**Names \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 09/14/22**

**CH 111 Workshop 2 – Chapter 3**

1. Indigo, the dye for blue jeans, has a percent composition, by mass, of 73.27% C, 3.84% H, 10.68% N, and the remainder is oxygen. Its formula mass is 262.3 u. What is the molecular formula of indigo?

Accordingly, the empirical formula is and the molar mass of the empirical formula is 131.13 g/mol

1. How many grams of fluorine are present in a 5.23-gallon sample of 0.65 M calcium fluoride?
2. A 225 mL portion of a 1.75 M solution is diluted to a total volume of 1.50 L. A 750.0 mL portion of the new solution is diluted by adding 1.00 L of water. What is the final concentration? Assume the volumes are additive.
3. A single dose the of the hallucinogenic drug lysergic acid diethylamide (LSD) may be as small as 40.0 g. The molecular formula of LSD is . How many hydrogen atoms are in 40.0 g of LSD?
4. Acetone, , is an organic solvent used in fingernail polish remover. If 60.0 mL of liquid acetone has a density of 0.7845 g/mL, how many molecules of acetone are in this 60.0 mL solution?
5. If 1.54 tons of the strong electrolyte iron(III) perchlorate is placed into enough water to make 3719 gallons of solution, what will be the molarity of the perchlorate ion in the water?