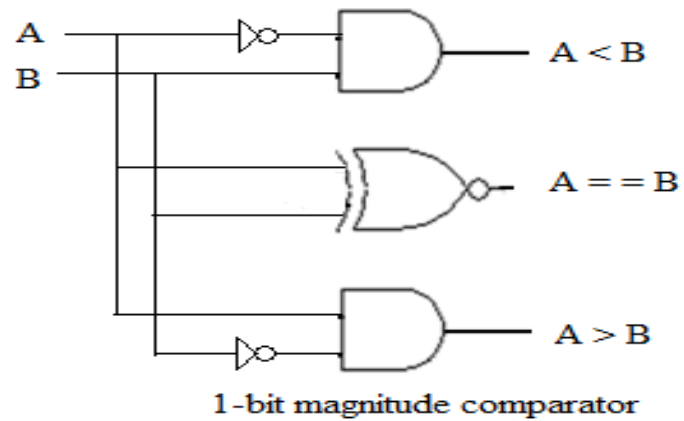
A digital comparator or magnitude comparator is a hardware electronic device that takes two numbers as input in binary form and determines whether one number is greater than, less than or equal to the other number. Comparators are used in central processing units and microcontrollers.

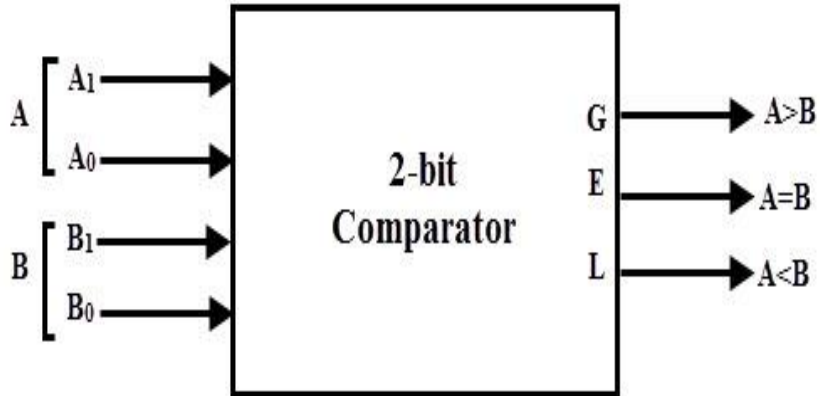


# 1 Bit Magnitude Comparator

INPUT		OUTPUT		
A	B	A<B	A=B	A>B
0	0	0	1	0
0	1	1	0	0
1	0	0	0	1
1	1	0	1	0

## Logical diagram





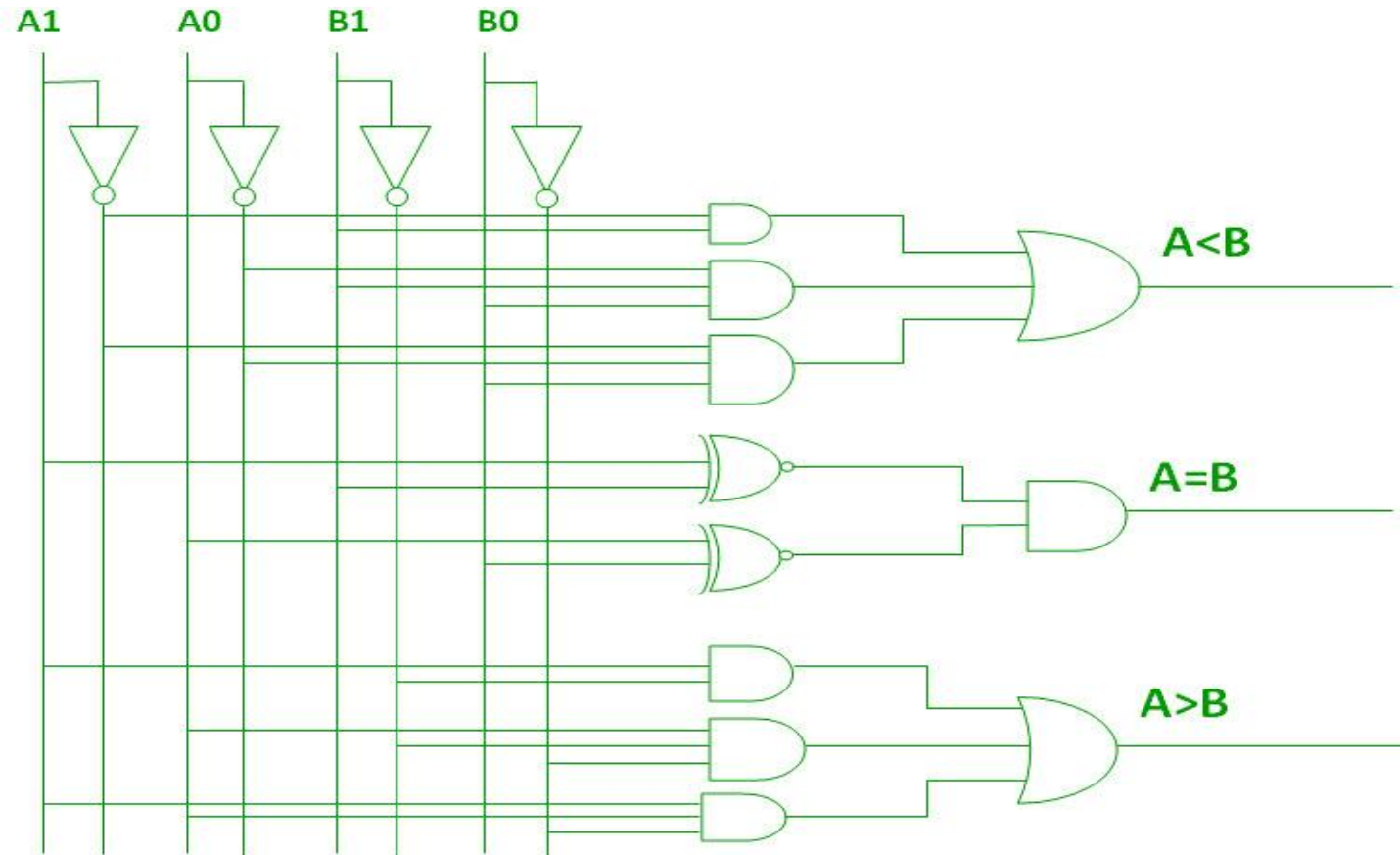
INPUT				OUTPUT		
A1	A0	B1	B0	A < B	A = B	A > B
0	0	0	0	0	1	0
0	0	0	1	1	0	0
0	0	1	0	1	0	0
0	0	1	1	1	0	0
0	1	0	0	0	0	1
0	1	0	1	0	1	0
0	1	1	0	1	0	0
0	1	1	1	1	0	0
1	0	0	0	0	0	1
1	0	0	1	0	0	1
1	0	1	0	0	1	0
1	0	1	1	1	0	0
1	1	0	0	0	0	1
1	1	0	1	0	0	1
1	1	1	0	0	0	1
1	1	1	1	0	0	1
1	1	1	1	0	1	0

Truth table for  $A > B$ :

A1A0	B1B0			
	00	01	11	10
00	0	0	0	0
01	1	0	0	0
11	1	1	0	1
00	1	1	0	0

Truth table for  $A = B$ :

A1A0	B1B0			
	00	01	11	10
00	1	0	0	0
01	0	1	0	0
11	0	0	1	0
00	0	0	0	1





Any Query?????

Thank you.....