



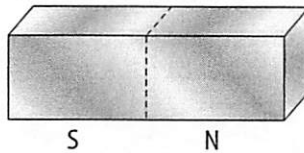
# Chapter Test

# Magnetism

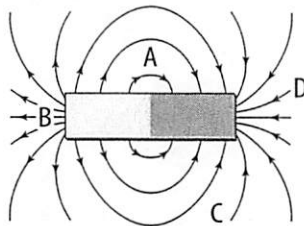
## I. Testing Concepts

**Directions:** For each of the following, write the letter of the term that best completes the sentence.

- \_\_\_\_\_ 1. The core of an electromagnet is usually made of \_\_\_\_\_.  
 a. glass                      b. copper                      c. aluminum                      d. iron
- \_\_\_\_\_ 2. A magnetic field exists around a wire whenever \_\_\_\_\_.  
 a. the wire is coiled                      c. the wire is wrapped around an iron nail  
 b. current flows through the wire                      d. a magnet attracts the wire
- \_\_\_\_\_ 3. The domains in an unmagnetized material that can be magnetized are aligned \_\_\_\_\_.  
 a. in all directions                      c. north to south  
 b. in only one direction                      d. in opposite directions
- \_\_\_\_\_ 4. A device that converts mechanical energy into electric energy is a(n) \_\_\_\_\_.  
 a. electric motor                      c. transformer  
 b. electric generator                      d. electromagnet
- \_\_\_\_\_ 5. If you cut the magnet shown below along the dotted lines, there will be \_\_\_\_\_ south pole(s).  
 a. one  
 b. two  
 c. four  
 d. eight



- \_\_\_\_\_ 6. The strength of an electromagnet CANNOT be increased by \_\_\_\_\_.  
 a. reversing the current                      c. using a larger core  
 b. increasing current                      d. increasing the number of coils
- \_\_\_\_\_ 7. A moving electric charge creates \_\_\_\_\_.  
 a. solar radiation                      c. a magnetic field  
 b. static electricity                      d. neutrons
- \_\_\_\_\_ 8. The lines of force around the magnet shown below are strongest at \_\_\_\_\_.  
 a. A and D  
 b. B and D  
 c. A and C  
 d. C and D



- \_\_\_\_\_ 9. An electric current that flows back and forth in a circuit is a(n) \_\_\_\_\_.  
 a. induced current                      c. direct current  
 b. transformed current                      d. alternating current
- \_\_\_\_\_ 10. Magnetic force is exerted through \_\_\_\_\_.  
 a. a magnetic field                      c. the south pole of a magnet only  
 b. the north pole of a magnet only                      d. an aurora

## Chapter Test (continued)

### Skill: Sequencing

**Directions:** Use the letters **a** through **h** to order these steps describing how an electric bell works. The first step in the series is given.

Press the button.

- \_\_\_\_\_ 7. hammer strikes the bell
- \_\_\_\_\_ 8. circuit closes
- \_\_\_\_\_ 9. electromagnet is turned off
- \_\_\_\_\_ 10. electromagnet attracts plate attached to hammer
- \_\_\_\_\_ 11. electromagnet is turned on
- \_\_\_\_\_ 12. spring pushes plate and hammer
- \_\_\_\_\_ 13. circuit closes
- \_\_\_\_\_ 14. circuit opens

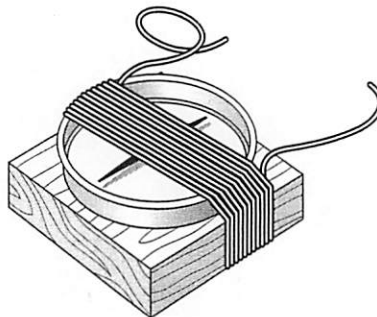
### III. Applying Concepts

1. The diagrams below show the magnetic domains in an iron nail. On the left, the nail is unmagnetized. Use the diagram on the right to draw how the domains would look after the nail has been rubbed with a strong magnet.



**Directions:** Use the figure below to answer questions 2, 3, and 4.

A wire is wrapped around a compass that is placed on a wooden block, as shown below. The compass is turned so that the needle is aligned with the turns of wire.



2. What will happen when the wire is connected to the terminals of a battery? Why?

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