**What’s On Test #3 – General Chemistry**

Some of you may be wondering what, exactly, is on the test. Now, I’m not going to tell you what questions I’ll be asking, but I *will* tell you the information being covered. If you know the following, you should be A-OK for the test. Note: As I write this, it’s 6:45 in the morning. There’s always the possibility that I’ve forgotten something, so if you see something in your notes that I’ve previously either put on a quiz or indicated is important, you should probably know that, too. However, as of this early hour, this is, to the best of my recollection, what you need to know.

And, just as a reminder, if you want to come get help before school on Monday, please feel free to come in. I’ll be here by 6:45 am.

**Topics on the midterm:**

Quantum mechanics:

* Why was the Bohr model replaced?
* How is the concept of the electron different in the Bohr than quantum mechanics?
* How are orbitals in quantum mechanics different than that in Bohr?
* What are electron configurations, and can you find them?

Periodic table:

* What are the properties and locations on the periodic table of metals, nonmetals, and metalloids?
* How does bonding differ between metals, nonmetals, and metalloids?
* How does bonding in metals, nonmetals, and metalloids affect the properties of each?
* What are families, groups, and periods in the periodic table?
* What are the locations and properties of: alkali metals, alkaline earth metals, transition metals, lanthanides, actinides, noble gases, halogens, hydrogen?
* What is the octet rule, and how does it affect the properties and behavior of elements?
* What is the shielding effect, and how does it affect the properties of periodic trends as you move down a group in the periodic table?
* What is atomic radius, and how does the trend differ going across a period and down a group? Why?
* What is electronegativity, and how does the trend differ going across a period and down a group? Why?
* What is ionization energy, and how does the trend differ going across a period and down a group? Why?
* Explain what multiple ionization energies are and how they work for different elements.

Ionic compounds:

* What is an ionic compound?
* How is an ionic compound formed from the interaction of pure elements?
* What does the octet rule have to do with the formation of ionic compounds?
* What are the general properties of ionic compounds? How is this related to the type of bonding that occurs in ionic compounds? You should be able to explain this for all of the properties we discussed.

Things you should study:

* THE REVIEW SHEET. STUDY THE REVIEW SHEET! YOU’LL BE GLAD YOU DID!
* Old homework assignments
* The PowerPoints I gave you
* The flash cards
* Old quizzes
* Practice problems on my website ([www.chemfiesta.com](http://www.chemfiesta.com/)).
* Any vocabulary or terminology you’ve seen

Ways of studying that might be less useful:

* Questions or practice tests you’ve found online: I write all of my own questions, so you will not find any of the test questions anywhere online (except for maybe my website).
* Finding definitions on Wikipedia or elsewhere: These explanations, while correct, and frequently more complex than you need to explain the concept. By all means, use Wikipedia if it helps you to understand a concept more completely. However, be aware that the explanations may be more confusing than enlightening.
* AI: If you’d like to use AI to explain things for you, you may or may not get a useful answer. There’s a term in AI called “hallucinations” in which an AI will come up with incorrect or misleadings answers to questions asked of them. I’ve found this is often the case. In my mind, there’s nothing unethical about using AI to study, but you may find whatever it tells you to be misleading.