EXPERIMENT NO:-7

- **AIM:** To design and test Magnitude comparator.
- **APPARATUS:** Magnitude comparator Trainer, jumpers IC's.

- **THEORY:**

The 1 bit magnitude comparator is a combinational circuit that compares magnitude of two 4 bit numbers to make either of its O/P (A>B, A=B, A<B) at logic high level.
Let A=A0 & B= B0 are 1-bit number respectively. The 1-bit magnitude comparator compares magnitudes as per following expressions for outputs.
Let xi will be at logic high level when Ai & Bi are at equal level. (i= 0, 1)

BLOCK DIAGRAM OF 1-BIT MAGNITUDE COMPARATOR:

CIRCUIT DIAGRAM OF 1-BIT MAGNITUDE COMPARATOR**:**

TRUTH TABLE

- BLOCK DIAGRAM OF 2-BIT MAGNITUDE COMPARATOR:
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- CIRCUIT DIAGRAM OF 2-BIT MAGNITUDE COMPARATOR**:**
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- TRUTH TABLE
- **PROCEDURE:**

1. Connect VCC pin to +5V supply.
2. Connect output signals A>B, A<B and A=B to output LED indicators.
3. Apply any digital input at A-inputs by high/low data switches.
4. Apply any digital input at B-inputs by high/low data switches.
5. Observe output at O/P LED indicators.
6. Repeat above procedure for different A & B inputs & observe the outputs

- **CONCLUSION:**