Chemistry 51

TEST 2 STUDY GUIDE

Topic	*Text Reference*
CHAPTER 3	
• Know the names and symbols of the main-group elements in periods 1-6	3.1
• Know what a period and a group represent in the periodic table	3.2
• Classify elements as metals, non-metals and metalloids	3.2
• Know the common properties of metals, non-metals and metalloids	3.2
• Classify the groups in periodic table by their common names	3.2
• Know the 4 postulates of Dalton's atomic theory	3.3, Notes
• Describe the "cathode-ray tube" experiment and its role in the discovery of electron.	3.3
• Describe the model of atom proposed by J.J. Thomson	Notes
• Describe the "gold foil experiment" and its role in the discovery of the nucleus	3.3
• Describe the model of atom proposed by Ernest Rutherford	3.3
• Identify and characterize the subatomic particles	3.3
• Know the current model of the atom	Notes
• Determine the number of protons, neutrons, and electrons in an atom from atomic and mass numbers	3.4
• Know what an isotope is, and how isotopes of atoms are different	3.5
• Understand the affect of isotope abundance on the average mass of the atom	3.5
• Calculate the average atomic mass from isotopic data	3.5
• Know the Bohr model of the atom and the concept of energy levels	Notes
• Know the s, p, d, and f sublevels and the number and location of each	3.6
• List orbital sublevels according to energy	3.6
• Write complete electron configuration for any atom in the first 3 periods	3.7
• Draw orbital diagrams for atoms and determine the number of unpaired electrons	3.7
• Use the periodic table and write abbreviated electron configuration for any atom in the first 6 periods	3.7
• Know the location of various orbitals on the periodic table	3.7
• Understand the relationship of period and group numbers to the valence electrons in an atom	3.7
CHAPTER 5	
• Know what an ion is and differentiate between a cation and an anion	5.1
• Predict charge of ions formed from any main-group element based on its location in periodic table	5.1
• Differentiate between ionic and molecular (covalent) compounds	Notes
• Characterize properties of ionic bonds	5.2
• Name and write formulas for binary ionic compounds (Types I)	5.3
• Name and write formulas for binary ionic compounds (Type II)	5.3
• Name Type II ionic compounds by the Stock system	5.3
• Name and write formulas for polyatomic ionic compounds	5.4
• Characterize properties of covalent bonds	5.5
• Differentiate and characterize polar and non-polar covalent bonds	Notes
• Name and write formulas for binary covalent compounds	5.6

Topic	***Text Reference***
CHAPTER 5 (Cont'd)	
• Name and write formulas for acids discussed in class	Notes
• Know the concept of electronegativity and its relationship to bond polarity	5.7
• Classify bonds as ionic, polar and non-polar covalent based on ΔEN	5.7, Notes
• Identify properties associated with ionic and covalent compounds	Notes
• Write Lewis structure for atoms and ions	5.5
• Write Lewis structure for simple molecules and those with multiple bonds	5.5
• Predict geometry of molecules using VSEPR model	5.8
• Classify molecules as polar or non-polar	5.8
• Identify and rank the attractive forces in molecules	5.9
• Predict main attractive force in various molecules	5.9