TEST 2 STUDY GUIDE

Topic	*Text Reference*
CHAPTER 4	
• Calculate molar quantities of reactants and products in a balanced chemical equation	4.2
• Calculate mass of a substance from mass of another in a chemical reaction	4.2
• Determine the limiting reactant from given mass of reactants in a chemical reaction	4.3
• Calculate the theoretical and percent yield in a chemical reaction	4.3
• Know the general characteristics of solutions	4.4
• Determine the concentration of solutions as molarity	4.4
• Use molarity as conversion factor to solve for amount or volume of solution	4.4
• Convert between molarity and mass percent of solutions	Notes
• Solve dilution problems	4.4
• Solve stoichiometry problems involving solutions	4.4
• Explain why some solutes dissolve others do not based on solute & solvent attractions	4.5
• Know the difference between strong, weak and non-electrolytes.	4.5
• Use solubility rules in Table 4.1 to predict formation of precipitates.	4.5
• Predict whether a precipitation reaction occurs or not and write molecular equation	4.6
• Write complete and net ionic equations from molecular equations	4.7
• Know the Arrhenius definition of acids and bases	4.8
• Identify strong and weak acids and bases listed in Table 4.2	4.8
• Write molecular and net ionic equations for neutralization reactions.	4.8
• Solve acid-base titration problems using solution stoichiometry	4.8
• Write molecular and net ionic equations for reactions with unstable products.	4.8
• Know the general characteristics of oxidation-reduction (redox) reactions	4.9
• Assign oxidation numbers for elements in a compound.	4.9
• Identify redox reactions from non-redox reactions	4.9
• Determine oxidizing and reducing agents in a redox reaction.	4.9
• Balance redox reactions using oxidation number method	Notes
CHAPTER 5	
• Know the concept of gas pressure and its units of measurement.	5.2
• Determine pressure of gas a barometer and open and closed end manometers.	5.2
• Use Boyle's , Charles's, and Avogadro's Laws to solve problems involving gases	5.3
• Use Ideal Gas Law to determine the volume, pressure, temperature or amount of gas based on given data.	5.4
• Determine gas density and molar mass of a gas using the Ideal Gas Law.	5.5
• Use Dalton's law of partial pressure and mole fraction to calculate partial pressure of gases in a mixture	5.6
• Determine pressure of a gas collected over water	5.6
• Use ideal gas law and molar volume of gases to solve stoichiometry problems with gases	5.7
• Know the postulates of the Kinetic Molecular Theory and how they are related to the simple gas laws and concept of pressure	5.8
• Know the relationship of the molecular speed of a gas to its size and temperature.	5.8
• Distinguish between diffusion and effusion, and use Graham's Law to calculate the rates of different gases.	5.9

Topic	Text Reference
CHAPTER 5 (cont'd)	
• Identify conditions under which real gases deviate from ideal behavior	5.10
• Identify the factors that cause the deviations from ideal behavior	5.10
• Identify the correction factors in Van der Waal's equation for non-ideal behavior of gases	5.10