**Homework #7 Chemistry 1013 (Fong) due Friday 10 Nov 2017 24 pts (in class)**

**Your name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

2a) A sweet-tasting white powder contains 20.00 g C, 3.333 g H and 26.665 g O.

What is the powder’s empiric formula ? (2 pts)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Element** | **Mass (g)** | **Atomic mass (g/mol)** |  |  |
| **C** | **20.000** | **12** |  |  |
| **H** | **3.333** | **1** |  |  |
| **0** | **26.665** | **16** |  |  |

Empiric formula = C H O

2b. The actual molecular mass of the compound above is 360 g/mol. What is the molecular formula ?

formula = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (2 pts)

2. Use the Lewis octet rule to draw the best structures for: (2 pts each)

(Make sure all lone pairs are shown !!)

a) CO

b) SO2 (S in middle, 2 O connected just to S)

c) SO3 (S in mikddle, 3 O connected to just S)

d) COF2 (C in middle; O and 2 F connected just to C)

e) NO3- (nitrate ion with negative charge; N connects to each O separately)

3) For your CO, SO2, SO3 and NO3- structures, indicate the formal charges on

each atom in the molecule (2 pts for each molecule)