

## Chapter 3 Study Guide

### Multiple Choice

Identify the choice that best completes the statement or answers the question.

- \_\_\_\_ 1. Which of the following have the same number of valence electrons?
  - a. the elements having similar atomic numbers
  - c. the elements having similar atomic masses
  - b. the elements in a period
  - d. the elements in a group/family
- \_\_\_\_ 2. In the periodic table, the most reactive metals are found
  - a. in Periods 6 and 7 at the bottom.
  - c. in Group 1, the first column on the left.
  - b. in Groups 13 through 16 in the center.
  - d. in Period 1, the first row across the top.
- \_\_\_\_ 3. Mendeleev created the first periodic table by arranging elements in order of
  - a. increasing atomic number.
  - c. decreasing atomic mass.
  - b. increasing densities.
  - d. increasing atomic mass.
- \_\_\_\_ 4. What is the greatest number of valence electrons an atom can have?
  - a. 1
  - c. 100
  - b. 3
  - d. 8
- \_\_\_\_ 5. Fluorine, chlorine, bromine, and iodine are part of a family called
  - a. metalloids.
  - c. halogens.
  - b. alkali metals.
  - d. noble gases.
- \_\_\_\_ 6. What information in the periodic table indicates the number of protons in an atom?
  - a. the element's atomic mass
  - c. the position of the element in its column
  - b. the element's chemical symbol
  - d. the element's atomic number
- \_\_\_\_ 7. The state of matter in which atoms are stripped of their electrons and the nuclei are packed close together is called
  - a. a solid.
  - c. a liquid.
  - b. a gas.
  - d. plasma.
- \_\_\_\_ 8. Electrons involved in bonding between atoms are
  - a. inside the nucleus.
  - c. valence electrons.
  - b. positively charged.
  - d. closest to the nucleus.
- \_\_\_\_ 9. Which of the following statements about transition metals is true?
  - a. They are so similar that it's often difficult to find differences between them.
  - b. They are the most reactive of all the types of metals.
  - c. They are so soft that they can be cut with an ordinary knife.
  - d. They are never found uncombined in nature.
- \_\_\_\_ 10. How does nuclear fusion create new elements inside stars?
  - a. Small nuclei combine to form larger nuclei.
  - b. Small nuclei cause large nuclei to break apart.
  - c. Large nuclei combine, then form smaller nuclei.
  - d. All the nuclei repel one another because of their positive charges.