Where To Download Atomic Structure And The Periodic Table Chapter 5

Chapter 5: Atomic Structure and the Periodic Table

1. Atomic Structure

In a neutral atom, the number of electrons equals the number of protons. The periodic table represents neutral atoms. The periodic table is the atomic mass. Atomic mass is measured in Atomic Mass Units where 1 amu = (1/12) mass of carbon measured in grams.

2. Periodic Table

The groups of the periodic table are displayed as vertical columns numbered from 1 to 18. The elements in a group have the same number of valence electrons, which determines their chemical behavior. The periodic table is arranged in vertical columns called Groups numbered I – VIII and in rows called Periods.

3. Properties of Elements

Transitions elements are metals with high melting points and high densities. They are typically found in the periodic table. Transition elements are characterized by the presence of one or more valence electrons.

4. Valence Electrons

Valence electrons are the outermost electrons of an atom, which determine its chemical properties. Valence electrons are the most significant for determining chemical behavior.

5. Ionization Energy

Ionization energy is the energy required to remove an electron from an atom. The periodic table shows the periodic behavior of ionization energy, which is plotted in Figure 2.

Figure 2: Periodic Behavior of Ionization Energy

- Ionization energy generally increases from left to right across a period.
- Ionization energy generally decreases from top to bottom down a group.

6. Atomic Radius

Atomic radius is the distance from the nucleus to the outermost shell of an atom. The periodic table shows the periodic behavior of atomic radius, which is plotted in Figure 3.

Figure 3: Periodic Behavior of Atomic Radius

- Atomic radius generally decreases from left to right across a period.
- Atomic radius generally increases from top to bottom down a group.

7. Electron Configuration

Electron configuration is the arrangement of electrons in the atomic shell. Electron configurations can be used to predict chemical behavior.

8. Chemical Properties

Chemical properties are the characteristics of an element that determine its reactivity. The periodic table shows the periodic behavior of chemical properties, which is plotted in Figure 4.

Figure 4: Periodic Behavior of Chemical Properties

- Chemical properties generally increase from left to right across a period.
- Chemical properties generally decrease from top to bottom down a group.

9. Periodic Table Overview

The periodic table is a chart that organizes the elements of the universe. The periodic table is arranged in rows called periods and columns called groups. The elements in the periodic table are arranged in order of increasing atomic number.

10. Elements in the Periodic Table

The periodic table includes all elements, from hydrogen to uranium. The periodic table is a valuable resource for chemists and scientists.

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