

## LAB NO 7

### Title: “ Implement magnitude comparator using 7485-IC”

#### 1. Objective

The objective for implementing a Magnitude Comparator using the 7485 IC (integrated circuit) is to design a compact and efficient electronic circuit that can compare two binary numbers and determine their relative magnitudes. This circuit will produce an output that indicates whether one number is greater than, less than, or equal to the other number. The goal is to create a reliable and low-power solution for binary number comparison in digital systems or applications where such comparisons are required, such as in arithmetic operations or control logic.

#### 2. Equipments

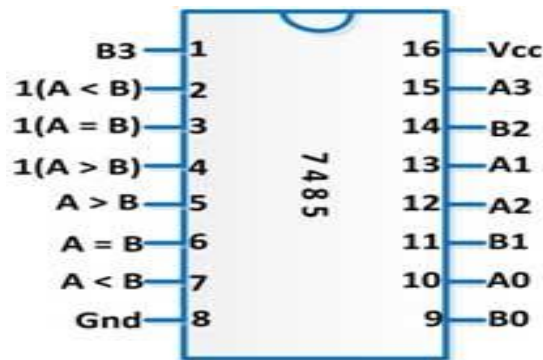
- 7485 IC (4-bit Magnitude Comparator)
- Power supply (to provide the necessary voltage to the IC.)
- LEDs (Light Emitting Diodes) and current-limiting resistors (if you want visual indicators)
- Breadboard or PCB (Printed Circuit Board) for building the circuit
- Connecting wires and connectors

#### 3. Truth Table

A1	A2	A3	A4		B1	B2	B3	B4		A<B	A=B	A>B
0	0	0	1		0	0	1	1		1	0	0
0	0	0	0		0	0	1	0		1	0	0
0	0	1	1		0	0	0	1		0	0	1
0	0	1	0		0	0	0	0		0	0	1
0	1	0	1		1	0	0	0		1	0	0
0	1	0	0		0	1	1	1		1	0	0
0	1	1	1		0	1	1	0		0	0	0
0	1	1	0		0	1	0	1		0	1	0
1	0	0	1		0	1	0	0		0	0	1
1	0	0	0		0	1	0	0		0	1	0
1	0	1	1		1	0	1	1		0	1	0
1	0	1	0		1	0	1	0		0	1	0

1	1	0	1		1	0	0	1		0	0	1
1	1	0	0		1	1	1	1		1	0	0
1	1	1	1		1	1	1	0		0	0	1
1	1	1	0		1	1	0	1		0	1	0

#### 4. Pin Configuration



#### 5. Conclusion

Implementing a magnitude comparator using the 7485 IC is a practical and efficient way to perform numerical comparisons in digital circuits. The 7485 IC, a 4-bit magnitude comparator, simplifies the task of comparing binary numbers by providing a straightforward means of determining their relative magnitudes. By connecting the appropriate inputs and understanding its behavior, you can easily create a functional magnitude comparator.

In conclusion, using the 7485 IC for a magnitude comparator design offers a compact and reliable solution for comparing binary numbers. By correctly configuring the inputs and understanding its operation, you can efficiently integrate this IC into your digital circuits to facilitate tasks like equalities, inequalities, and various arithmetic operations, making it a valuable component for digital systems and applications.