**Mini-quiz #17 Chemistry 1114 Wednesday 10 October 2012 A**

**9 pts**

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

The molecular formula for Δ9 Tetrahydrocannibol, THC, which is the active ingredient in marijuana is: C21H30O2. It has a molecular weight of 306 g/mol.

Given: C=12 g/mol H=1 g/mol O=16 g/mol and 1 mole = 6.02\*1023 particles:

1. How many moles of C are present in 1.45714 g of THC ?

**Mol THC= 1.45714 g = 0.00476 mol THC mol C/mol THC = 21/1= m/0.00476**

**306 g mol-1 21\*0.00476=0.10**

\_\_\_**0.1**\_\_\_ mol C

1. How many atoms of H are combined with 0.011627 moles C ?

**Mol H/mol C = 30/21= m/0.011627 => m= (30/21)\* 0.011627=0.01661 mol H**

**Atoms H = mol H \* 6.02\*1023 = 0.01661\*6.02\*1023~ 1\*1022**

\_**1\*1022\_\_\_** atoms H

1. How many grams of O are combined with 5.6438\*1024 atoms of H?

**5.6438\*1024 H atoms = 9.375 mol H mol O= 2 = m=> m= 2\*9.375 =0.625**

**6.02\*1023 H atoms mol-1 mol H 30 9.375 30**

**Mass O= 0.625\*16=10 g**  \_\_\_**10**\_\_\_\_\_\_ g O