Electricity Study Guide

Mrs. Côté **Name: _____** **Science 9**

1. What are the different particles found within an atom of matter?
2. What is electricity and how is it made?
3. What two charges can electricity have? How do objects become charged?
4. List 3 methods (ways) of charging a neutral object and list 1 situation where neutral objects are charged by each of the methods.
5. Explain what the electrostatic series is and how it works by using an example of two items of matter found on it.
6. Why is the term static electricity used?
7. Explain the difference between a conductor and an insulator? Give examples of each.
8. State the law of electric charges (Coulombs Law). What happens when charged objects are brought near uncharged objects? What about when two charged objects are brought near each other?
9. Describe the difference between static electricity and current (circuit) electricity.
10. Make a chart listing the parts of an electric circuit. State a function for each part and provide two examples.
11. In which direction does the electric charge flow around the circuit?
12. Explain the difference between a series and parallel circuit. What happens to each circuit when an extra load (light bulb) is added as well when a light bulb burns out in a multi-loaded circuit?
13. Create a schematic drawing using universal symbols for a series circuit with 3 lightbulb loads, 1 switch and 1 battery.
14. Create a schematic drawing using universal symbols for a parallel circuit with 2 lightbulb loads, 2 switches (one for each bulb) and 1 battery.
15. Define, show the symbol and state the SI unit for the following terms; potential difference, electric current, and electrical resistance.
16. State Ohm's law.
17. Solve ohm's law problems.
    a) If the potential difference in a circuit is 120 volts and the resistance is 50 ohms, what is the current?
    b) A 9 volt battery produces a current of 2.0 amperes. What is the resistance?
    c) What voltage produces a current of 50 amps with a resistance of 20 ohms?
    d) What is the current produced with a 9 volt battery through a resistance of 100 ohms?
    e) What voltage produces a current of 500 amps with a resistance of 50 ohms?
    f) What resistance would produce a current of 200 amperes with a potential difference of 2,000 volts?