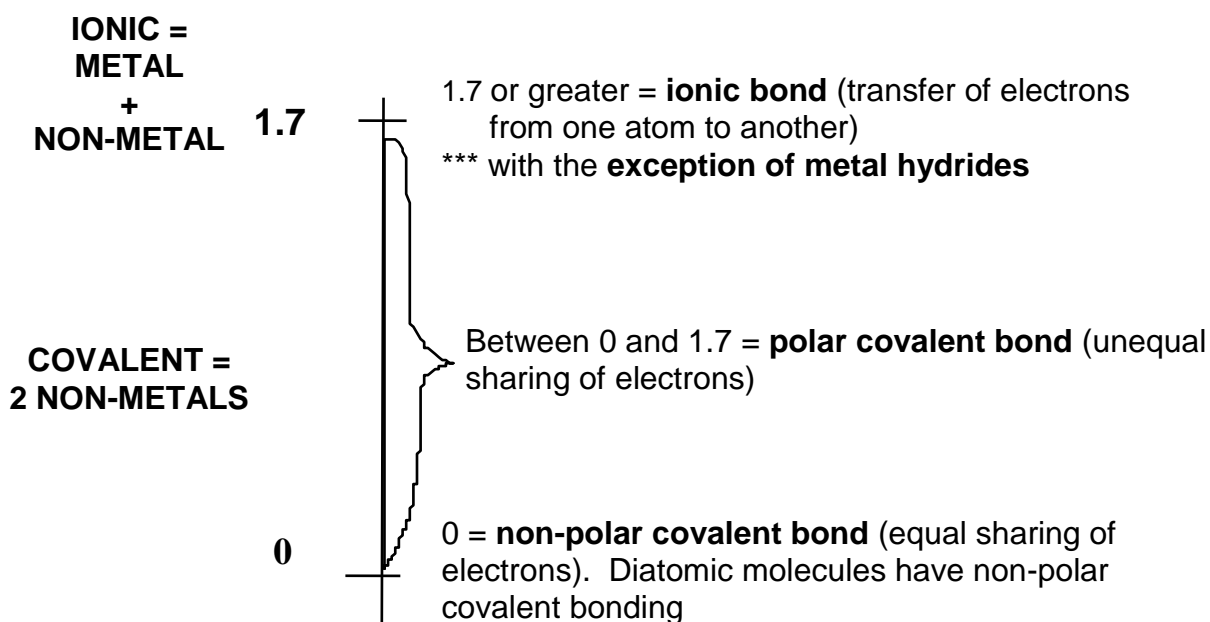


UNIT 4 Bonding REVIEW

1. Making of chemical bonds is an exothermic process; breaking of chemical bonds is endothermic. **EXOTHERMIC** - energy **exits** **ENDOTHERMIC** - energy **enters**
2. Atoms bond together to be like noble gases, having 8 electrons in the valence shell (except He which has 2)
3. **Electronegativity** - the ability of an atom to attract an electron in a bond. **(Chart S)**. Fluorine has the greatest electronegativity value = 4.0.
4. Electrons can be shared or transferred during the bonding process, based on electronegativity difference values:



5. Ionic Compounds are called **SALTS**, they are good conductors in the aqueous or liquid phases, and have high melting points.
6. Covalent Compounds are called **MOLECULES**; they are soft, poor conductors of heat and electricity and have low melting points.
7. Metals have **metallic bonds**, in which ions are surrounded by a “**sea of mobile electrons**”. **ONLY metals can conduct in the solid phase**. They are malleable, ductile and have luster.

8. In order to **write the formula of a compound, cross oxidation states, drop charges and reduce**

9. **Empirical formula is the reduced formula.**

10. Binary compounds contain only two types of elements.
 - They end in -IDE.
 - NaCl = sodium chloride.

11. Polyatomic compounds contain 3 or more different types of elements.
 - They end in the polyatomic ion name (**TABLE E**).
 - Na₃PO₄ = sodium phosphate

12. **Roman numerals** are used to identify the oxidation state of metals that possess more than one oxidation state. CuCl = copper (I) chloride

13. Common naming system can be used for **COVALENT COMPOUNDS ONLY** using prefixes to identify number of each atom.

14. Know how to draw **Lewis Dot Structures** for IONIC AND COVALENT compounds.