Chemistry I – Molecular Formula of Hydrates Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Analysis of calcium sulfate (CaSO4) hydrate, gypsum, revealed it contained 20.93 % water. Calculate the simplest formula of the hydrate.
2. Washing soda, Na2CO3, is actually a hydrate that is composed of 62.93% water. What is the correct empirical formula for washing soda?
3. What is the formula for a hydrate that is 90.7% SrC2O4 and 9.30% H2O?
4. What is the formula for a hydrate that is 433.5 grams of Mo2S5 and 66.5 grams of H2O?
5. A 20g sample of a hydrate of nickel sulfate (NiSO4) lost 9.63g of water when heated. Determine the hydrate’s formula.
6. When a 1.000 g sample of Copper Sulfate (CuSO4) Hydrate was heated so that the waters of hydration were driven off, the mass of the anhydrous salt remaining was found to be 0.6390 g. What is the hydrate’s formula?
7. A 50.0 g sample of Ba(OH)2 Hydrate contains 27.2 g of barium hydroxide. Find the hydrate’s formula.
8. When a 5.0 gram sample of Cu(NO3)2 Hydrate is heated, 3.9 grams of the anhydrous salt remains. What is the hydrate’s formula?
9. A hydrate of sodium sulfite, (Na2SO3) Hydrate, contains almost exactly 50% water by mass. What is the hydrate’s formula?
10. The hydrate of MnSO4 had a mass of 2.99 g before heating and 2.02 g after heating. What is the hydrate’s formula?