CHM 1045 Summer A, 2013

Quiz 4

Name (print)_____

Show your work for complete (and partial) credit. Express your answers to the correct number of significant figures and include units where appropriate. All chemical equations should balance; indicate phases. $N_A=6.022x10^{23}$

1. a) What is the mass of one H_2O molecule in grams?

   b) What is the mass of one H_2O molecule in amu?

2. How many mols of O_2 is 2.53**kg** of O_2?

3. What mass of Na_2O (61.98g/mol) contains 17.9g of sodium?

4. What is the formula of a compound that is 41.09% potassium, 33.70% sulfur, and 25.22% oxygen?

5. $2C_2H_6(g) + 7O_2(g) \rightarrow 4CO_2(g) + 6H_2O(l)$

Compound:	C_2H_6	CO_2	H_2O
mw (g/mol):	30.07	44.01	18.015

What mass of O_2 would react with 15.0g of C_2H_6?

4 points extra credit: A 4.24mg sample of an organic compound composed of carbon, hydrogen, and oxygen, when combusted, yielded 6.21mg of CO_2 (44.01g/mol) and 2.54mg of water(18.015g/mol). What is the percent by mass of hydrogen in the compound?