

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Multiple Choice

Fill in the circle next to the correct answer.

1. Which metal does not have magnetic properties?  
☐ A aluminum                      ☐ C iron  
☐ B cobalt                          ☐ D nickel
2. How does Earth's magnetosphere protect the planet?  
☐ A directs particles toward the equator   ☐ C deflects high-speed particles  
☐ B emits colored light                      ☐ D extends light speeds from the planet
3. How can you increase the strength of an electromagnet?  
☐ A decrease coil wire turns                ☐ C increase circuit resistance  
☐ B increase coil wire turns                ☐ D decrease circuit current
4. Which device converts electrical energy into mechanical energy?  
☐ A generator                                ☐ C battery  
☐ B commutator                               ☐ D electric motor
5. How does the domain model explain why nonmagnetic materials are nonmagnetic?  
☐ A the domains point in the same direction  
☐ B the domains point in different directions  
☐ C stroking aligns the domains  
☐ D heating/pounding changes the direction of the domains
6. Which is an example of a device that uses mechanical energy to produce electricity?  
☐ A electric motor                            ☐ C electric generator  
☐ B electromagnet                            ☐ D electric crane
7. What is the primary source of electricity in the United States?  
☐ A wind power                                ☐ C solar power  
☐ B geothermal energy                        ☐ D fossil fuels
8. How does geothermal energy generate electricity?  
☐ A solar cells trap the energy                ☐ C steam turns turbines  
☐ B tidal kinetic energy is harnessed       ☐ D wind power turns the blades and rotor
9. Which of these energy sources is not renewable?  
☐ A biomass fuel                               ☐ C hydroelectric energy  
☐ B solar energy                                ☐ D petroleum

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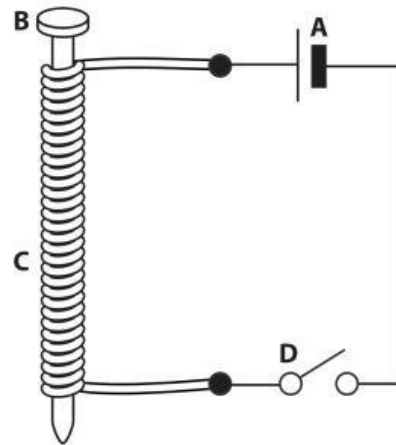
10. What happens when the north poles of two magnets come in contact?

- ☐ A attract each other      ☐ C repel each other  
☐ B reverse polarity      ☐ D attract and then repel

## Matching

Match each labeled part on the diagram of an electromagnet with the correct term. Write the letter of the part on the line provided.

11. \_\_\_\_\_ Coil of wire  
 12. \_\_\_\_\_ Iron core  
 13. \_\_\_\_\_ Switch  
 14. \_\_\_\_\_ Battery



## Short Response

Read each item carefully. Write your answers in the space provided.

15. Explain how a cordless device runs on a direct current.

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16. Name three ways to conserve electric energy.

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17. Explain why auroras form displays of light that can be red, blue, green, or purple.

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18. Describe the magnetic field surrounding the horseshoe magnet.

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19. How is electricity generation similar at a hydroelectric dam and a wind farm?

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