

## LAB EXPERIMENT - 11

### N- Input Dynamic NAND gate

**11.1 Objective:** To study and design the two input dynamic NAND gate using LTSPICE/HSPICE and verify the simulation result.

**11.2 Software required:** LTSPICE/HSPICE

#### 11.3 Pre-lab Questions

1. Differentiate static and dynamic CMOS logic.
2. Explain NORA CMOS logic.

#### 11.4 Circuit Diagram :

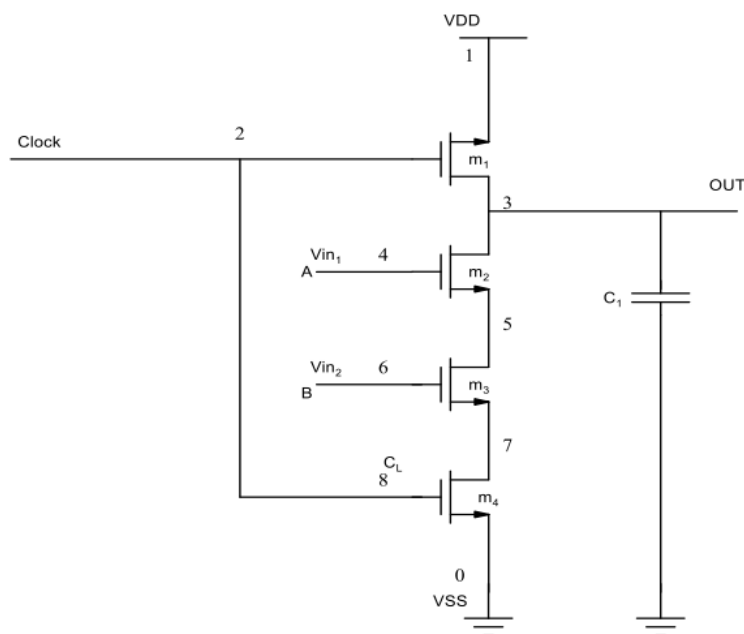


Figure 11.1 Two input dynamic NAND gate

#### 11.5 Program:

#### 11.6 Output:

#### 11.7 Post Lab Questions:

1. Realize the n-type dynamic NOR gate using the LTSPICE/HSPICE.

#### 11.8 Result:

Thus the design of two input dynamic NAND gate, MOS transistor level using LTSPICE/HSPICE was studied and simulated.