



# North East University Bangladesh

Department of Computer Science and Engineering

## Lab Report

**Experiment Name:** Diode Circuit Analysis

**Experiment No:** 02

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## Objective

The objective of this experiment is to analyse simple diode circuits and to build logic circuits using diodes and resistors.

## Theory

Theory needed for this lab should be read from lecture 3 of theory course.

## Apparatus Needed

- Trainer Board (Bread board)
- Diodes
- Resistor
- DC Voltmeter
- DC Ammeter
- DC power supply
- Function Generator
- Oscilloscope
- Connecting wires

## Circuits

For analysis of diode circuit. Here, I have shown three figures (1,2,3) circuit for diode analysis.

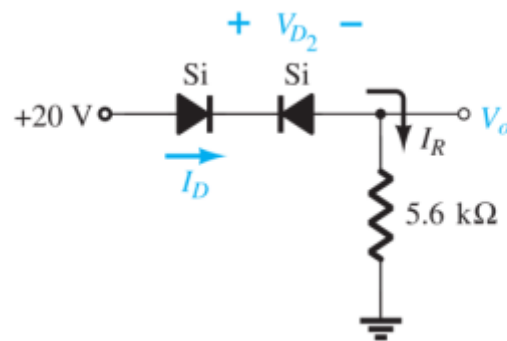


Figure 1 Circuit for diode analysis

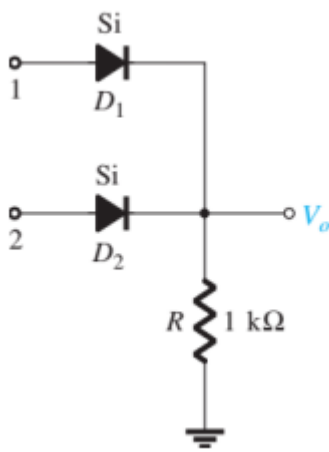


Figure 2 Positive Logic OR Gate

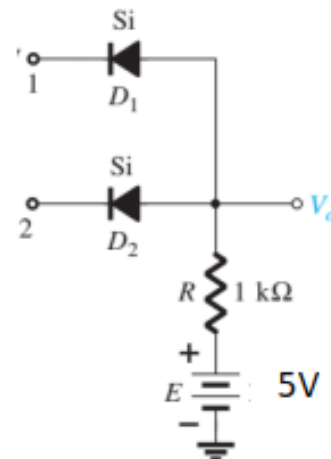


Figure 3 Positive Logic AND Gate

## Procedure

1. Analytically find  $I_D$ ,  $V_{D2}$ , and  $V_o$  for the circuit in figure 1 and record the result in table 1.
2. Implement the circuit in figure 1.

- Find  $I_D$ ,  $V_{D2}$ , and  $V_0$  from the circuit and record the result in table 1.5V
- Implement the circuit in figure 2 and apply inputs according to the table 2 and note the output voltages in table 2 to check if OR gate is properly implemented or not.
- Implement the circuit in figure 3 and apply inputs according to the table 3 and note the output voltages in table 3 to check if AND gate is properly implemented or not.

*Table 1 Data for circuit 1*

Measurement	Theoretical value (Step 1)	Practical value (Step 2)
$I_D$		
$V_{D2}$		
$V_0$		

*Table 2 Data for circuit 2*

Input 1 Voltage	Input 2 Voltage	Output Voltage	Output logic level
0 V	0 V		
0 V	5 V		
5 V	0 V		
5 V	5 V		

*Table 3 Data for circuit 3*

Input 1 Voltage	Input 2 Voltage	Output Voltage	Output logic level
0 V	0 V		
0 V	5 V		
5 V	0 V		
5 V	5 V		

## Report

- Carefully Fill all the data for table 1, 2, 3.
- Comment on the learnings from this LAB.