**Microprocessor Lab**

Laboratory Activity No. 1

**Familiarization with TinkerCAD**

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Score

*Submitted by:*

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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.

b. In Tinkercad, 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

Cathode Anode

1. Different parts of breadboard



Edge [

Main Area [

Edge [

1. List the electronic components used in a circuit assembly

**Resistor**: Used to limit the flow of current.

**Capacitor**: Stores and releases electrical energy.

**Inductor**: Stores energy in a magnetic field.

**Diode**: Allows current to flow in one direction only.

**Transistor**: Amplifies or switches electronic signals.

**Integrated Circuit** **(IC)**: Contains multiple electronic components on a single chip.

**LED (Light Emitting Diode)**: Emits light when current flows through it.

**Potentiometer**: Adjustable resistor used for setting voltage or resistance levels.

**Switch**: Controls the flow of current by opening or closing a circuit.

**Relay**: An electrically operated switch.

**Fuse**: Protects against overcurrent by melting and breaking the circuit.

**Connector**: Used to establish electrical connections between components.

**Battery**: Provides a source of electrical power.

**Voltage Regulator**: Maintains a stable voltage output.

**Transformer**: Changes voltage levels in AC circuits.

**Crystal Oscillator**: Generates precise clock signals.

**Sensor**: Detects and responds to physical or environmental changes.

**IC Socket**: Allows easy replacement of ICs.

**Printed Circuit Board (PCB)**: Provides a platform for mounting and connecting components.

**Wire and Cables**: Used for interconnecting components.

**Switches**: Various types such as toggle, push-button, rotary, etc.

**Fuse Holder**: Holds and secures fuses in a circuit.

**Heat Sink**: Dissipates heat from components like transistors.

**Speaker**: Converts electrical signals into sound.

**Microcontroller**: A small computer on a chip, used for control and processing.

**Motor**: Converts electrical energy into mechanical motion.

**Relay Module**: A module containing one or more relays for control applications.

**LCD (Liquid Crystal Display)**: Displays alphanumeric or graphical information.

**Sensor Module**: A module that includes various sensors for specific purposes.

**Voltage Divider**: A network of resistors used to divide voltage