Quiz 5A

1. What substance will be combusted during this week’s experiment (2 points)?

In Estimating the Caloric Content of Peanuts, a peanut is combusted.

1. A compound containing only sulfur and nitrogen is 69.6% S by mass; the molar mass is 184 g/mol. (Note write the S first then the N) (10 points)
   1. What is the empirical formula?
   2. What is the molecular formula?

Molecular formula = (SN)4 = S4N4

* 1. Name the compound using its molecular formula. Tetrasulfur tetranitride

1. Stearic acid, C18H36O2, is a principle component of saturated fat (8 points).
   1. Calculate the molar mass of stearic acid.

C: (12.011 g/mol)18 = 216.198 g/mol

H: (1.008 g/mol)36 = 36.288 g/mol

O: (15.999 g/mol)2 = 31.998 g/mol

= 284.484 g/mol ≈ 284.48 g/mol

* 1. Calculate the percent carbon in stearic acid.
  2. How many moles of hydrogen are in 0.2415 moles of stearic acid?
  3. How many molecules of stearic acid are in 2.45 g?

Quiz 5B

1. Stearic acid, C18H36O2, is a principle component of saturated fat (8 points).
   1. Calculate the molar mass of stearic acid.

C: (12.011 g/mol)18 = 216.198 g/mol

H: (1.008 g/mol)36 = 36.288 g/mol

O: (15.999 g/mol)2 = 31.998 g/mol

= 284.484 g/mol ≈ 284.48 g/mol

* 1. Calculate the percent hydrogen in stearic acid.
  2. How many moles of carbon are in 0.2415 moles of stearic acid?
  3. How many grams of stearic acid are in 2.33 x 1021 molecules?

1. A compound containing only sulfur and nitrogen is 30.4% N by mass; the molar mass is 184 g/mol. (Note write the S first then the N) (10 points)
   1. What is the empirical formula?
   2. What is the molecular formula?

Molecular formula = (SN)4 = S4N4

* 1. Name the compound using its molecular formula. Tetrasulfur tetranitride

1. What substance will be combusted during this week’s experiment (2 points)?

In Estimating the Caloric Content of Peanuts, a peanut is combusted.