Unit 3 Study Guide

Define the following terms:

Electromagnetic Radiation

Photons

Ground State

Quantized

Orbital

Valence Electrons

Bohr Model

Aufbau Principle

Hund’s Rule

Pauli Exclusion Principle

Principal Quantum Number

Angular Quantum Number

Magnetic Quantum Number

Spin Quantum Number

Electronegativity

Ionization Energy

Atomic Radius

REVIEW YOUR FLAME TEST LAB!!!!

Remember your units and significant figures for the following calculations!!!

Calculate the wavelength of a wave with frequency of 1.08x1014 Hz

Calculate the frequency of a wave with a wavelength of 9.43x10-7 m

What is the Energy of a wave that has a frequency of 6.75x1018 Hz?

What is the energy of a wave with a wavelength of 630 nm?

What is the wavelength and frequency of a wave with an energy of 2.73x10-19 J?

Write the Electron configuration for the following:

Cl

Sc

Write the noble gas configuration for the following:

Os

Zr

Show the orbital filling notation for the following elements (show all full orbitals)

Si

Mg

Which element in group 6A would have the highest electronegativity?

Which element in period 6 would have the highest electronegativity?

Which element in group 5A would have the lowest ionization energy?

Which element in period 5 would have the lowest ionization energy?

Which element in group 3 would have the largest atomic radius?

Which element in period 3 would have the largest atomic radius?

Rank the following in order from highest to lowest in terms of Electronegativity:

In, Tl, Ga, B Ba, Pb, Pt, Re

Rank the following in order from lowest to highest Ionization energy:

Sb, Pb, Cl, Se V, Ra, Z, La

Rank the following in order from highest to lowest atomic radius:

In, Tl, Ga, B Ba, Pb, Pt, Re

Rank the following in order from highest to lowest reactivity:

Nb, Cr, Ac, Hf At, F, Cl, I

Identify the periodic trends for the following:

Electronegativity

Ionization Energy

Atomic Radius

Reactivity (different for metals and nonmetals)