Course 05 Electricity and Circuits Assignment 1

## What is electricity

The flow of electrons

## What is static electricity

An electric charge that has involves the transfer of electrons from one object to another object

## What is power

The rate of energy conversion

## What is energy

The ability or capacity to do work

## Provide an example a power and energy

|  |  |
| --- | --- |
| Power | Energy |
| kW | kWh |
| Rate of water being poured | Total amount of water poured |

## What is efficiency

A measurement of useful output compared to the input

## Why should efficiency of electric devices be as high as possible?

Answers may vary

## Describe voltage

Electromotive force that pushes electrons

## Provide examples of a voltage source

Batteries, generators, PV panels

## Describe *voltage drop*

Voltage drop is the voltage that a circuit component displaces. Polarity

## Describe polarity

Polarity is an electrical characteristic of a charge, either positive or negative

## Describe current

The movement of electrons in a specific direction

## Describe charge

Electrical property of electrons and protons

## Describe resistance

Opposition to current, which converts electric energy into heat energy

## Use an analogy to describe the voltage, current, charge, and resistance

Answers may vary

Make sure to show your work for calculations questions.

1. A voltmeter with an internal resistance of 100 000 ohms has less effect on circuit operation than one with an internal resistance of 1 000 000 ohms?

2. An ammeter has an internal resistance equal to the equivalent resistance of the circuit in which measurements are to be taken. How will this affect the current?

3. The term potential difference refers to the electrical pressure of a voltage source that causes current flow in a circuit.

4. What is the resistance of a circuit in which 2.5 A flows when a dc voltage of 120 V is applied?

5. What voltage applied to a 15-Ω resistor will cause 3 A of current to flow?