

- 1) What is the best answer for describing chemical bonding?
 - a. When the protons of one atom are shared, given or taken from another atom.
 - b. When two atoms, molecules, or compounds are joined together and cannot be physically separated.
 - c. When only ions are attracted to one another.
 - d. When molecules and compounds are mixed together in the same container.

- 2) What is an example of chemical bonding?
 - a. Chex-mix
 - b. Orange juice
 - c. Water
 - d. Kool-Aid

- 3) When does chemical bonding happen?
 - a. When any electrons from one atom are shared any electrons from another atom
 - b. When neutrons are shared, given, or taken between atoms.
 - c. When protons are exchanged between atoms
 - d. When valence electrons are shared, given, or taken between two atoms.

- 4) Why do atoms bond together?
 - a. Atoms bond because they do not have enough protons.
 - b. Atoms bond because they want to be stable.
 - c. Atoms bond to fill the octet rule for their valence electrons (become happy).
 - d. The answer is b and c.

- 5) What is the one part of an atom, that when changed, causes the element to change?
 - a. Protons
 - b. Neutrons
 - c. Electrons
 - d. Valence Electrons

- 6) Atoms could not bond if which subatomic particle was missing?
 - a. Protons
 - b. Neutrons
 - c. Electrons
 - d. Atoms

- 7) The law of conservation of mass states...
 - a. Only during a chemical reaction is all matter constant.
 - b. Only during a physical reaction is all matter constant.
 - c. In any reaction, chemical or physical, the matter that you start with is the matter that you end with.
 - d. Matter in reactions is only constant if the reaction is done on a Friday.

- 8) All the matter we start with in a chemical reaction is called the...
 - a. Reactants
 - b. Products
 - c. A chemical reaction
 - d. Atoms

- 9) The products of a chemical reaction are...
- always on the left.
 - always on the right.
 - what the arrow is pointing to.
 - at the start of the arrow.
- 10) Ionic bonds happen between which types of atoms?
- Atoms that have a positive charge only.
 - Atoms with opposite charges.
 - Atoms with more than 20 electrons.
 - Atoms that have a negative charge only.

*How many protons would you have to add or subtract to get the first element to turn into the second element? **Do not forget to add the Plus or Minus sign!***

11) Li to C _____

12) Ca to Kr _____

13) Zr to Ne _____

How many spaces are still free in the outer orbital that this element is using?

14) **S** $e^- = 16$ Free Spaces left in the outer most orbital it uses _____

15) **N** $e^- = 7$ Free Spaces left in the outer most orbital it uses _____

16) **O** $e^- = 8$ Free Spaces left in the outer most orbital it uses _____