

## Unit 7: Bonding, Molecular Geometry, Intermolecular Forces and Classification of Substances

**Assignments designated as “graded” assignments will be collected and scored. Other assignments may be collected at random and graded for effort.**

### Topics and Assignments

- Ionic, covalent and polar covalent bonds

*Assignment #1:* Read p.1-2  
p.5 problems 1-8

- The Octet Rule and Electron Dot Structures

*Assignment #2:* Read p.6  
p.7-9 problems 9-20 (Draw the electron dot structure for each molecule or polyatomic ion.)

- Molecular Geometry

*Assignment #3:* Read p.10-11  
p.12 problems 21-27  
p.7-9 problems 9-20 (Name the geometric shape and draw the diagram for each molecule or polyatomic ion.)

- Polarity

*Assignment #4:* Read p.13  
p.7-9 problems 9-20 (Determine if each molecule is polar or nonpolar.)  
p.14 Problems 28-33

**graded** *Assignment #5:* p.26 problems G1–G6

- Intermolecular Forces

*Assignment #6:* Read Study Guide p.15-18 (top)  
Study Guide p.18 problems 34-39

- Classification of substances as ionic, network covalent, metallic, molecular polar or molecular nonpolar based on composition, structural differences of the solid and the relative strength of attractive forces.

- Characteristic physical properties of melting point, boiling point, heat of fusion, heat of vaporization and vapor pressure; Heating curves and the relationship between strength of attractive forces and these characteristic physical properties

*Assignment 7:* Read p. 19-22  
Read the first four rows of the *Expanded Table for the Classification of Substances*  
p.24-25 problems 40-43

- Solubility and Miscibility; Why “like dissolves like”; The processes of ionic and molecular solvation; Conductivity of solids and solutions

*Assignment 8:* Read p.23

Read the last two rows of the *Expanded Table for the Classification of Substances*

p.25 problems 44-48

### **Homework Answers** (p.43)

### **Labs**

7-1: Molecular Geometry (p.27)

7-2: Classification of Solids (p.31)

### **Practice Test** (p.37)