Experiment 1: Study and Observation of Half Wave Rectifier.
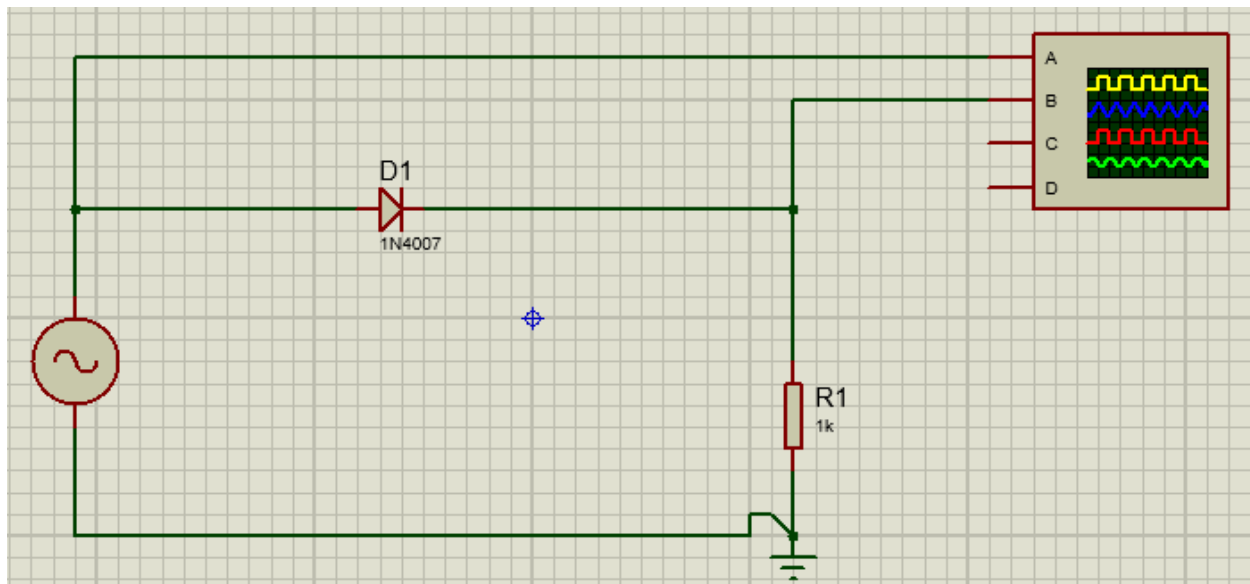
Half-Wave Rectifier:

A half-wave rectifier is a circuit that converts an AC input voltage into a pulsating DC output voltage by allowing only one half of the input waveform to pass through. It is commonly used in power supply circuits.

Equipment and Software Requirements:

- Proteus simulation software
- Computer with Proteus installed

Equipment Requirements in software:

Circuit Diagram:

Data Collection and Analysis:

- Capture the output waveform on the oscilloscope.
- Analyze the waveform to understand how the half-wave rectifier converts AC to DC.
- Measure and record the peak voltage (Vpeak) of the rectified waveform.

Precautions:

- Ensure proper connections in the circuit.
- Avoid applying excessive voltage to the diode.
- Use appropriate units and scales for measurements.
- Be cautious when using simulation software to avoid incorrect configurations.

Questions and Exercises:

- What is the purpose of a half-wave rectifier?
- Calculate the average output voltage of the half-wave rectifier and compare it to the peak input voltage.
- How can you improve the efficiency of a half-wave rectifier circuit?

LAB Report Writing Guideline:

- Experiment no
- Experiment Name
- Objective
- Theory
- Required apparatus
- Circuit Diagram
- Output
- Discussion