Lab 3 – Logic Gates

Names: ­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, ­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The purpose of this lab is to:

Learn how to test AND and OR logic gates.

Select two 10kohm resistors.

Measure and record the resistance of each resistor.

Equipment needed:

1 – Digital Multimeter

2 – 10Kohm

1 – 4 position dip switch

1 – 74LS08

1 – 74LS08

Using Multisim simulate Figure 1 for each voltage level and record in Table 1. Then build, test and measure each voltage level and record in Table 1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Simulated | | Test | |
|  | Open | Closed | Open | Closed |
| S1 |  |  |  |  |
| S2 |  |  |  |  |

Table 1 (Simulation vs Test)



Figure 1- Lab 3 Schematic

Using Multisim simulate Figure 2 for each voltage level and record in Table 2. Then build, test and measure each voltage level and record in Table 2



|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Simulated | | Test | |
|  | Open | Closed | Open | Closed |
| S1 |  |  |  |  |
| S2 |  |  |  |  |

Table 2 (Simulation vs Test)

Figure 2 - Lab 3 Schematic

Observations:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_