**GS104 Exercise**
**Basic Principles of Chemistry**

Answer the following questions using the attached information sheets and your class notes.

1. Identify the atomic no. for the following elements:

| | | | |
|---|---|---|---|
| Hydrogen (H) | ____ | Oxygen (O) | ____ |
| Sodium (Na) | ____ | Chlorine (Cl) | ____ |
| Magnesium (Mg) | ____ | Nitrogen (N) | ____ |
| Potassium (K) | ____ | Carbon (C) | ____ |
| Calcium (Ca) | ____ | Aluminum (Al) | ____ |
| Iron (Fe) | ____ | Phosphorous (P) | ____ |
| Copper (Cu) | ____ | Sulfur (S) | ____ |
| Zinc (Zn) | ____ | Silica (Si) | ____ |

What does the atomic no. represent or equal to?

2. What is the most common atomic weight for each of the following elements? (ROUND OFF TO THE NEAREST WHOLE NUMBER).

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Hydrogen (H) | ____ | Oxygen (O) | ____ | Potassium (K) | ____ | Carbon (C) | ____ |
| Sodium (Na) | ____ | Chlorine (Cl) | ____ | Magnesium (Mg) | ____ | Nitrogen (N) | ____ |
| Calcium (Ca) | ____ | Aluminum (Al) | ____ | Iron (Fe) | ____ | Phosphorous (P) | ____ |
| Copper (Cu) | ____ | Sulfur (S) | ____ | Zinc (Zn) | ____ | Silica (Si) | ____ |

3. What is the number of electrons found associated with each of the following elements?

| | | | |
|---|---|---|---|
| Hydrogen (H) | ____ | Oxygen (O) | ____ |
| Sodium (Na) | ____ | Chlorine (Cl) | ____ |
| Magnesium (Mg) | ____ | Nitrogen (N) | ____ |
| Potassium (K) | ____ | Carbon (C) | ____ |
| Calcium (Ca) | ____ | Aluminum (Al) | ____ |
| Iron (Fe) | ____ | Phosphorous (P) | ____ |
| Copper (Cu) | ____ | Sulfur (S) | ____ |
| Zinc (Zn) | ____ | Silica (Si) | ____ |

4. What is the most common number of neutrons found in the nucleus of each of the following elements?

| | | | |
|---|---|---|---|
| Hydrogen (H) | ____ | Oxygen (O) | ____ |
| Sodium (Na) | ____ | Chlorine (Cl) | ____ |
| Magnesium (Mg) | ____ | Nitrogen (N) | ____ |
| Potassium (K) | ____ | Carbon (C) | ____ |
| Calcium (Ca) | ____ | Aluminum (Al) | ____ |
| Iron (Fe) | ____ | Phosphorous (P) | ____ |
| Copper (Cu) | ____ | Sulfur (S) | ____ |
| Zinc (Zn) | ____ | Silica (Si) | ____ |

5. Name and define the two principal types of atomic bonding?

6. Which particle of the atom defines the type of element that it represents?

7. Oxygen 18 and Oxygen 16 are examples of two _____ of oxygen. By definition, each has the same number of _____, but a different number of _____.

8 How many electrons does the first electron energy level shell hold? _____
How many electrons does each successive electron shell hold? _____.

9. What are the "noble gases" and what is unique about their electron configurations?

10. Write the scientific (exponential) notation for the following numbers

| | | | |
|---|---|---|---|
| 2 billion | _____ | 100 | _____ |
| 1,000,000 | _____ | 0.00001 | _____ |
| 0.0015 | _____ | 10,000 | _____ |

11. Make the following English and Metric Conversions:

Convert 8.9 km to meters:
Convert 25 cm to millimeters:
Convert 8.9 km to miles:
Convert 2000 Ft to inches:
Convert 6.3 miles to Feet:
Convert 76 degrees Farenheit to Centigrade:
Convert 10 degrees C to Kelvin:
Convert 10 degrees Centigrade to Farenheit: