**Mini-quiz #10 Chemistry 1114 section 2 (Fong) 17 Sept 2014 4 pts A**

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

Show work for all problems…or no credit !

1. Given that octane (C8H18) has a molecular mass of 114 g/mol and 1 mole count=6\*1023:

How many grams of octane are in 3.158\*1022 molecules of octane ?

*3.158\*1022 molecules \* 1 mol/6\*1023 molecules=0.05263 mol octane*

*0.05263 moles \*114 g/mol=6 g*

 \_\_\_6\_\_\_\_ g octane

2. The molecular mass of SO2 is 64 g/mol. Given that 1 mole count =6\*1023, how many molecules of SO2 are in 21.333 g SO2 ?

21.333 g SO2 \*1 mol SO2 /64 g SO2 =0.3333 mol SO2

0.3333 mol SO2 \* 6\*1023 molecules/mol SO2=2\*1023

 2\*1023\_ molecules SO2

**Mini-quiz #9 Chemistry 1114 section 2 (Fong) 17 Sept 2014 4 pts B**

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

Show work for all problems or no credit

1. Given that propane (C3H8) has a molecular mass of 44 g/mol and 1 mole count=6\*1023:

How many molecules of propane are in 22 grams of propane ?

22 g propane\* 1 mol propane/44 g propane = 0.5 moles propane

0.5 moles propane\*6\*1023 molecules/mol =3\*1023 molecules

 \_\_\_3\*1023\_\_\_\_\_\_\_\_molecules propane

2. The molecular mass of NO2 is 46 g/mol. Given that 1 mole count =6\*1023, how many grams of NO2 are in 3.91\*1022 molecules of NO2 ?

3.91\*1022 \* 1 mol/6\*1023 =0.0652 mol NO2

0.0652 mol \* 46 g/mol=3 g

 \_\_\_3\_\_\_\_\_ g NO2