

Remember all the USUAL stuff about Exams

Bring pencils and your calculator. Go to the right room.

A-M go to WEL 2.224

N-Z go to HMA

PLEASE bubble in your correct name and UTEID and version number. Do that FIRST! Look at our previous exam review sheets for a bigger version of all of this.

Which Chapter/Sections are covered?

All of Chapter 3, although what I emphasized the most. You're STILL responsible for basic nomenclature of ionic compounds. You should know all the material covered on homeworks 05, 06, and 07. Concentrate on the subject matter I emphasized in class and on the homeworks. The main subjects are stoichiometry, IR radiation and its role in global warming, VSEPR Theory, and a few global warming issues themselves. Come in mentally prepared to answer at least 20 questions, maybe a few more.

Definition of Terms

The book is full of terms. These are typically in boldface type and their definitions follow with highlighting. Know these terms. These should be easy multiple choice type questions.

Hold overs from Chapters 1 and 2

Major components of air. How to calculate percentages and/or ppm and ppb. Basic definitions and terms. Still know basic conversion type math problems. Know your metric prefix system and how to apply it. Still know your 3 major zones of the atmosphere. Classification of matter. Still know binary ionic and covalent nomenclature from exam 1. Still must know the whole business on electromagnetic radiation - although we are now focused on the IR portion of it. Still know these equations

$$c = \lambda\nu$$

$$E = h\nu$$

You should still know how to write out a Lewis electron dot formula. KNOW YOUR NOMENCLATURE!!!

VSEPR Theory: Electronic and Molecular Geometries

There is a help sheet on this on our web site. Use it and study it. You are responsible for ALL the geometries when given the number of electron regions and the number of lone-pair electrons. You're responsible for all the names up through 4 regions for any formula that fits. In this case you would write out the Lewis structure and then analyze it and make the appropriate prediction on geometry. Know the angles for each geometry. Know the

whole premise behind the theory (electron regions are repulsive to each other...).

How'd they DO that?

How did scientists get CO₂ concentration and global temperatures from 160,000 years ago? Are these two measurements related? Is there scientific evidence? Compelling evidence?

Infra Red Radiation does WHAT to molecules?

Know what mode of excitation infra-red radiation causes. What kind of molecule cannot absorb infra-red radiation? Check page 132 for that one.

The Role of Carbon Dioxide

Know how CO₂ fits into this whole chapter. What is a greenhouse gas? Are all greenhouse gases about the same in the way they work? What makes one gas worse than another? Is H₂O a greenhouse gas? What is global warming potential (GWP)?

Stoichiometry

Sections 6 and 7 of this chapter are all about stoichiometry. Stoichiometry is all the mass-to-mass, mole-to-mole, and mass-to-mole relationships in chemistry. There is composition stoichiometry and there is reaction stoichiometry. You need to know both and how to calculate for both. Be able to calculate molar mass of a given formula. Be able to calculate percent compositions. Be able to predict amounts of products. Be able to analyze limiting reactant problems. MEMORIZE Avogadro's number. You need that number to calculate how many of something are in a given number of moles of something. That something is usually an atom or molecule but it could be anything.

Again... What is the STORY?

This whole chapter is presented in a way that tries to tell you a story. This time the story is about global warming and the role that CO₂ has in that story. Try to get a basic understanding on the carbon cycle and how there are sources and sinks. What types of human activities affect these sources and sinks? What is the essence of the Kyoto Protocol? It's goals?

Standard Disclaimer

Any mistakes on this review sheet are NOT intentional. You should crosscheck all stated information. You should double check your book too (see errata if necessary).