

**Chapter 2 Questions and Key terms**  
**Chemistry 102** – Basic Principles of Chemistry

**Instructor:** Dr. Joseph Provost

**Suggested Chapter Questions:** 3,7,8,10,13,21,26,29,30,36,42,54,55 In the book  
1-7,12,14 From Quiz I on the web  
4-8,10,12,13,16-18,20 From Quiz I on the web

**Key Terms:**

Ozone	Allotropes	Valence electrons
Atomic structure	Ions	proton
neutron	electron	Atomic number
Mass number	isotopes	Octet rule
isotope	Lewis structure	Lone pair of electron
Single, double and triple bond	Wavelength & frequency	Electromagnetic spectrum
UV A/B/C	CFC - halocarbons	Montreal Protocol

**Key Learning Objectives** – By the end of the chapter you should be able to

- ✓ Relate the origins of Ozone from the troposphere and the stratosphere and understand what good ozone and bad ozone is. You should also know if there really is a different “kind” of ozone.
- ✓ Be able to know the key elements identified at the beginning of the chapter
- ✓ Explain the risks of ozone
- ✓ Understand what Valence electrons are and prepare a lewis structure using that information
- ✓ Know the atomic structure AND be able to predict the numbers of protons, neutrons and electrons in pure elements AND for ions.
- ✓ Be able to use the octet rule to draw structures of molecules
- ✓ Relate the difference between wavelength and frequency for high and low energy electromagnetic waves
- ✓ Relate the various rays in the electromagnetic spectrum in terms of size, energy and potential for interacting with matter such as biological tissue
- ✓ Know what the Chapman cycle is and what it explains (do not bother to memorize it)
- ✓ Understand which UV radiation is harmful to life, where it comes from, what normally stops it and why it isn't being stopped.
- ✓ Know what damage halocarbons (CFC) do to the ozone layer.
- ✓ Be able to explain the chemical nature of chlorine and bromine on Ozone
- ✓ Summarize the impact of the Montreal Protocol
- ✓ Know what Methyl Bromide is, what it is used for and it's impact on the Ozone layer.

**Provost's Bottom Line:** About half of this chapter's focus is on Ozone, UV and how these impact our life. You should be able to discuss these fairly well. BUT you should be able to use the chemistry we discussed to relate these issues, not just your feelings or simply describing what is happening without sufficient detail. You should also be able to look at a periodic table, predict the valence electrons and draw a lewis structure. I will ask questions on lewis structure and on atomic numbers and atomic structure as we practiced in class. There will be at least one question on the test on the Chapman cycle but I will not expect you to draw it out, but you should know what the phases of the cycle are and why this is important.