

SECTION

2

Study Guide

How Elements Bond

Chapter

1

Directions: Correctly complete the following paragraphs using terms from the list below. Some terms may not be used, and some terms may be used more than once.

electrons	losing	positive	covalent
molecules	protons	gaining	negative
random	gains	neutral	ionic
nonpolar	ions	loses	sharing

Elements in Group 1 become more stable by 1. _____ an electron. These elements form 2. _____ ions because they have more 3. _____ than 4. _____. Chlorine readily 5. _____ an electron, forming a 6. _____ ion. The attraction between sodium ions and chlorine ions forms 7. _____ bonds. In sodium chloride, the ions are lined up in a 8. _____ pattern.

Unlike sodium and chlorine, some atoms become more stable by sharing 9. _____, forming 10. _____ rather than charged 11. _____. The bonds in a molecule of oxygen are 12. _____ 13. _____ bonds, while the bonds in a molecule of water are 14. _____ 15. _____ bonds.

Directions: Next to each formula, write the number of atoms of each element found in one unit of the compound.

16. potassium iodide, KI _____
17. sodium sulfide, Na₂S _____
18. silicon dioxide, SiO₂ _____
19. carbonic acid, H₂CO₃ _____

Directions: Complete the following activity.

20. Hydrogen combines with sulfur much like hydrogen combines with oxygen. Draw an electron dot diagram showing hydrogen combined with sulfur and write the chemical formula below.

SECTION



Reinforcement

How Elements Bond

Directions: Correctly complete the following paragraphs using terms from the list below. Some terms may not be used, and some terms may be used more than once.

electrons	losing	positive	covalent
molecules	protons	gaining	negative
random	gains	regular	ionic
nonpolar	ions	polar	sharing
	neutral		
	loses		

Elements in Group 1 become more stable by 1. _____ an electron. These elements form 2. _____ ions because they have more 3. _____ than 4. _____. Chlorine readily 5. _____ an electron, forming a 6. _____ ion. The attraction between sodium ions and chlorine ions forms 7. _____ bonds. In sodium chloride, the ions are lined up in a 8. _____ pattern.

Unlike sodium and chlorine, some atoms become more stable by sharing 9. _____, forming 10. _____ rather than charged 11. _____. The bonds in a molecule of oxygen are 12. _____ 13. _____ bonds, while the bonds in a molecule of water are 14. _____ 15. _____ bonds.

Directions: Next to each formula, write the number of atoms of each element found in one unit of the compound.

16. potassium iodide, KI _____
17. sodium sulfide, Na₂S _____
18. silicon dioxide, SiO₂ _____
19. carbonic acid, H₂CO₃ _____

Directions: Complete the following activity.

20. Hydrogen combines with sulfur much like hydrogen combines with oxygen. Draw an electron dot diagram showing hydrogen combined with sulfur and write the chemical formula below.