Chemistry 1130 Exam 1 Study Guide

Chapter 1

1.2 Differentiate between chemical and physical properties and changes.

- Master Tutor Section 1.2
- Review Section 1.2 in the Concept Summary
- Review Example 1.1 and Learning Check 1.1
- For practice, do Exercises 1.8, 1.10

1.7 a) Put "regular" numbers into scientific notation and vice versa. b) Multiply and divide numbers using scientific notation.

- Master Tutor Section 1.7
- Review Section 1.7 in the Concept Summary
- Review Examples 1.8-1.11 and Learning Checks 1.9-1.ll
- For practice, do Exercises 1.46, 1.48, 1.54, 1.58, 1.60

1.8 a) Identify the number of significant figures in a measurement. b) Provide answers with the correct number of significant figures when adding or subtracting. c) Provide answers with the correct number of significant figures when multiplying or dividing.

- Master Tutor Section 1.8
- Review Section 1.8 in the Concept Summary
- Review Examples 1.12-1.14 and Learning Checks 1.12-1.15
- For practice, do Exercises 1.62, 1.68, 1.70, 1.72

Chapter 2

2.1 Determine the number and kind of atoms in a compound.

- Master Tutor Section 2.1
- Review Section 2.1 in the Concept Summary
- Review Example 2.1 and Learning Check 2.1
- For practice, do Exercises 2.4, 2.6

2.2 Know properties and locations of protons, neutrons and electrons in an atoms.

- Master Tutor Section 2.2
- Review Section 2.2 in the Concept Summary
- For practice, do Exercise 2.10

2.3 Determine the number of protons, neutrons and electrons in a given isotope. (ie., U-235)

- Master Tutor Section 2.3
- Review Section 2.3 in the Concept Summary
- Review Example 2.2 and Learning Check 2.2
- For practice, do Exercises 2.14, 2.16, 2.18, 2.22

2.4 Using a periodic table, calculate molecular weights.

- Master Tutor Section 2.4
- Review Section 2.4 in the Concept Summary
- Review Example 2.4 and Learning Check 2.4
- For practice, do Exercise 2.30

Chapter 3

3.1 Identify group and period numbers from the periodic table.

- Master Tutor Section 3.1
- Review Section 3.1 in the Concept Summary

- Review Example 3.1 and Learning Check 3.1
- For practice, do Exercises 3.2, 3.4

3.3 a) Know what a valence shell is. b) Determine the number of valence shell electrons an element has from the periodic table.

- Master Tutor Section 3.3
- Review Section 3.3 in the Concept Summary
- Review Examples 3.4, 3.5 and Learning Checks 3.4, 3.5
- For practice, do Exercise 3.18

Chapter 4

4.1 Give Lewis dot structures for representative elements.

- Master Tutor Section 4.1
- Review Section 4.1 in the Concept Summary
- Review Examples 4.2, 4.3 and Learning Checks 4.2, 4.3
- For practice, do Exercise 4.2

4.2 a) Predict the number of electrons an element will gain or lose to obtain an octet. b) Determine the charge on an ion as it gains or loses electrons.

- Master Tutor Section 4.2
- Review Section 4.2 in the Concept Summary
- Review Examples 4.4, 4.5 and Learning Checks 4.4, 4.5
- For practice, do Exercises 4.12, 4.14, 4.16

4.3 Based on charges, determine the correct formulas for simple binary ionic compounds.

- Master Tutor Section 4.3
- Review Section 4.3 in the Concept Summary
- Review Example 4.6 and Learning Check 4.6

- For practice, do Exercises 4.20, 4.22, and 4.24

4.4 Name simple binary ionic compounds, including those where the metal ion could have multiple charges (use Roman numerals).

- Master Tutor Section 4.4
- Review Section 4.4 in the Concept Summary
- Review Examples 4.7, 4.8 and Learning Checks 4.7, 4.8
- For practice, do Exercises 4.26, 4.28, 4.30, 4.32

4.6 a) Identify characteristics of a covalent bond. b) Provide Lewis dot diagrams for a covalent bond. c) Determine if a covalent bond involved single, double or triple bonds.

- Master Tutor Section 4.6
- Review Section 4.6 in the Concept Summary
- Review Examples 4.10, 4.11 and Learning Checks 4.10, 4.11
- For practice, do Exercise 4.48

Chapter 5

5.1 a) Identify the reactants and products in a chemical reaction. b) Calculate the number of atoms involved in a reaction by multiplying coefficients by subscripts found in compound formulas. c) Balance chemical reactions.

- Master Tutor Section 5.1
- Review Section 5.1 in the Concept Summary
- Review Examples 5.1, 5.2 and Learning Checks 5.1, 5.2
- For practice, do Exercises 5.4, 5.8

Chapter 6

6.2 Differentiate between cohesive and disruptive forces.

- Master Tutor Section 6.2

- Review Section 6.2 in the Concept Summary
- For practice, do Exercise 6.8

6.3-6.5 Compare the properties of matter in different states.

- Master Tutor Sections 6.3-6.5
- Review Sections 6.3-6.5 in the Concept Summar
- For practice, do Exercises 6.12, 6.16

6.6 a) Interconvert between oC and Kelvins. b) Interconvert between torr, mm of Hg, and atmospheres (atm) of pressure.

- Master Tutor Section 6.6
- Review Section 6.6 in the Concept Summary
- Review Examples 6.4, 6.5 and Learning Checks 6.4, 6.5
- For practice, do Exercises 6.18, 6.20

6.7 Do calculations involving Boyle's Law, Charles' Law and the combined gas law.

- Master Tutor Section 6.7
- Review Section 6.7 in the Concept Summary
- Review Examples 6.6, 6.7 and Learning Check 6.6
- For practice, do Exercises 6.24, 6.26

6.11 Identify processes involved in changes in the states of matter.

- Master Tutor Section 6.11

- Review Section 6.11 in the Concept Summary
- Review Learning Check 6.11
- For practice, do Exercise 6.64

6.12 Apply the relationship between evaporation and vapor pressure.

- Master Tutor Section 6.12
- Review Section 6.12 in the Concept Summary

6.13 Apply the relationships between boiling point, vapor pressure and atmospheric (external) pressure.

- Master Tutor Section 6.13
- Review Section 6.13 in the Concept Summary

6.14 Identify instances of sublimation.

- Master Tutor Section 6.14
- Review Section 6.14 in the Concept Summary