**ECE 329**

**Digital Circuit Design II + Lab.**

**Fall 2018/2019**

**LAB # 10**

**10.12.2018**

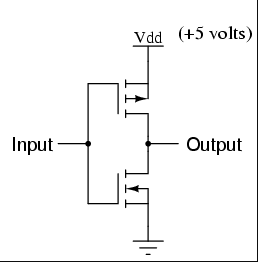
**Objective:**

To learn about Complementary Metal Oxide Semiconductor (CMOS) Logic.

1. **Understanding the CMOS Logic**
2. **Designing fundamental logic gates on Orcad.**
3. **Design the following task on ORCAD by CMOS Logic.**

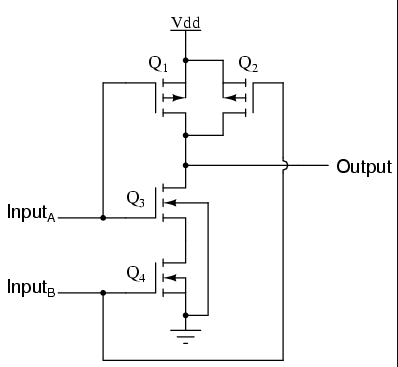
**Tasks:**

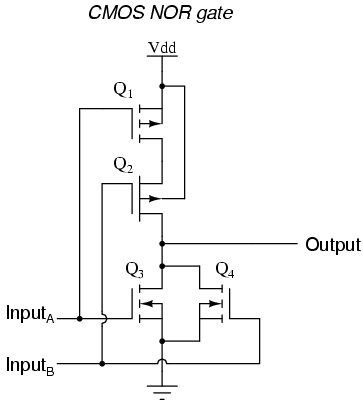
1. Design an inverter by using one n-channel and one p-channel CMOS and simulate.

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n-channel

p-channel

1. ****Design a NAND gate and simulate.
2. Design a NOR gate and simulate.

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1. Extend your NAND gate to AND gate and simulate.
2. Extend your NOR gate to OR gate and simulate

CMOS LG designs are taken from https://www.allaboutcircuits.com/textbook/digital/chpt-3/cmos-gate-circuitry/