Chapter 4 and 5 Review

1. Discuss and draw the Bohr Model of the atom.

2. Atomic Orbitals

Complete the table

Energy Level	Number of sublevels possible	Type of sublevel(s)	Total number of Electrons Possible
N=1			
N=2			
N=3			
N=4			

3. Electron Configuration – Write the regular and short hand configuration for each element, underline and identify the number of valence electrons.

Calcium

Phosphorous

Zinc

4. What are the three rules for writing electron configuration?

5. Write the definition; give the Greek symbol and units for wavelength and frequency

Wavelength

Frequency

7. a. What is the wavelength of a gamma wave that has the frequency of 3.0×10^{29} Hz?

b. What is the energy of this wave?

8. a. What is the frequency of a radio wave that has a wavelength of 1.04×10^{2}m?

b. What is the energy of this wave?

9. Why are all noble gases inert (unreactive)?

10. What charge do all Alkaline Earth Metals form? Why does this happen? Is this a cation or anion?

11. Name the elements that have the following subshell as their last electron filled subshell.

a. $4s^{2}$ b. $6p^{3}$ c. $4f^{13}$

12. How do you know if an element is a S, P, D or F block element?

13. Rank the following elements 1-4 based on largest atomic radius.

Arsenic Nitrogen Bismuth Fluorine

14. Rank the following elements 1-4 based on having the <u>smallest of ionization energy.</u>

Potassium Rubidium Cesium Lithium

15. Rank the following elements 1-4 based on the having the <u>greatest ionization energy</u>.

Phosphorous Magnesium Argon Chlorine

16. Rank the following elements 1-5 by the most <u>electronegative atom</u>.

Aluminum Boron Fluorine Chlorine Thallium

17. Explain the shielding effect.