Nonmetals, Inert Gases, and Semimetals (pp. 148–155)

This section describes the properties of the elements in the periodic table that are not metals.

Use Target Reading Skills

As you read, complete the outline about nonmetals, inert gases, and semimetals. Use the red headings for the main ideas and the blue headings for subtopics when possible. Add supporting details.

Nonmetals, Inert Gases, and Semimetals
I. Properties of Nonmetals A. Physical Properties B. II. A. B. C. D. III. A. B. IV. A. B. V. A. B.

Nonmetals, Inert Gases, and Semimetals *(continued)*

Properties of Nonmetals (pp. 149–150)

1. The elements that lack most of the properties of metals are called _____.

2. Where are the nonmetals located on the periodic table?

_____

_____

3. Is the following sentence true or false? Four of the nonmetals are gases at room temperature. _____

4. Circle the letter of each sentence that is true about the physical properties of nonmetals.

a. Solid nonmetals are brittle.
b. They usually have lower densities than metals.
c. Most are shiny.
d. They are good conductors of both heat and electricity.

5. Except for the Group 18 elements, most nonmetals readily form _____.

Families With Nonmetals (pp. 150–153)

6. Circle the letter of the number of electrons that an atom in the carbon family can gain, lose, or share.

a. 1 **b.** 4
c. 5 **d.** 6

7. All living things contain what kind of compounds?

_____

_____

_____

8. Circle the letter of the number of electrons that an atom in the nitrogen family usually gains or shares.

a. 2 **b.** 7
c. 5 **d.** 3

9. The atmosphere is almost 80 percent _____.

10. A molecule composed of two atoms is called a(n) _____.

11. Circle the letter of the number of electrons that an atom in the oxygen family usually gains or shares.

a. 6 **b.** 7
c. 5 **d.** 2

12. Circle the letter of each sentence that is true about oxygen.

a. The oxygen you breathe is a diatomic molecule.
b. Oxygen rarely combines with other elements.
c. Oxygen is the most abundant element in Earth's crust.
d. Ozone (O_3) collects in a layer in the upper atmosphere.

13. Circle the letter of the number of electrons that an atom in the halogen family usually gains or shares.

a. 4
b. 1
c. 6
d. 3

14. Is the following sentence true or false? Uncombined halogens are dangerous to humans. _____

Inert Gases (p. 154)

15. Circle the letter of each sentence that is true about the inert gases.

a. They exist in large amounts in the atmosphere.
b. They are chemically unreactive.
c. They readily gain, lose, or share electrons.
d. They are used in glowing electric lights.

16. Complete the table about families of nonmetals.

Nonmetals		
Family	**Group Number**	**Nonmetals in Family**
a. Carbon family		
b. Nitrogen family		
c. Oxygen family		
d. Halogen family		
e. Inert gases		

Nonmetals, Inert Gases, and Semimetals *(continued)*

Hydrogen (p. 154)

17. How many protons and electrons does a hydrogen atom have?

_____

_____

18. Why can't hydrogen be grouped in a family?

_____

_____

_____

Semimetals (p. 155)

19. What are semimetals?

_____

_____

_____

20. What is the most common semimetal? _____

21. What is the most useful property of the semimetals?

_____

_____

_____

22. What are semiconductors?

_____

_____

_____

_____