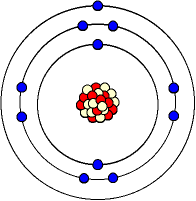
**Unit 2: BASIC CHEMISTRY**

1. Defend or counter the statement: “Biology is the chemistry that works.”
2. Define the following terms:

|  |  |
| --- | --- |
| **Element** |  |
| **Atom** |  |
| **Proton** |  |
| **Neutron** |  |
| **Electron** |  |
| **Compound** |  |
| **Molecule** |  |
| **Acid** |  |
| **Base** |  |
| **Metabolism** |  |

1. What are the Four Most Common Elements in the human body?
2. Label the locations and charges of the Three Subatomic Particles in an Atom:



1. Determine the number of protons, neutrons, and electrons for the following elements:

|  |  |  |  |
| --- | --- | --- | --- |
| ***Element*** | ***Protons*** | ***Neutrons*** | ***Electrons*** |
| **Carbon** |  |  |  |
| **Hydrogen** |  |  |  |
| **Nitrogen** |  |  |  |
| **Sodium** |  |  |  |
| **Iron** |  |  |  |
|  |  |  |  |
|  |  |  |  |

1. Boron has two isotopes, B-10 and B-11. B-10 has five protons and five neutrons. What many protons and neutrons would B-11 have? Explain.
2. How do compounds form? Differentiate between ionic and covalent bonding
3. Determine whether the substance in an acid, base or neutral:

|  |  |  |  |
| --- | --- | --- | --- |
| **Vinegar** |  | **pH = 4.7** |  |
| **Ammonia** |  | **pH = 9.8** |  |
| **Bleach** |  | **Stomach Juices** |  |
| **Car Battery** |  | **Urine** |  |
| **Water** |  | **Blood** |  |

1. What is the Most Essential Compound for living things?
2. Describe and explain four important properties of water:

11. When scientists discover another planet, they look for water on or below the surface. Why?