Quiz Review – Unit 2

Students should be able to:

1. Describe the location and charge of the proton, neutron and electron.
2. Define atomic number, mass number, nucleus, atom, molecule, isotope, and ion.
3. Find the atomic number, mass number of most abundant isotope, number of electrons, number of protons, and number of neutrons of an atom or ion (when given a periodic table)
4. Differentiate between cations and anions. Write symbols for cations and anions.
5. Describe the organization of the periodic table with respect to groups and periods.
6. Tell what valence electrons are. Be able to predict how many valence electrons an element has based on its position on the periodic table.
7. Give the names and locations of the families of the periodic table (alkali metals, alkaline earth metals, transitions metals, metalloids, halogens, and noble gases.
8. Use a periodic table to predict the number of valence electrons in an atom and the charge an ion of that atom.
9. Describe the atomic models of Dalton, Thomson, Rutherford, and Bohr.
10. Discuss the parts of Dalton’s theory that are not true today.
11. Describe Thomson’s cathode ray tube experiment. What subatomic particle did he discover?
12. Describe Rutherford’s gold foil experiment and explain how it advanced the atomic model.
13. Define average atomic mass. Be able to solve for the average atomic mass when given the masses of the isotopes as well as the percent abundance.
14. Write formulas for compounds that contain ions.
15. Know the key terms from Ch. 4 (page 101).
16. Define electromagnetic radiation and know the types of electromagnetic radiation. List the types of electromagnetic radiation from low energy to high energy.

16. Explain the characteristics of waves: wavelength, frequency, and energy. Know the symbol and

name of the symbol which represents wavelength, frequency and energy.

17. Describe the relationship between wavelength, frequency and energy using c =  and E = h****

\*\*\* Look over and study all notes, homework assignments, worksheets from this unit!!\*\*\*

Practice for the quiz.

1. Use a periodic table to complete the following chart.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Chemical symbol  (isotope format) | Number of  Protons | Number of  Electrons | Number of  Neutrons | m Mass  Nu Number |
| 131 I- |  |  |  |  |
|  | 55 | 55 |  |  |
| 88Sr+2 |  |  |  |  |

1. Samples of an unknown element X were collected and the following data was collected. Use the information presented in the data table to answer the following questions.

|  |  |  |
| --- | --- | --- |
| Isotope X | Atomic Mass of Isotope | Percent abundance |
| X – 38 | 37.910 | 9.67% |
| X – 39 | 39.100 | 78.68% |
| X – 40 | 40.001 | 11.34% |
| X – 41 | 41.200 | 0.31% |

1. What is the most common isotope of element X?
2. Calculate the average atomic mass of element X. Show your work.
3. Use your periodic table to identify element X based on its average atomic mass. (What is the closest element to your calculated average?)
4. What is the atomic number of this element?

3. A. What is the formula for the compound made of calcium and phosphorus? Name?

B. What is the formula for the compound made of silver and oxygen? Name?

C. What is the formula for the compound made of copper(II) and chlorine? Name?

D. What is the formula for the compound made of copper(I) and chlorine? Name?

E. What is the formula for the compound made of aluminum and sulfur? Name?