Conceptual chem due May 3 2020

Name _____ Date _____ Class _____

CHAPTER 10 STUDY GUIDE

Section 10.5 The Formula for a Hydrate

In your textbook, read about naming and analyzing hydrates.

Use each of the terms below just once to complete the passage.

anhydrous	crystal structure	desiccants	formula unit
hydrate	hydration	water molecules	water of hydration

A(n) **(1)**_____ is a compound that has a specific number of water molecules bound to its atoms. Molecules of water that become part of a hydrate are called waters of **(2)**_____. In the formula for a hydrate, the number of **(3)**_____ associated with each **(4)**_____ of the compound is written following a dot.

The substance remaining after a hydrate has been heated and its waters of hydration released is called **(5)**_____. The ratio of the number of moles of **(6)**_____ to one mole of the anhydrous compound indicates the coefficient of H_2O that follows the dot in the formula of the hydrate. Because the anhydrous form of the hydrate can absorb water into its **(7)**_____, hydrates are used as **(8)**_____, which are drying agents.

Complete the table of hydrates.

Chemical Formula	Name
$CdSO_4$	Cadmium sulfate, anhydrous
$CdSO_4 \cdot H_2O$	**9.**
10.	Cadmium sulfate tetrahydrate

Solve the following problem. Show your work in the space provided.

11. A 2.00-g sample of a hydrate of iron(II) chloride produces 1.27 g of anhydrous iron(II) chloride ($FeCl_2$) after heating. Determine the empirical formula and the name of the hydrate.