

## Electricity Review

### Definitions

Static Electricity	Insulator	Potential Difference
Electrostatics	Conductor	Grounding
Current Electricity	Resistance	

### Concepts:

- 1) State the Law of Electric Charges (3 points).
- 2) What are the four components of a simple circuit?
- 3) Draw a series circuit with a 2 cell battery, one switch, a light bulb, and a voltmeter. Use arrows to indicate electron flow.
- 4) Draw a parallel circuit with a 3 cell battery, an ammeter, and three light bulbs. Use arrows to indicate the flow of electrons.
- 5) What would happen if a bulb in a parallel series burnt out? How would this be different in a series circuit.
- 6) Outline charging by friction, charging by contact, and charging by conduction.
- 7) List the units for: Resistance, current, charge, potential difference (voltage).
- 8) What is the electrostatic series and how is it used?
- 9) What are the four factors that affect resistance?
- 10) Outline one renewable and one non-renewable source of energy.
- 11) Describe how lightning works.
- 12) Outline any of the following TWO everyday items that use electricity.

### Calculations Practice:

If 500C of charge passes a point in a conductor in 2.5 min, what is the current through that point in the conductor?(Remember: Given, Required, Solution)

How much charge passes through a starting motor, if it takes 7.1 s to start a car and there is a current of 230 A during that time? (Remember: Given, Required, Solution)

A hairdryer uses 1440 Joules of energy in 90 seconds. What is the wattage of the hairdryer? (Remember: Given, Required, Solution)

The potential difference across a light bulb is 12 V. How much energy does 5 C of charge give off as it passes through the light bulb? (Remember: Given, Required, Solution)

In a battery, 12 C of charge picks up 72 J of energy as it passes from the positive terminal through the battery to the negative terminal. What is the potential difference across the battery? (Remember: Given, Required, Solution)

A 30 W lamp runs for 30 seconds. How much energy is used by the lamp? (Remember: Given, Required, Solution)

For each of the following Circuits, fill in the missing values:

