

## FINAL EXAM STUDY GUIDE

<i>Topic</i>	<i>Text Reference</i>
<b>CHAPTER 9</b>	
<ul style="list-style-type: none"> <li>• Know characteristics of electromagnetic waves, and the relationship of wavelength and frequency</li> </ul>	9.2
<ul style="list-style-type: none"> <li>• Know the order of electromagnetic radiation in the spectrum (Fig. 9.4)</li> </ul>	9.3
<ul style="list-style-type: none"> <li>• Know the Bohr model of the atom and the formation of atomic spectra</li> </ul>	9.4
<ul style="list-style-type: none"> <li>• Know the s, p, d, and f sublevels and the number and location of each</li> </ul>	9.6
<ul style="list-style-type: none"> <li>• Write complete electron configuration for any atom in the first 3 periods</li> </ul>	9.6
<ul style="list-style-type: none"> <li>• Draw orbital diagrams for atoms and determine the number of unpaired electrons</li> </ul>	9.6
<ul style="list-style-type: none"> <li>• Use the periodic table and write abbreviated electron configuration for any atom in the first 6 periods</li> </ul>	9.6
<ul style="list-style-type: none"> <li>• Understand the relationship of period and group numbers to the valence electrons in an atom</li> </ul>	9.7
<ul style="list-style-type: none"> <li>• Identify the location of orbitals on the periodic table</li> </ul>	9.7
<b>CHAPTER 10</b>	
<ul style="list-style-type: none"> <li>• Write Lewis structures for main-group elements or ions</li> </ul>	10.2
<ul style="list-style-type: none"> <li>• Write Lewis structures for ionic compounds</li> </ul>	10.3
<ul style="list-style-type: none"> <li>• Use Lewis model to predict formula for an ionic compound</li> </ul>	10.3
<ul style="list-style-type: none"> <li>• Write Lewis structures for covalent molecules</li> </ul>	10.4, 10.5
<ul style="list-style-type: none"> <li>• Write Lewis structures for polyatomic ions</li> </ul>	10.5
<ul style="list-style-type: none"> <li>• Write resonance structures for molecules that have more than one Lewis structure</li> </ul>	10.6
<ul style="list-style-type: none"> <li>• Predict electron geometry and molecular geometry of molecules using VSEPR model</li> </ul>	10.7
<ul style="list-style-type: none"> <li>• Know the concept of electronegativity and its relationship to bond polarity</li> </ul>	10.8
<ul style="list-style-type: none"> <li>• Rank polarity of bonds based on the difference in electronegativities of the atoms</li> </ul>	10.8
<ul style="list-style-type: none"> <li>• Draw vector diagrams showing dipole moment in a bond</li> </ul>	10.8
<ul style="list-style-type: none"> <li>• Classify bonds as ionic, non-polar covalent, and polar covalent</li> </ul>	10.8
<ul style="list-style-type: none"> <li>• Predict polarity of molecules based on their shapes and polarity of their bonds</li> </ul>	10.8
<b>CHAPTER 11</b>	
<ul style="list-style-type: none"> <li>• Know the factors affecting the behavior of gases</li> </ul>	Notes
<ul style="list-style-type: none"> <li>• Know the postulates of the Kinetic Molecular Theory</li> </ul>	11.2
<ul style="list-style-type: none"> <li>• Know the methods and instruments for measurement of pressure</li> </ul>	11.3
<ul style="list-style-type: none"> <li>• Convert between different units of pressure</li> </ul>	11.3
<ul style="list-style-type: none"> <li>• Use Boyle's Law to solve for pressure or volume of a gas from given data</li> </ul>	11.4
<ul style="list-style-type: none"> <li>• Use Charles's Law to solve for volume or temperature of a gas from given data</li> </ul>	11.5
<ul style="list-style-type: none"> <li>• Determine volume, temp., or pressure of a gas using the Combined Gas Law</li> </ul>	11.6

<i>Topic</i>	<i>Text Reference</i>
<b><u>CHAPTER 11 (cont'd)</u></b>	
• Use Avogadro's Law to solve problems based on volume and moles of a gas	11.7
• Use the Ideal Gas Law to determine pressure or volume of a gas	11.8
• Determine molar mass of a gas using Ideal Gas Law and its mass	11.8
• Use Dalton's Law to calculate total pressure of a gas mixture from the partial pressures of its components	11.9
• Determine partial pressure of a gas mixture from its total pressure and composition	11.9
• Determine properties of a gas under STP conditions	11.10
• Use molar volume of a gas at STP as a conversion factor to solve problems	11.10
<b><u>CHAPTER 13</u></b>	
• Calculate molarity of a solution based on given data	13.6
• Use molarity as a conversion factor to solve for volume of solution or amount of solute	13.6
• Calculate concentration of ions in solution based on molarity of solution and number of ions/formula unit	13.6
• Solve dilution problems from given data	13.7
• Solve stoichiometry problems involving solutions from volume and concentration data	13.8
• Solve titration problems involving acids and bases to determine concentration of unknown substance	13.9