

Science 10 – Chemistry Review for Test #2

1. What is the difference between:
 - a. Ionic, Polyatomic, and Molecular Compounds
 - i. **Ionic – metal and a non-metal**
 - ii. **Polyatomic – metal and a group of non-metals**
 - iii. **Molecular – all non-metals that share electrons**
 - b. Polyatomic Ion and Polyatomic Compound
 - i. **Polyatomic ions carry an overall charge while the compounds groups that charge with a metal to give an overall charge of zero**
 - c. Electron, Neutron and Proton
 - i. **Electrons are outside the nucleus and have a negative charge while protons have a positive charge and are inside the nucleus with neutrons**
 - d. Skeleton equation and a word equation
 - i. **A skeleton equation is the symbols which are universal because they are in latin. Word equations are the letters which can change from language to language.**

2. Complete the following table below:

Element	Atomic Mass	Atomic Number	Protons	Neutrons	Electrons
<i>silicon</i>	<i>28</i>	14	<i>14</i>	<i>14</i>	<i>14</i>
<i>bromine</i>	80	<i>35</i>	<i>35</i>	<i>45</i>	<i>35</i>
hydrogen	<i>1</i>	<i>1</i>	<i>1</i>	<i>0</i>	<i>1</i>
<i>nitrogen</i>	<i>14</i>	<i>7</i>	<i>7</i>	<i>7</i>	<i>7</i>
<i>scandium</i>	<i>45</i>	<i>21</i>	<i>21</i>	24	<i>21</i>
<i>Nickel</i>	<i>57</i>	<i>28</i>	<i>28</i>	<i>29</i>	28

3. Answer the following questions. If the symbols are given, find the name. If the name is given, find the chemical formula.
 - a. IONIC COMPOUND
 - i. LiF ***lithium fluoride***
 - ii. calcium nitride ***Ca₃N₂***
 - iii. nickel (III) phosphide ***NiP***
 - iv. HgBr₂ ***mercury(II) bromide***
 - v. hydrogen chloride ***HCl***
 - vi. tin (IV) oxide ***SnO₂***

- vii. sodium phosphide Na_3P
- viii. Sc_2S_3 *scandium sulfide*
- ix. mercury(I) bromide HgBr
- x. barium nitride Ba_3N_2

b. POLYATOMIC COMPOUND

- i. BeSO_4 *beryllium sulfate*
- ii. potassium chlorate KClO_3
- iii. magnesium hydroxide Mg(OH)_2
- iv. $\text{Ba(NO}_3)_2$ *barium nitrate*
- v. calcium silicate CaSiO_3
- vi. hydrogen nitrate HNO_3
- vii. tin (II) sulfite SnSO_3
- viii. LiOH *lithium hydroxide*
- ix. $\text{Ni}_2(\text{SO}_3)_3$ *nickel(III) sulfite*
- x. sodium oxalate NaOOC COO

c. MOLECULAR COMPOUNDS

- i. C_3H_6 *tricarbon hexahydride*
- ii. NO_2 *nitrogen dioxide*
- iii. tetranitrogen heptaoxide N_4O_7
- iv. dicarbon pentaoxide C_2O_5
- v. P_4Cl *tetraphosphorus chloride*
- vi. octacarbon nonobromide C_8Br_9
- vii. decanitrogen pentaiodide N_{10}O_4
- viii. dihydrogen monoxide H_2O
- ix. heptaselenium dichloride Se_7Cl_2
- x. S_2Br_3 *disulfur tribromide*

4. What is the Law of Conservation of mass?

- *The mass of the reactants equals the mass of the products*

5. Give an example of each of the following terms
- Subscript - *lower case number after a symbol (ie H₂)*
 - Coefficient - *large number in front of a symbol (ie 3H)*
 - Word equation - *sugar + oxygen → carbon dioxide + water*
 - Skeleton equation - *KClO₃ → KCl + O₃*
6. There are several questions involving balancing chemical equations that I have given out before as handouts. Use those as practice. The answers have been posted for the first set of balancing equation problems.

Make sure to complete the balancing equation worksheet that was double-sided. It is worth marks!