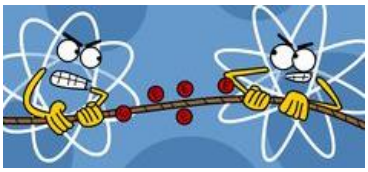
Atoms & Bonding NOTES



I. _____: basic building blocks of all substances.

II. <u>Chemical bonding</u>: combining of atoms of elements to form _____.

*The number of _____ electrons determines if a bond forms.

*An atom may _____, _____, or _____ electrons to form a **stable** _____.

A. **_____<u>bonding</u>**: involves a _____ of electrons from one atom to another to form _____ atoms called _____.

1.) **_____<u>:</u>** a _____ charged ion. Ex: Li^{1+} , Na^{1+}

Forming a Li ion or Li^{1+}

2.) **_____<u>:</u>** a _____ charged ion. Ex: F^{1-} , Cl^{1-}

Forming a F ion or F^{1-}

2.) **<u>Ionization:</u>** the process of _____ electrons & forming _____.
The energy needed for ionization is called **<u>ionization energy or _____</u>**

a.) Atoms with a _____ valence electrons tend to have a _____ I.E. = lose electrons _____. Ex: most metals; especially _____ & _____ Metals.

b.) Atoms with _____ valence electrons tend to have a _____ I.E. =_____ electrons easily.
Ex: nonmetals- _____

4.)_____: the tendency to _____ electrons (E.A.).

Ex: metals have a _____ E.A.

non-metals have a _____ E.A.

5.) Ionic bonds form in compounds that are often _____.
(repeating arrangements)

Ex: _____

6.) A chemical formula for an ionic compound shows the _____ of ions present in the crystal lattice. Ex: NaCl = 1Na & 1Cl

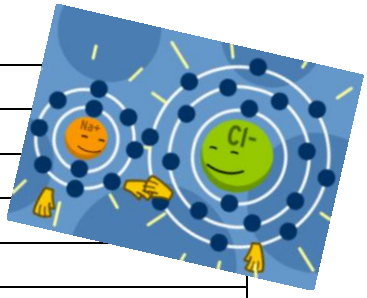
B. _____**bonding**: involves the _____ of electrons that are in the valence levels of both atoms at the _____ time.
Ex:

1.) _____ often takes place between atoms of the _____ element.

Ex: _____ elements- _____

2.) The combination of atoms formed by a covalent bond is a _____.

3.) _____**:** a group of _____ bonded atoms that act like a _____ atom when combining with other atoms.



Name	**Formula**
Ammonium	NH_4^{1+}
Acetate	$C_2H_3O_2^{1-}$
Chlorate	ClO_3^{1-}
Hydrogen carbonate	HCO_3^{1-}
Hydroxide	OH^{1-}
Nitrate	NO_3^{1-}
Nitrite	NO_2^{1-}
Carbonate	CO_3^{2-}
Sulfate	SO_4^{2-}
Sulfite	SO_3^{2-}
Phosphate	PO_4^{3-}

C. _____ **bond:** bond formed by atoms of _____, in which the outer electrons of the atoms form a common electron cloud.