CHAPTER

CHEMISTRY OF LIFE

Diagnostic Test

Choose the letter of the best answer.

- **1.** Microscopes led to the discovery that all organisms are
 - a. made of cells.

- c. multicellular.
- **b.** identical biochemically.
- **d.** different species.
- **2.** Together, all of the chemical processes that build up and break down materials in organisms are called
 - a. respiration.

c. metabolism.

b. photosynthesis.

- d. homeostasis.
- **3.** The substance that covers the majority of Earth's surface and also makes up the largest percentage of your cells is
 - a. carbon.

c. hydrogen.

b. water.

- d. nitrogen.
- **4.** What is the name of the negatively charged particles shown in this model of an atom?

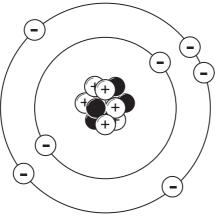


FIG. 2.1

a. electrons

c. neutrons

b. protons

- **d.** prions
- **5.** Through photosynthesis, plants convert energy from sunlight into
 - **a.** thermal energy.

c. light energy.

b. chemical energy.

- **d.** mechanical energy.
- **6.** When a rabbit runs away from a fox, its muscles need
 - **a.** homeostasis.

c. carbon.

b. heat.

d. energy.

DIAGNOSTIC TEST, CONTINUED

- **7.** To test whether a plant grows better in acidic or basic soil, the amount of water and sunlight the plants receive must be controlled as factors called
 - **a.** observations.
 - **b.** dependent variables.
 - **c.** independent variables.
 - **d.** constants.
 - **8.** Which of the following statements is true of the substance produced in the simple chemical reaction depicted in Figure 2.2?

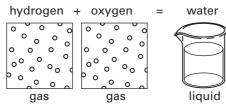


FIG. 2.2

- **a.** It is in a different physical state than the original substances.
- **b.** It is identical to the original substances.
- **c.** It is a compound, just like the original substances.
- **d.** It contains more atoms than the original substances.
- **9.** Which of the following processes enables cells to stay within the limited range of conditions in which they function best?
 - **a.** biodiversity

c. homeostasis

b. adaptation

- d. metabolism
- **10.** Elements such as carbon can move through the environment and organisms in a cycle because living and nonliving things interact in
 - a. cells.

c. organisms.

b. ecosystems.

d. species.