**ECE101-1L – BASIC ELECTRONICS**

**Activity #1b: Diode Test and Familiarization**

Part A. Multisim

1. Open Multisim
2. Place a component in your workspace
3. Workspace should be like this:
4. Probe/Connect the Red Terminal (HI) (V Ω Diode) Symbol to the Anode terminal of the Diode (1N4001) and the Black Terminal (LO) (Below the Red you used) to the Cathode Terminal of the Diode.
   1. Screenshot your Connection
5. Turn on the Agilent Power on and Press Shift->Cont. This will activate the Multimeter function to Diode Test Function. Your LCD display should look like this
6. Run the Simulation (F5) or click the Green Play Button
   1. Screenshot the Voltage Reading
   2. What Conduction state does the meter reading indicate? (Forward Bias or Reverse Bias)
7. Swap the Red and Black Terminals by connecting the Red Terminal to the Cathode and the Black terminal to the Anode of the Diode. Run the Simulation
   1. Screenshot the diagram
   2. Screenshot the Voltage Reading
   3. What Conduction state does the meter reading indicate? (Forward Bias or Reverse Bias)
8. Create the Schematic diagram shown below
9. Measure the Voltage across R1 and R2, Screenshot the Voltage Reading across
   1. R1
   2. R2
   3. Identify Which diode is forward biased?
   4. Identify Which diode is reverse biased?
10. Flip the Voltage Supply similar to the schematic diagram below
11. Measure the Voltage across R1 and R2, Screenshot the Voltage Reading across
    1. R1
    2. R2
    3. Identify Which diode is forward biased?
    4. Identify Which diode is reverse biased?

Part B. TInkerCAD

1. Open TinkerCAD and Create a New Circuit
2. Place a Breadboard, Diode and Multimeter
3. Identify which is the Cathode and Anode of the Diode
4. Connect the Red Terminal to the Anode and the Black terminal to the Cathode of the diode
5. Run the simulation (make sure the Multimeter is in ® or Resistance Function
   1. Screenshot the schematic
   2. Screenshot the Multimeter Readings
   3. Base on the reading of multimeter is the diode forward or reverse biased?
6. Connect the Black Terminal to the Anode and the Red terminal to the Cathode of the diode
7. Run the simulation (make sure the Multimeter is in ® or Resistance Function
   1. Screenshot the schematic
   2. Screenshot the Multimeter Readings
   3. Base on the reading of multimeter is the diode forward or reverse biased?
8. Using TinkerCAD Create the Schematic diagram shown below
9. Measure the Voltage across R1 and R2, Screenshot the Voltage Reading across
   1. R1
   2. R2
   3. Identify Which diode is forward biased?
   4. Identify Which diode is reverse biased?
10. Flip the Voltage Supply similar to the schematic diagram below
11. Measure the Voltage across R1 and R2, Screenshot the Voltage Reading across
    1. R1
    2. R2
    3. Identify Which diode is forward biased?
    4. Identify Which diode is reverse biased?