

Chapter 6

The Chemistry of Life

Reinforcement and Study Guide

Section 6.1 Atoms and Their Interactions

In your textbook, read about elements, atoms, and isotopes.

Determine if the statement is true. If it is not, rewrite the italicized part to make it true.

1. An element is a substance that *can be* broken down into simpler substances. _____
2. On Earth, *90* elements occur naturally. _____
3. Only four elements—*carbon, hydrogen, oxygen, and nitrogen*—make up more than 96 percent of the mass of a human. _____
4. Each element is abbreviated by a one- or two-letter *formula*. _____
5. Trace elements, such as iron and magnesium, are present in living things in *very large* amounts.

6. The properties of elements are determined by *the structures of their atoms*. _____

Label the parts of the atom. Use these choices:

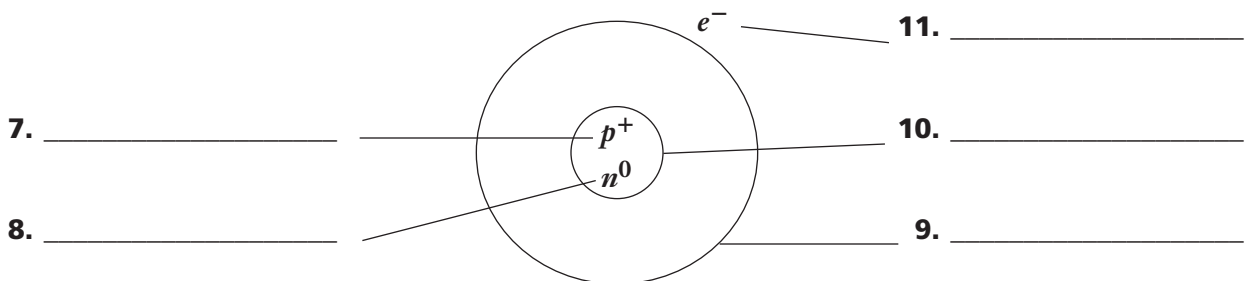
energy level

electron

neutron

proton

nucleus



Answer the following questions.

12. What is the maximum number of electrons in each of the following energy levels: first, second, third?

13. Boron has two isotopes, boron-10 and boron-11. Boron-10 has five protons and five neutrons. How many protons and neutrons does boron-11 have? Explain.

Chapter
6
The Chemistry of Life, continued
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Section 6.1 Atoms and Their Interactions, continued

In your textbook, read about compounds and bonding, chemical reactions, and mixtures and solutions.

Write the type of substance described. Use these choices: compound, element.

_____ **14.** H₂O, a liquid that no longer resembles either hydrogen or oxygen gas

_____ **15.** A substance that can be broken down in a chemical reaction

_____ **16.** Carbon, the substance represented by the symbol C

Complete the table by checking the correct column for each description.

Statement	Ionic Bond(s)	Covalent Bond(s)
17. Found in the compound NaCl		
18. Increases the stability of atoms		
19. Results in the formation of a molecule		
20. Is formed when atoms share electrons		

Fill in the blanks with the correct number of molecules to balance the chemical equation. Then answer the questions.



21. Why must chemical equations always balance?

22. Which number indicates the number of atoms of each element in a molecule of a substance.

23. When is a mixture not a solution?

24. What is the difference between an acid and a base?
