**Microprocessor Lab**

Laboratory Activity No. 1

**Familiarization with TinkerCAD**

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Score

*Submitted by:*

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**<10:00am- 1:00pm> / <CPE 0412.1-1>**

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*Submitted to:*

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1. Exercise

a. A process in Tinkercad where we can develop electronic circuits that can be quickly updated, modified and tested is called **Prototyping Process**.

b. In Tinkercad, **Start/Stop Simulation** tests the working of the circuits and the components.

c. The device used to assemble and connect the various components is known as **breadboard.**

d. In an electronic circuit with LED, the positive end of the circuit should be connected to

**anode** and negative end should be connected to **cathode** of the LED.

e. A **resistor** is used to restrict the flow of current to electrical components



2. Label the following:

1. Anode and Cathode in a LED

Anode

Cathode

1. Different parts of breadboard



Edge

Main Area

Edge

1. List the electronic components used in a circuit assembly
   * Resistors
   * Capacitors
   * LEDs
   * Diodes
   * Transistors (NPN and PNP)
   * Op-Amps
   * 555 Timer IC
   * Logic Gates (AND, OR, NOT, etc.)
   * ICs (Integrated Circuits)
   * Potentiometers
   * Switches (Push-button, Toggle, Slide, etc.)
   * Voltage Sources (Batteries, Voltage Generators)
   * Wires
   * Breadboard
   * Arduino (Microcontroller)
   * Raspberry Pi (Single-board computer)
   * LCD Displays
   * 7-Segment Displays
   * Temperature Sensors
   * Light Sensors
   * Motion Sensors
   * Ultrasonic Sensors
   * Servo Motors
   * DC Motors
   * Stepper Motors
   * Speaker
   * Relays
   * LDR (Light-Dependent Resistor)
   * PIR Sensor (Passive Infrared Sensor)
   * Sound Sensor
   * Microphone Module
   * IR Receiver Module
   * IR Emitter Module
   * PIR Motion Sensor Module
   * H-Bridge Motor Driver Module
   * ULN2003A Motor Driver Module
   * ESP8266 Wi-Fi Module
   * Bluetooth Module
   * GPS Module
   * Ultrasonic Range Finder Module
   * Accelerometer Module
   * Gyroscope Module
   * Pressure Sensor
   * Gas Sensor
   * Real-Time Clock (RTC) Module
   * Stepper Motor Driver
   * Servo Motor Driver Module
   * Shift Register
   * Multiplexer/Demultiplexer
   * Voltage Regulator