**Mini-quiz #16 Chemistry 1114 Wednesday 10 October 2012 A**

 **6 pts**

Your name:\_\_\_\_\_\_\_\_\_\_\_\_**answer**s\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Nitroglycerin has the chemical formula: C3H5N3O9. It has a molecular weight of 227 g/mol

Given the following: C=12 g/mol H=1 g/mol N=14 g/mol O=16 g/mol

 1 mole count = 6.02\*1023.

1. How many moles of nitroglycerin are present if a sample of it contains 9 moles of C?

Mol nitro/mol C = 1/3 = x/9 => x=9/3=**3 mol nitro**

1. How many moles of nitroglycerin contain 210 g of N?

210 g N \* 1 mol N/14 g N mol-1 = 15 mol N

Mol nitro/mol N = 1/3 = x/15=> x= 15/3=**5 mol nitro**

1. How many molecules of nitroglycerin are present in a sample containing 432 g of O?

432 g O/16 g mol-1 =27 mol O

Mol nitro/mol O = 1/9 =x/27=> mol nitro = 27/9=3 mol nitro

3 mol nitro \* 6.02\*1023 **~1.8\*1024 molecules nitro**

**Mini-quiz #16 Chemistry 1114 Wednesday 10 October 2012 B**

 **6 pts**

Your name:\_\_\_\_\_\_answers\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Heroin has the chemical formula **C21H23NO5**. It has a molecular weight of 369 g/mol

Given the following: C=12 g/mol H=1 g/mol N=14 g/mol O=16 g/mol

 1 mole count = 6.02\*1023.

1. How many moles of heroin are present if a sample of it contains 63 moles of C ?

Mol heroin/mol C = 1/21 = x/63=> x=mol heroin= 63/21=**3 mol heroin**

1. How many moles of heroin contain 56 grams of N ?

56 g N/14 g N mol-1 = 4 mol N

 Mol heroin/mol N= 1/1=> **mol heroin = 4**

1. How many molecules of heroin are present in a sample containing 132.89 g of O?

132.89 g O/16 g O mol-1 =8.305 mol O

Mol heroin/mol O = 1/5 = x/8.305

x= 8.305/5=1.661 mol heroin => 1.661 mol\*6.02\*1023 molecules/mol~ **1\*1024 molecules heroin**