

Name _____

Date _____

Class _____



Electricity and Magnetism

(pp 231-237)

Directions: Circle the term or phrase in parentheses that correctly completes the sentence.

- When a current is passed through a coil of wire with a piece of iron inside, (an electromagnet, a commutator) is formed.
- An electromagnet is a (permanent, temporary) magnet.
- Adding more turns to the wire coil (increases, decreases) the strength of an electromagnet.
- Increasing the amount of current that flows through a wire (increases, decreases) the strength of an electromagnet.
- Electromagnets change electrical energy into (chemical, mechanical) energy.
- An instrument that is used to detect current is (an electromagnet, a galvanometer).
- An electric motor changes (chemical, electrical) energy into mechanical energy.
- Like a galvanometer, an electric motor contains (a switch, an electromagnet) that is free to rotate between the poles of a permanent, fixed magnet.
- A coil's magnetic field can be flipped by (reversing the direction of current, increasing the number of loops) in the coil.
- In a motor, a reversing switch that rotates with an electromagnet is called a (voltmeter, commutator).
- In a motor, the stronger the magnetic field in the coil, the (weaker, stronger) the force between the permanent magnet and the electromagnet.
- The speed of an electric motor can be controlled by varying the amount of (electric current, mechanical energy) to the motor.
- Name three devices you see or use everyday that make use of the relationship between electricity and magnetism to operate.

Date _____

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Magnetism and Its Uses

pp. 224-242

Part A. Vocabulary Review

Directions: Complete the following sentences using the terms listed below.

- | | | | |
|---------------------------|---------------------|------------------|----------------|
| magnetism | magnetic poles | magnetic domains | turbine |
| electromagnet | repel | computer | generator |
| electromagnetic induction | alternating current | transformer | direct current |
| galvanometer | | | electric motor |

- The regions on a magnet where the magnetic force is strongest are called _____.
- The south pole of a magnet will _____ the south pole of another magnet.
- A device that uses an electromagnet to measure electric current is a(n) galvanometer.
- A device used to increase or decrease the voltage of current in a power line is a(n) transformer.
- A switch that regularly reverses the current in some motors is a(n) commutator.
- Current that flows in only one direction through a wire is called turbine.
- A large wheel that rotates when pushed by water, wind, or steam.
- When current in a circuit reverses its direction in a regular pattern, it is called _____.
- The properties and interactions of magnets are referred to as _____.
- Groups of aligned atoms in a magnet are called _____.
- A(n) _____ is formed by placing a piece of iron inside a current-carrying coil of wire.
- A machine that changes electrical energy to mechanical energy is a(n) _____ used to do work, such as turning a fan.
- A device that produces an electric current by rotating a coil of wire in a magnetic field is a(n) _____.
- The process by which moving a wire through a magnetic field produces an electric current is _____.