

# EE 231, Fall 2006

## Prelab 1

### Prelab for Part 1.

From the [data sheet for the 74HC00](#), look up the following:

- How many gates does it have ? \_\_\_\_\_
- How many inputs does each gate have ? \_\_\_\_\_
- If A and B are the inputs, and Y is the output, what is the Boolean expression for Y?  
Y = \_\_\_\_\_

By looking at the DC characteristics of the gates:

- Define the parameter  $V_{IH}$  \_\_\_\_\_
- Define the parameter  $V_{IL}$  \_\_\_\_\_
- If  $V_{CC} = 4.5 \text{ V}$ , what is the expected value of  $V_{IH}$  ? \_\_\_\_\_
- If  $V_{CC} = 4.5 \text{ V}$ , what is the expected value of  $V_{IL}$  ? \_\_\_\_\_

Complete the truth table for a NAND gate with inputs A,B and output Y:

<i>A</i>	<i>B</i>	<i>Y</i>
0	0	
0	1	
1	0	
1	1	