Chapter 10 Test Review

1. Review: What is the formula for density? Give examples of various units that could be used in this formula.
2. Review: List all 5 polyatomic ions discussed in class, and their charges.
3. Review: An ionic bond is between a \_\_\_\_\_\_ and a \_\_\_\_\_\_. A covalent bond is between a \_\_\_\_\_ and a \_\_\_\_\_\_.
4. What is Avogadro’s number? What are the four major units that are associated with it? Explain when each unit is used.
5. When finding volume, what conditions must you check of the substance you are working with. If these specific conditions are met, what is the volume? Include correct units.
6. Name the following ionic compounds, and find their masses: CaCO3, Zn(NO3)3, MgCl2, CuSO4
7. Find the formulas for the following ionic compounds, and find their masses: Iron (III) Oxide, Lithium Phosphate, Cobalt (II) Hydroxide, Aluminum oxide
8. Name the following covalent compounds, and find their masses: H2O, PCl3, SO3, P2H8
9. When going from grams into molecules. What is the pathway you take?
10. When going from grams into liters, what is the pathway you take?
11. When going from molecules into grams, what is the pathway you take?
12. You are given 9.0 grams of dihydrogen monoxide at STP.
    1. Find the amount of molecules in your sample.
    2. Find the volume of your sample, in milliliters.
    3. Find the density of your sample, in g/mL.
13. You are given 8.0x1024 formula units of cobalt (II) hydroxide.
    1. Find the mass of your sample.
    2. Find the volume of your sample, in liters, if 1 mole of your substance is 25.0 L.
    3. Find the density of your sample, in g/L.
14. Find the percent composition for the following:
    1. Fe2O3
    2. CH4
    3. Sodium Carbonate
    4. Dinitrogen monoxide
15. You are given a 120. gram sample of Fe2O3. How much of your sample is Iron (use your answer for #14A)?
16. You are given a 46.5 gram sample of sodium carbonate. How much of your sample is carbon?
17. A sample contains material with the empirical formula of CHO and a molar mass be approximately 145 grams. Determine the molecular formula of this compound.
18. You have a sample of a substance that is 40.00% C, 6.713% H and the remaining percentage is O. Find the empirical formula of this compound. Additionally find the empirical mass of this compound.
19. You have a sample of a substance that is 7.10 grams of Cl, 2.40 grams of C and 0.603 grams of H. Determine the empirical formula and empirical mass of this compound.
20. What is a hydrate? How does it differ from an anhydrate?
21. Identify and find the masses of the following: Iron (III) Nitrate Pentahydrate, Calcium Sulfate Dihydrate, Copper (II) Sulfate Hexahydrate, Magnesium Chloride Heptahydrate
22. Find the Water percent compositions of the hydrates in #21. (Remember, H2O = \_\_\_\_\_\_\_\_g)