1.
(A)Which atom is used as the "standard" to assign atomic mass to different atoms? And, what is the mass of this "standard" atom?

(B)Is Avogadro's number an exact number? Explain.

2. How many atoms of Zinc are there in 25.0 mg of Zinc?

And what is the mass in grams of one molecule of carbon tetrachloride?

3. Given the following reaction: 2Al(s)+ 3S(s) -> Al2S3(s). Interpret the coefficients in terms of the reaction at MICROSCOPIC LEVEL and MACROSCOPIC LEVEL.

4. You are a space traveler and you have landed on planet "Hades" and you need to make oxygen soon. 245.10 kg of KClOx is heated in the presence of the catalyst MnO2. The mass of the remaining potassium chloride (KCl) after the reaction is 149.10 kg. What is the mass of O2(g) that you have produced? What is the value for "x"? Show calculations.

5. Calculate what the limiting reactant is in the reaction between copper(II) oxide and hydrochloric acid. Assume that you react 0.698 g of copper(II)oxide with 0.00400L of 6.00 M HCl.

6. Write the complete balanced chemical equations for the decomposition of the following compounds upon heating in the presence of manganese (IV) oxide:

A. potassium hypochlorite

B. potassium chlorite

C. potassium chlorate

D. potassium perchlorate