**Chem 1013: mini-quiz # 16: Simple Chemical Body Parts Calculations A 6 pts March 13**

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

Nitroglycerin (‘nitro’) has the formula: C3H5N3O9.Its molecular weight is 227 g/mol.

1) How many moles of nitro can be made from 15 moles of N ?

Mol nitro/mols N= 1/3=x/15

X=15/3=5

\_\_\_5\_\_\_\_\_ moles nitro

2) How many moles of O are in 1/3 mole of nitro ?

Mol O/mol nitro =9/1=x/(1/3)

9\*1/3 =x=3

\_\_\_3\_\_\_\_\_ mol O

3) How many grams of C are in 6.30555 g of nitro ? ( 1 mol of C =12 g)

Mol nitro=6.30555/227=0.02777 mol nitro

Mol C/mol nitro=3/1=x/0.02777

0.02777\*3=x= mol C=0.08333

Mass C= 0.08333\*12=1.0

\_\_\_1\_\_\_\_ g C

**Chem 1013: mini-quiz # 16: Simple Chemical Body Parts Calculations B 6 pts March 13**

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Cocaine (‘coke’) has the formula: C17H21NO4 Its molecular weight is 303 g/mol.

1) How many moles of coke can be made from 16 moles of O ?

Mol coke/mol O=1/4=x/16

X=16/4=4

\_\_\_4\_\_\_\_\_ moles coke

2) How many moles of C are in 2/17 moles of nitro ?

Mol C/moles nitro =17/1= x/(2/17)

2/17 \*17/1=x=2

\_\_2\_\_\_\_\_\_ mol C

3) How many grams of N are in 21.64 g of coke ? ( 1 mol of N =14 g)

21.64 g/303 g mol\_1 = mol coke=0.071428 mol coke

Mol N/mol coke = 1/1=> 0.07138 mol N

Multiply down to mass: 0.071428\*14=1

\_\_1\_\_\_\_\_ g N