# 18.7
# Electricity - Review

# 1. What is an electric charge?

**The property of matter that gives it the ability to attract and repel other matter.**

# 2. What are protons?

**Part of the atom that have a positive charge**

# 3. What are electrons?

**Part of the atom that have a negative charge**

## 4. What happens if an atom loses or gains an electron?

**The atom becomes electrically charged**

# 5. What is an Electric Force?

**An Electric Force is the attraction and repulsion of electric charges**

# 6. Define the Law of Electrostatics

- Like charges repel
- Opposite charges attract

## 7. What does the strength of Electric Forces depend on?

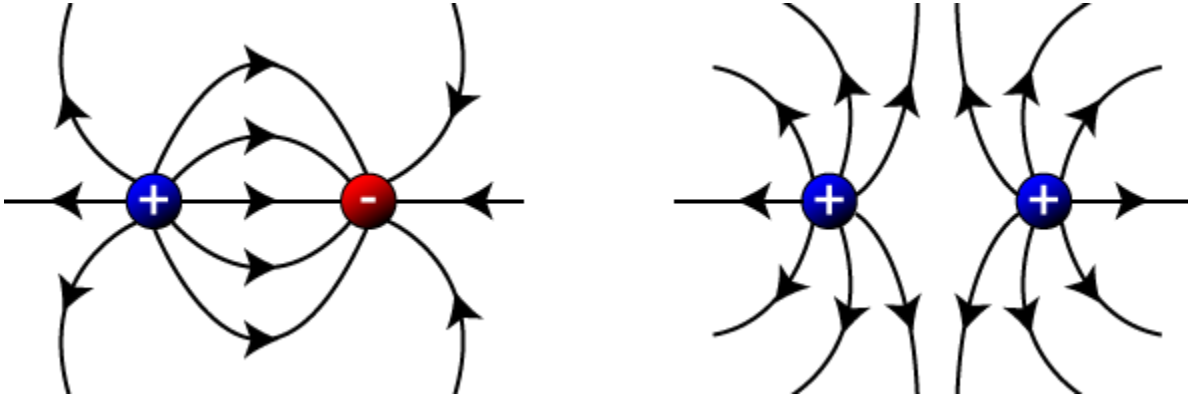
**The strength of the electric charges**

# 8. What is an Electric Field?

The space around the charge particle that it can affect.

# 9. What two items is the strength of the Electric Field dependent on?

1. Strength of the charge
2. Distance from the charge



# 10. What is static electricity?

Study of the behavior of electric discharges, including how charges are transferred between objects.

# 11. Name and define the three ways a charge can be transferred

**Friction**

Charge transferred by objects rubbing together

**Conduction**

Charge transferred by direct contact

**Induction**

Charge transferred from a distance

# 12. Define electric current

**Electric Current is the continuous flow of electric charge.**

# 13. What is the symbol and units for current?

Symbol: **I**

Units: **amps**

# 14. Define and give an example of the two types of current

**Direct Current (DC)**

Electric charge that flows in one direction

**Example**

Battery in a Flashlight

**Alternating Current (AC)**

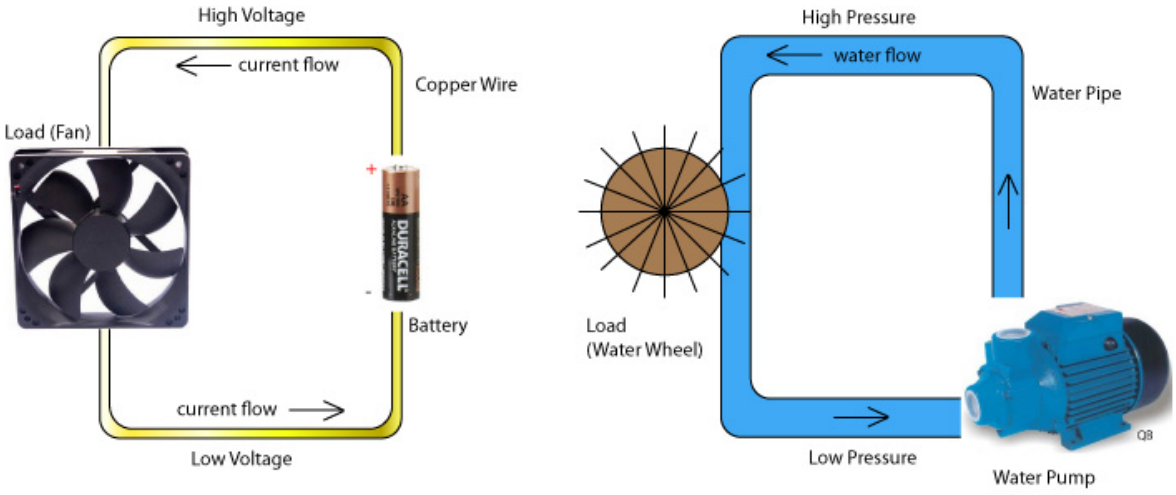
A flow of electric charge that regularly reverses its direction

**Example**

Electricity within a home or school

# 15. Define voltage

## Source of electrical energy



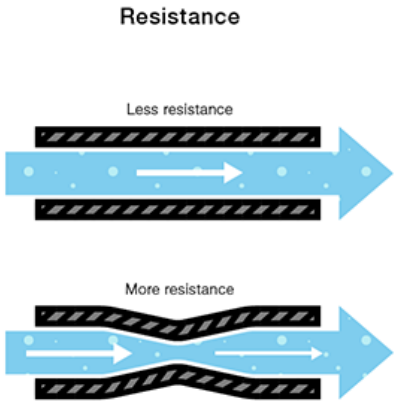
# 16. What is the symbol and units for voltage?

