

Chemistry 112  
First Hour Exam

Name: \_\_\_\_\_  
(4 points)

**Please show all work for partial credit**

All problems worth 12 points

1. Do the following calculations and express the answer with the correct significant figures:

$$4050 \times .0012 = \underline{\hspace{2cm}}$$

$$.0007 + .045 = \underline{\hspace{2cm}}$$

$$(3.03 \times 10^3 + 4.03 \times 10^4) / .005301 = \underline{\hspace{2cm}}$$

2. Perform the following unit conversions

908. oz to kg

59 pmoles to Gmoles

45 gallons/hour to mls/second

3. A. Give the name of the following compounds

NaBr \_\_\_\_\_

SnF<sub>4</sub> \_\_\_\_\_

CuSO<sub>3</sub> \_\_\_\_\_

B<sub>2</sub>O<sub>3</sub> \_\_\_\_\_

HNO<sub>3</sub> \_\_\_\_\_

3.B. Write the formula for the following compounds

Lithium oxide \_\_\_\_\_

Zinc chloride \_\_\_\_\_

Manganese(IV) oxide \_\_\_\_\_

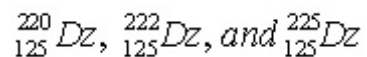
Sulfur hexafluoride \_\_\_\_\_

Hydrobromic Acid \_\_\_\_\_

4. Fill in the following table:

| Symbol           | Mass # | Atomic # | # protons | # neutrons | # electrons |
|------------------|--------|----------|-----------|------------|-------------|
| V                | 51     | 23       |           |            |             |
|                  |        |          | 8         | 8          | 8           |
| Ca <sup>2+</sup> | 40     |          |           |            |             |
|                  | 35     |          | 17        |            | 18          |

5. I have discovered a new element that I will call DrZesium (Dz). It contains three isotopes



The natural abundance of these isotopes is 20%, 30% and 50% respectively. What is the average atomic mass of this element?

6. I have a sample of calcium nitrite that contains  $2 \times 10^{23}$  atoms of calcium. How many grams does this sample weigh?

7. What is the percent composition of each of the elements in Magnesium Nitrate?

8. A compound is 36.86% nitrogen and 63.14% oxygen. What is the molecular formula for this compound, and what is its name?