

Chemistry Unit 3 Outline: Ionic and Covalent Compounds

Chapter 5: Ions and Ionic Compounds

| Classes | Topics | Suggested Reading | ✓ | Assignments | ✓ |
|---------|--|--|---|--|---|
| 1 | Ions, Octet Rule, Chemical Properties of Alkali Metals, Alkaline Earths, Halogens and Noble Gases, Valence Electrons, Bohr Energy Level Diagrams of Ions, Cations versus Anions, Characteristics of Stable Ions, Ionic Equations of the Formation of Ions from Parent Atoms, Electron Configurations of Ions | 5.1 Simple Ions (pg. 159 – 165) | | pg. 165 #1 to 13; pg. 141 #8 and 13 | |
| 2 | Ionic Bonding and Electron Transfer, Lattice Energy, Ionic Compounds Energy Profile for the Formation of Ionic Compounds (Exothermic Reaction), Properties of Ionic Compounds | 5.2 Properties of Ionic Compounds (pg. 166 – 175) | | pg. 175 #1 to 6 | |
| 3 | Monoatomic (Simple) Ions, Polyatomic Ions, Transition Metal Ions (with Roman Numeral – Stock System), Nomenclature of Ionic Compounds, Hydrates | 5.3 Names and Formulas of Ionic Compounds (pg. 176 – 180) | | pg. 180 #1 (Practice); pg. 180 #1 to 8 Worksheet: Nomenclature of Ionic Compounds (can be found in the notes behind Section 5-3) | |
| 4 | Chapter 5 Quiz (A & G Blocks: January 20, Thursday) (F Block: January 21, Friday) | Chapter 5 Review | | pg. 183–184 #1 to 28 Chapter 5 Practice Test | |

Chapter 6: Covalent Compounds

| Classes | Topics | Suggested Reading | ✓ | Assignments | ✓ |
|---------|---|--|---|---|---|
| 1 | Covalent Bond (Sharing Electrons), Molecular Orbital, Covalent (Molecular) Compounds, Bond Length and Bond Energy, Electronegativity and Covalent Bonding, Non-polar and Polar Covalent Bond, Dipole, Bond Strength and Polarity, Different Bond Types (Metallic, Covalent and Ionic) and Ionic Character, Properties of Covalent Compounds | 6.1 Covalent Bonds (pg. 190 – 198) | | pg. 198 #1 to 14 | |
| 2 & 3 | Nomenclature of Covalent Compounds, Valence electrons, Lewis Structures, Unshared Electron Pairs (Lone Pairs), Single Bond, Double Bond, Triple Bond, Lewis Structures of Molecules and Polyatomic Ions, Resonance Structures, Exceptions to Octet Rule | 6.2 Drawing and Naming Molecules (pg. 199 – 207) | | pg. 202 #1 and 2 (Practice) pg. 203 #1 and 2 (Practice) pg. 205 #1 and 2 (Practice) pg. 207 #1 to 13 | |
| 4 & 5 | Molecular Shapes and Geometry, Valence Shell Electron Pair Repulsion (VSEPR) Theory, Effective Electron Pairs and Lone Pairs around Central Atom, Polarity of Molecules due to Shapes, Properties of Molecular Compounds due to Polarities | 6.3 Molecular Shapes (pg. 208 – 213) | | pg. 211 #1 (Practice) pg. 213 #1 to 11 Worksheet: Molecular Geometry and VSEPR Theory | |
| 6 | Lab #3: Molecular Geometry (A Block: January 27, Thursday) (F & G Blocks: January 28, Friday) | | | Lab #3 Due: (February 4, Friday) | |
| 7 | Unit 3 Test (A Blocks: February 2, Thursday) (F & G Block: February 3, Friday) | Chapter 6 Review | | pg. 216 – 218 #11 to 40, 42, 44 to 46, 48 & Chapter 6 Practice Test | |