

3. a. P_4O_{10}
four phosphorus, ten oxygen, a total of
 $4 + 10 = 14$ atoms;
tetraphosphorus decoxide
- b. S_2O_7
two sulfur, seven oxygen, a total of $2 + 7 = 9$
atoms; disulfur heptoxide
- c. Si_3H_8
three silicon, eight hydrogen, a total of
 $3 + 8 = 11$ atoms;
trisilicon octahydride
4. a. tetrasulfur dinitride
b. dichlorine monoxide

Math Skills Transparency 10 – Determining Electronegativity Difference and Percent Ionic Character

1. a. $3.16 - 0.93 = 2.23$
b. $2.58 - 1.31 = 1.27$
c. $2.19 - 1.61 = 0.58$
d. $3.16 - 1.90 = 1.26$
e. $2.58 - 1.90 = 0.68$
2. Na and Cl only
3. Percent ionic character and electronegativity
difference; as electronegativity difference
increases, percent ionic character increases.
4. a. 70% b. 32% c. 10% d. 32% e. 12%
5. % ionic character + % covalent character =
100%
6. a. $100\% - 70\% = 30\%$
b. $100\% - 32\% = 68\%$
c. $100\% - 10\% = 90\%$
d. $100\% - 32\% = 68\%$
e. $100\% - 12\% = 88\%$

Study Guide - Chapter 8 – Covalent Bonding

Section 8.1 The Covalent Bond

- covalent bond
- exothermic
- molecule

- sigma bond
- pi bond
- b
- d
- c
- a

Section 8.2 Naming Molecules

- false
- false
- false
- true
- true
- true
- false
- false
- c
- i
- g
- e
- b
- d
- f
- a
- h

Section 8.3 Molecular Structures

- true
- false
- true
- false
- false
- false
- true
- true
- true
- false
- true
- false
- c

14. b

15. d

16. a

Section 8.4 Molecular Shape

1. a

2. c

3. d

4. a

5. d

6. c

7. hybridization

8. identical

9. carbon

10. sp^3

11. methane

Section 8.5 Electronegativity and Polarity

1. the tendency of an atom to attract electrons

2. fluorine; 3.98; halogens; group 17

3. francium; 0.7; alkali metals; group 1

4. Electronegativity tends to decrease.
Electronegativity tends to increase.

5. The values are subtracted.

6. true

7. false

8. c

9. d

10. b

11. a

12. c

13. b

14. b

15. d

16. b

17. d

Chapter Assessment - Chapter 8

Reviewing Vocabulary

1. g

2. i

3. k

4. b

5. n

6. h

7. j

8. f

9. a

10. m

11. l

12. d

13. c

14. e

Understanding Main Ideas (Part A)

1. a

2. d

3. b

4. a

5. d

6. c

7. c

8. di-

9. true

10. true

11. true

12. true

13. less

14. electrons

Understanding Main Ideas (Part B)

1. $1s^2 2s^2 2p^2$

2. sp^3 ; four

3. It has no unhybridized orbitals.

4. four other atoms; four single bonds,
each sigma only

5. tetrahedral