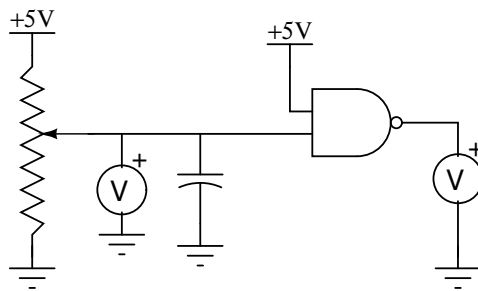# Digital Laboratory - IV

Input and Output characteristics of LSTTL gates
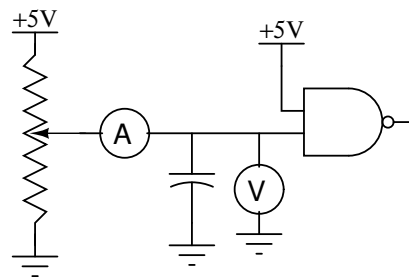
Objectives

1. To get familiar with data sheets of TTL logic gates

2. To understand various static logic gate characteristics: typical output high and low voltages, noise margins, input and output current levels and fanout.

Experiment

1. Using circuit (1), measure the output voltage while changing the magnitude of the input voltage slowly.

2. Using circuit (2), measure the input current as a function of the input voltage.
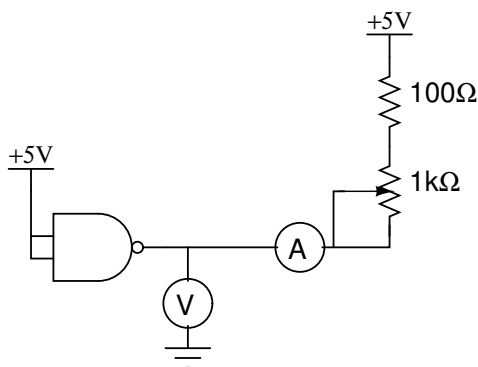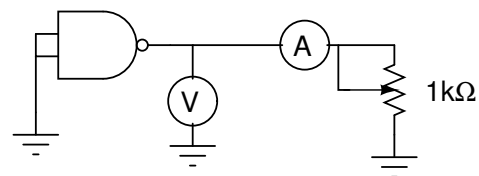

(1)   (2)

3. Using circuit (3), measure the output current as a function of the output voltage when both the inputs of the NAND gate are in logic-1 state.

4. Using circuit (4), measure the output current as a function of the output voltage, when both the inputs are in logic 0 state.

(3)   (4)

From these experiments, find the typical high and low voltage, noise margin and the fan-out of the TTL NAND gate.