Symbol: **V**

Units: **volts**

# 17. Define resistance

**The opposition to the flow of charges in a material.**



# 18. What is the symbol and units for resistance?

Symbol: **R**

Units: **Ω (ohms)**

# 19. What three things can affect resistance?

1. Thickness
2. Length
3. Temperature

## a. What happens to resistance if temperature increases?

**As temperature increases, resistance decreases**

# 20. Define and give an example of an insulator

Materials that charge cannot easily flow

**Examples:**

Wood and rubber are good insulators.

# 21. Define and give an example of a conductor

Materials that charge can flow easily

**Examples:**

Metals such as copper, silver, aluminum

## 22. What is needed to have a charge have a continuous flow?

**Source of electrical energy**

# 23. What is necessary to make an electric circuit operate?

A complete circuit or a complete loop

# 24. What is the definition of Ohm's Law?

**Explains the relationship between current, resistance, and voltage.**

# 25. What is the formula for Ohm's Law?

$V = I \times R$

# 26. What is the device used to measure voltage and current?

**Multi-meter**

# 27. What is a series circuit?

Charges have only one path through which it can flow.

**Example**

Old Christmas tree lights

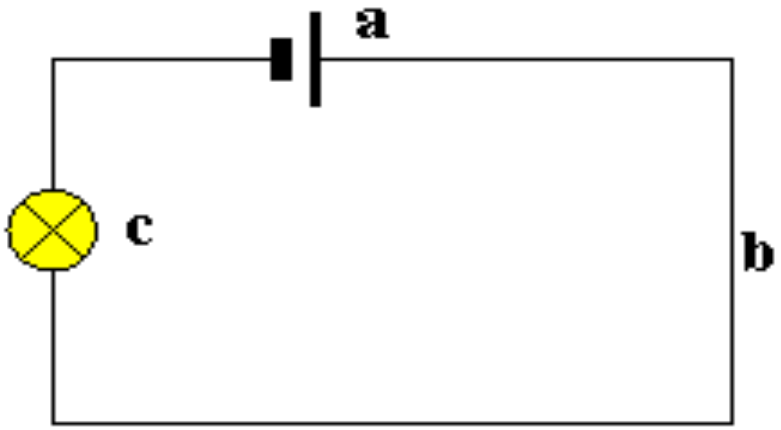
# 28. What is a parallel circuit

Electric charges has more than one path that it can flow

**Example**

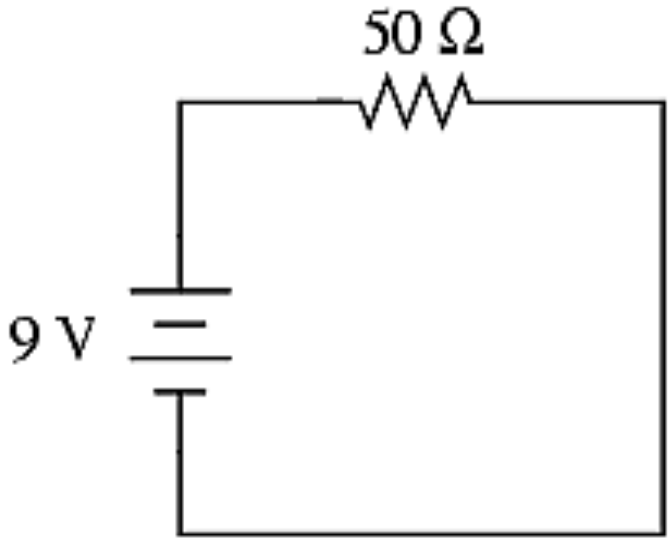
New Christmas tree lights

# 29. What do the letters represent in the circuit diagram below?




A = Battery or Generator
B = Wires
C = Light or Bell (Device)

# 30. What is the current in the circuit below?




**I = V / R**

**I = 9 V / 50 Ω**

**0.18 Amps**

31. If the current in a freezer is 12 amps and the resistance is 10 Ω, what is the voltage?

$V = I \times R$

$V = 12\ A \times 10\ \Omega$

$V = 120$ volts

32. What electrical current safety device prevents current overload in a circuit. It has a wire in the center and melts if too much current passes through it.

Fuse

# 33. What electrical current safety device is used in most houses today?

Circuit Breaker

## 34. What is a transfer of excess charge though a conductor to Earth is called?

**Grounding**

## 35. What is an electrical safety outlet used for grounding electrical current?

**Ground-Fault Circuit Interrupter (GFCI)**

# 1st Semester Results

| Average | Class |
| --- | --- |
| 88.6% | 5th Period Average |
| 87.8% | 6th Period Average |

A's = 19 Students

B's = 15 Students

C's = 2 Students

D's = 1 Student

F's = 1 Student

Average = 113.8/129 (88.2%)

Test Taken = 38

High: 127 (x3)

Low: 52

- ***Any Questions!!!!***

- ***Good Luck and Study !!***