

3-3 Review and Reinforcement

Modern Atomic Theory

Complete the following table.

	Subatomic Particle	Location	Charge	Mass (amu)
1.		inside nucleus	1+	
2.	neutron			1
3.			1-	0

If the statement is true, write "true." If it is false, change the underlined word or words to make the statement true. Write your answer on the line provided.

- _____ 4. Moseley discovered that all atoms of an element have the same number of neutrons in their nuclei.
- _____ 5. In an individual, neutral atom, the number of protons always equals the number of electrons.
- _____ 6. When an atom loses or gains one or more electrons, it is called an ion.
- _____ 7. The average mass of an element's atoms is called the atomic number.
- _____ 8. 1 atomic mass unit (amu) is equal to one twelfth of the mass of a carbon-12 atom.
- _____ 9. Atoms with the same number of protons but different numbers of electrons are called isotopes.

Answer each of the following questions in the space provided.

10. How do two isotopes of oxygen, oxygen-16 and oxygen-18, differ from each other in structure? Does this difference affect the chemical properties of these two atoms?

11. How can you calculate the net charge of an ion if you know the number of protons, neutrons, and electrons it contains?

3-3 Review and Reinforcement (continued)

Use the periodic table to determine how many protons, neutrons, and electrons are present in each of the following atoms. Write your answers in the spaces provided.

Atom	Protons	Neutrons	Electrons
12. iodine-125	_____	_____	_____
13. potassium-39	_____	_____	_____
14. iron-56	_____	_____	_____

Write the chemical symbol for each of the ions described below.

- _____ 15. 17 protons and 18 electrons
 _____ 16. 3 protons and 2 electrons
 _____ 17. 12 protons and 10 electrons
 _____ 18. 8 protons and 10 electrons

Use the periodic table to determine the number of protons and electrons in each of the following ions. Write your answers in the spaces provided.

Ion	Protons	Electrons
19. Cu^{2+}	_____	_____
20. F^-	_____	_____
21. H^+	_____	_____
22. Na^+	_____	_____