

6.1 ORGANIZING THE ELEMENTS

Section Review

Objectives

- Explain how elements are organized in a periodic table
- Compare early and modern periodic tables
- Identify three broad classes of elements

Vocabulary

- periodic law
- metals
- nonmetals
- metalloids

Part A Completion

Use this completion exercise to check your understanding of the concepts and terms that are introduced in this section. Each blank can be completed with a term, short phrase, or number.

- Chemists used the 1 of elements to sort them into groups. 1. properties
- The periodic table organizes the elements into vertical 2 and horizontal 3 in order of increasing 4. 2. columns/groups/families
3. rows or periods
- The table is constructed so that elements that have similar chemical properties 4. 4. atm #
- are in the same 5. 5. group/col
- 6 have a high luster, or sheen, when cut. Most nonmetals are 7 at room temperature. 6. Metals
- Elements with properties that are similar to those of metals and nonmetals are called 8. 7. gases
- Across the periodic table, the properties of elements become 9 metallic and 10 nonmetallic. 8. metalloids
9. less
10. more

Part B True-False

Classify each of these statements as always true, AT, sometimes true, ST, or never true, NT.

- NT 10. In his periodic table, Mendeleev arranged the elements in order of atomic number.
- NT 11. There are six periods in a periodic table.
- AT 12. Most of the elements in the periodic table are metals.
- ST or NT 13. The elements within a period have similar properties.

Part C Matching

Match each description in Column B to the correct term in Column A

Column A

- B 14. metals
- E 15. periods
- A 16. group
- C 17. nonmetals
- D 18. metalloids

Column B

- a. a vertical column of elements in the periodic table
- b. good conductors of heat and electric current
- c. poor conductors of heat and electric current
- d. have properties that are similar to those of metals and nonmetals
- e. the horizontal rows of the periodic table

Part D Questions and Problems

Answer the following questions in the space provided.

19. List the elements of Group 5A. Tell whether each is a metal, nonmetal, or metalloid.

Nitrogen (NM), Phosphorus (NM), Arsenic (Metalloid), Antimony (Metalloid), Bismuth (M)

20. List three properties of metals.

1) Good conductors of heat + electric current
2) high luster
3) Solid @ rtemp
4) ductile
5) malleable

21. Name two elements that have similar properties to those of chlorine.

Fluorine, Bromine, Iodine