Ammeter

1. Provide a definition.

Ammeter: an instrument used to measure larger currents.

Amperes

1. Provide a definition.

Amperes: the SI unit used to measure electric current (A). Milliamperes (mA) is also commonly used.

Battery

1. Provide a definition.
2. Describe the symbol used to identify a battery.

Battery: a combination of cells, either wet or dry. Batteries are used as a source in electrical circuits.

Symbol:

battery

Charge

1. Provide a definition.
2. List the three classifications

Charge: The charge on an object depends on the balance between positive and negative charges in the object.

The three classifications are:

1. Neutral: uncharged (equal positive and negative charge).
2. Positive: excess positive charge.
3. Negative: excess negative charge.

Conductors

1. Provide a definition.
2. Provide examples.

Conductors: materials that allow charges to move freely. Most metals are conductors.

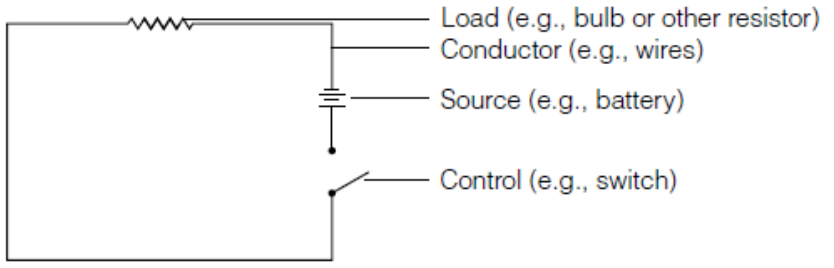
Good conductors: aluminum, copper, gold, nickel, platinum, silver
Fair conductors: silicon, carbon, human body, salt water

Electric Circuit

1. Provide a definition.
2. List the four basic elements (or components) of a circuit.

Electric Circuit: every electric circuit contains a continuous pathway for charges (current) to move.

The four elements are shown in the diagram below.



Electric Current

1. Provide a definition.
2. State the symbol used for current.

Electric Current: the amount of carge that passes a oint in a conducting wire every second. Electric current is measured in amperes (A).

The symbol used for current is the uppercase letter I.

Electrostatic Discharge

1. Provide a definition.

Electric Discharge: the rebalancing of unbalanced charge. Felt as a shock or seen as a spark.

Galvonometer

1. Provide a definition.

Galvanometer: an instrument used to measure very weak current.

Grounding

1. Provide a definition.

Grounding: connecting an object to Earth with conducting wire to safely rebalance a charge.

Insulators

1. Provide a definition.
2. Provide examples.

Insulators: any material that does not allow electricity to flow through it. Most non-metals are insulators.

Examples: cotton, glass, paper, plastic, porcelain, rubber.

Laws of charges

1. Provide a definition.
2. Name the three laws.

Laws of charges: Laws that describe the behaviour between charged and uncharged objects.

The three laws are:

1. Unlike charges attract.
2. Like charges repel.
3. Charged objects attract uncharged (or neutral) objects.

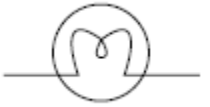
Loads

1. Provide a definition.
2. Provide examples.
3. Describe the symbols that can be used to identify a load.

Loads: items along a circuit that convert electricity into other forms of energy.

Examples: resistors light bulbs, motors, heaters, etc…

Symbols:



lamp

resistor

Neutral

1. Provide a definition.

Neutral: a neutral (or uncharged) object has an equal positive and negative charge.

Ohm

1. Provide a definition.
2. Describe the symbol used to denote ohms

Ohm (Ω): the SI unit for electric resistance.

Symbol: the Greek Letter Omega (Ω)

Ohm's Law

1. State Ohm's Law

Ohm's Law:

$$R = \frac{V}{I} = \frac{voltage\ (potential\ difference)}{current}$$

Ohmmeter

1. Provide a definition.

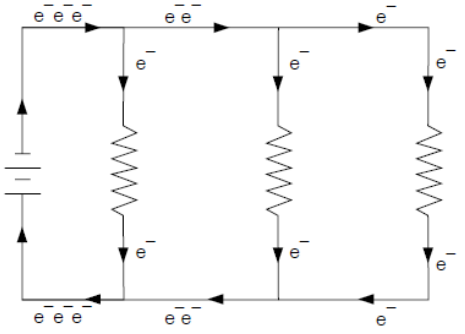
Ohmmeter: an instrument that is used to measure electric resistance.

Parallel circuit

1. Provide a definition.
2. Describe what happens to the current in a parallel circuit.

Parallel circuit: a circuit with more that one current path. Example shown below.

The total current in a parallel circuit is divided through each branch (or part of the circuit). In the example shown here the current is divided into three.



Potential Difference

1. Provide a definition.
2. Name the standard unit for potential difference.

Potential Difference: the difference in potential energy (voltage) per unit of charge between one point in the circuit and another point in the circuit.

Standard unit: the volt (V)

Resistance

1. Provide a definition.
2. Describe the resistance of a good conductor.
3. Describe the resistance of a poor conductor.

Resistance: the property of a substance that hinders motion of electric charge and converts electric energy into other forms of energy.

Good Conductor: a good conductor has low resistance (electric charge can move easily).

Poor Conductor: a poor conductor has high resistance

Resistor

1. Provide a definition.
2. Describe the symbol used to denote resistors in an electric circuit.

Resistor: a device that resists the flow of electricity, often changing it into another form.

Symbol:

resistor

Semiconductors

1. Provide a definition.
2. Provide examples.

1. Semiconductors: materials with higher conductivity than insulators but with lower conductivity than metals.

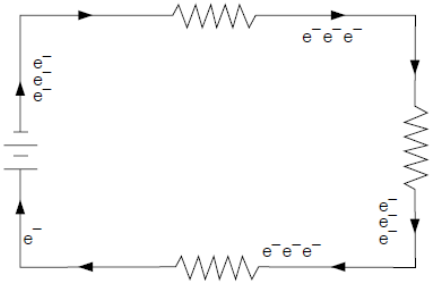
2. Silicon with gallium added, and, germanium with phosphorus added.

Series circuit

1. Provide a definition.
2. Describe the flow of electricity in a series circuit.

Series circuit: circuits with only one current path. Example is shown below.

All the moving charges travel through each component in the circuit.



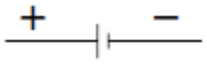
Source

1. Provide a definition.
2. Provide examples.
3. Identify the symbols that can be used to identify a source.

Source: The source of electric energy in a circuit.

Examples: Battery, Cell

Symbols:



cell

battery

Static Electricity

1. Provide a definition.

Static Electricity: a charge produced by rubbing or touching objects together.

Superconductors

1. Provide a definition.

Superconductors: materials that offer little or no resistance to the flow of charges. Superconductors are usually made of metal allows and ceramics.

Switch

1. Provide a definition.
2. Describe the symbol used to identify a switch.

Switch: a device used to open or close a circuit to control the flow of current through it.

Symbol:

switch

Unbalance Charges

1. Provide a definition.

Unbalanced Charges: a more correct term for static electricity, because the charges are not stationary – they move.

Voltage

1. Provide a definition.

Voltage (V): A common term referring to potential difference.