

**Science 10**  
**Electricity Exam Review**

Define each of the following:

Static electricity	electrostatics	law of electric charge	insulator
Conductor	series circuit	parallel circuit	charging by contact
charging by friction	charging by induction	discharge	electric potential
resistance	voltage	electric circuit	ohm's law
voltmeter	ammeter		

Answer each of the following questions:

- If each of the following items were rubbed together state which would be (-) and which would be (+)
  - Acetate and silk
  - an ebonite comb and human hair
  - Your silk pj's and your cotton sheets
- Explain why static electricity is worse in the winter?
- Name the parts of an electric circuit and give an example of each one.
- Explain the difference between each of the following terms:
  - Static electricity and current electricity
  - Series circuit and parallel circuit
  - Closed circuit and open circuit
- Draw the following as schematic circuit diagrams:
  - A battery, a motor and two light bulbs connected in series.
  - A battery, a motor and two light bulbs connected in parallel.
  - Two batteries, a motor and two light bulbs connected in series.
  - one battery, a motor and two light bulbs connected in series.
  - Which of the above a. or b. would have the least resistance and why?
  - Which of the above c. or d. would have the most voltage and why?
- What is the symbol, unit of measurement and explanation for each of the following
  - electrical potential/voltage
  - electric current
  - electric resistance
- Explain the relationships between each of the following:
  - Current and Resistance
  - Voltage and Current
  - Voltage and Resistance
- Answer each of the following questions using the formulas for Ohm's Law  
 $V = I \times R$        $I = V \div R$        $R = V \div I$ 
  - How much current is running through a circuit which has a voltage of two 1.5V batteries and a resistance of 35  $\Omega$ ?
  - How many 2V batteries would be required to power a circuit with a current of 4A and a resistance of 8 $\Omega$ ?
  - What is the voltage running through a circuit that contains a resistance of 450 $\Omega$  and a current of 4.2 amps running through it.
  - Calculate the resistance flowing through a circuit with 120V and 0.5A of current.
  - Calculate the resistance flowing through a circuit with three 1.5V batteries and 2 amps of current.