**Science 10: Chemistry Unit Exam Review**

**Review Questions:**

1. What is the atomic number for Cobalt?
2. Which element has the atomic number 36?
3. Complete the table.

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| **Element** | **Symbol** | **Atomic Number** | **Atomic Mass** | **Number of Protons** | **Number of Neutrons** | **Number of Electrons** |
| Magnesium |  |  |  |  |  |  |
|  |  |  | 52 |  |  |  |

1. Which element is in group 11, period 5?
2. Draw an electron shell diagram (Bohr Diagram) for Calcium.
3. Draw an electron dot diagram (Lewis Structure) for Phosphorus.
4. What is the valence shell? Where is it located?
5. What is the maximum number of electrons for the first two electron shells?
6. Give the names of groups 1, 2, 3-12, 17, 18
7. On the periodic table, where are the metals? The non-metals?
8. What is an anion? What is a cation?
9. How does a neutral atom become an anion? A cation?
10. Complete the table.

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| **Ion** | **Symbol** | **Number of Protons** | **Number of Electrons** | **Lost or Gained** | **Anion or Cation** |
| Potassium |  |  |  |  |  |
| Sulphur |  |  |  |  |  |

1. Draw the formation of the ionic compound that will form between Na and N using Lewis Structures.
2. Name the following ionic compounds (don’t forget the special rules for transition metals):
3. NaBr
4. Al2(CO3)3
5. FeO
6. Write the formula for the following ionic compounds:
7. chromium (III) nitrate
8. sodium iodide
9. iron (III) sulphite
10. What is the difference between an ionic compound and a molecular compound?
11. Name the following covalent compounds:
12. ClO2
13. N2O
14. P2O5
15. Write the formula for the following covalent compounds:
16. phosphorous pentachloride
17. carbon tetrachloride
18. dihydrogen monoxide
19. What is a diatomic molecule?
20. Decide if the following compounds are ionic or covalent and name them/ write their formulas correctly.

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| Aluminum iodide  |  | Pb3P2 |  |
| Copper (II) sulfate  |  | CF4 |  |
| Diiodine heptoxide  |  | NO2 |  |
| Potasssium nitrate  |  | BeF2 |  |
| Nitrogen monoxide |  |  |  |

1. Draw the formation of the compound carbon tetrachloride using Lewis structures.
2. Distinguish between an acid and a base (their characteristics).
3. Explain how to name the 2 different types of acids (i.e. HBr (aq)  vs. H2SO3(aq)).
4. Explain the acid/base indicators used during class.
5. On the pH scale, where is a base? An acid? A neutral substance?
6. In the formula 4Cu(NO3)2, how many atoms of each element are there?
7. Balance the following equations and identify the reaction type:
8. \_\_Al + \_\_H2SO4 → \_\_H2 + \_\_Al2(SO4)3
9. \_\_FeCl3 +\_\_KOH → \_\_KCl + \_\_Fe(OH)3
10. Sodium chloride breaks into sodium and chlorine.
11. Gasoline (C8H18) is burned in the presence of oxygen to form water and carbon dioxide.
12. Carbonic acid reacts with calcium hydroxide (find the products after identifying the reaction type)