Quiz One - Key
Chemistry 121/100 FGH **Name**_____

1. Convert the following numbers to scientific notation:

   a. 0.0005621 5.621×10^{-4}

   b. 7700.0 7.7000×10^{3}

   c. 800. 8.00×10^{2}

2. How many significant figures are in each of the following numbers?

   a. 1405.0 5

   b. 6,000 1

   c. 7,196,800 5

   d. 9.00×10^{-3} 3

3. Round the following numbers to three significant figures:

   a. 25,880,000 25,900,000 or 2.59×10^{7}

   b. 245.8472934975 246

   c. 130,000,000 1.30×10^{8}

4. Carry out the following calculations and express the answer with the correct number of significant figures:

   a. 34.9401 x 2.07 x 0.003189 = 0.231

   b. 616.832 + 17.233 + 9198.6 = 9832.7 or 9.8327×10^{3}

   c. $1.89 \times 10^{7} \times 2.14 \times 10^{3} = 4.04 \times 10^{10}$

   d. 460.78 + 81.0 = 541.8 or 5.418×10^{2}

Explain the difference between the word pairs below by giving short definitions of each term:

a. theory, hypothesis Both relate to the scientific method. A hypothesis is a tentative explanation of an observable phenomena whereas a theory is a generalized explanation of a class of phenomena supported by a large number of experiments.

b. compound, element Two classifications of matter; an element is composed of one type of atom whereas a compound is tow or more atoms chemically bonded together.

c. homogeneous, heterogeneous Both are mixtures but a homogeneous mixture has a constant composition throughout and a heterogeneous mixture has a variable composition throughout.

d. law, theory These terms relate to the scientific method. A law is a concise often mathematical statement of fact and a theory is a generalized explanation of a general phenomena supported by many experiments.

e. gas, solid These are both states of matter but the gas is compressible and the solid is not. The solid has a definite form and the gas does not.

f. matter, mass Matter is anything that takes up space and has mass – mass is the quantity of matter.