CHEM Review Problems

Units 1-7

1. **If you measured the volume of 13.4 ml of a solution, and the actual volume was 14.5 ml, what was your percent error?**
2. **If the doctor measured your weight to be 189.9 Kg, when it is actually 195 Kg, what was his percent error?**
3. **If you calculated the density of a rock to 125.6 g/ml, when the actual density was 150.2 g/ml, what was your percent error?**
4. **If an object had a mass of 25 g and a volume of 5.69 ml, what is it’s density?**
5. **If an object had a volume of 30 ml and a mass of 78 g, what would the density be?**
6. **If an object had a density of 10.78 g/ml and a mass of 45 g, what is the volume?**

Metric Conversions

1. **100 g = \_\_\_\_ Kg 7.375 Km = \_\_\_ m**
2. **.0001 L = \_\_\_\_ ml 2,500,000 cm = \_\_m**
3. **55,070 Hm = \_\_\_ mm 5,500 cg = \_\_\_\_\_ g**
4. **1,000 g = \_\_\_\_Kg 10.7 Kl = \_\_\_\_\_ ml**
5. **60g = \_\_\_\_ dg**

1. **% Comp. Of F in LiF?**
2. **% comp. Of C in CO?**
3. **% comp. Of O in Mg(NO3)2?**

**15.) % comp. Of Na in sodium oxide?**

Balance

1. PCl5 + H2O🡪 HCl + H3PO4
2. H2S + Cl2🡪 S8 + HCl
3. Fe + H2O🡪 Fe3O4  + H2
4. Li2O + H2O🡪 LiOH
5. CaCl2  + H2O🡪 HCl +Ca(OH)2

Ion Exchange

1. **Barium Acetate + Nitrogen🡪**
2. **Thallium Telluride + Phosphate🡪**
3. **Cesium Sulfide + Hydrogen🡪**
4. **Gallium + Aluminum Sulfate 🡪**
5. **Manganese (III) Arsenide + Sulfate🡪**

**Mole Conversions**

1. **Convert 25 g of sodium to moles.**
2. **How many grams are in 3.5 moles of magnesium sulfide?**
3. **How many moles are in 8.6 g of sodium hydroxide?**

**Limiting Reactant**

1. **If 100.5 L of oxygen gas reacted with 110.6 L of Hydrogen gas, which would be the limiting reactant?**
2. **If 15.5 g of magnesium sulfide reacted with 15 ml of 8.9 M H2SO4, which would be the limiting reactant?**
3. **If 25 ml of a 2.5 M aluminum hydroxide solution reacted with 37.56 ml of 1.7 M ammonium nitrate, which is the limiting reactant?**