

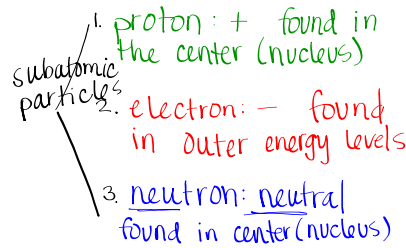
Biochemistry: The chemistry of life

Atoms, ions, molecules

Atoms: The basic unit of matter.

• everything is made of atoms.

• Structure of an atom:



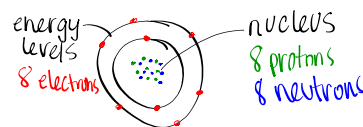
• atoms have an equal # of protons & electrons so they are neutral

• atoms are stable when outermost energy level is full of electrons

Element: 1 particular atom that cannot be broken down into simpler substances

by chemical means
 ex: hydrogen, carbon, sodium
 • 96% of human body is made up of C, H, O, N

ex: Oxygen 8



Compound: when 2 or more DIFFERENT elements combine

ex: H₂O, NaCl, C₁₂H₁₂O₆

Types of bonds

ions: atoms that gain or lose electrons

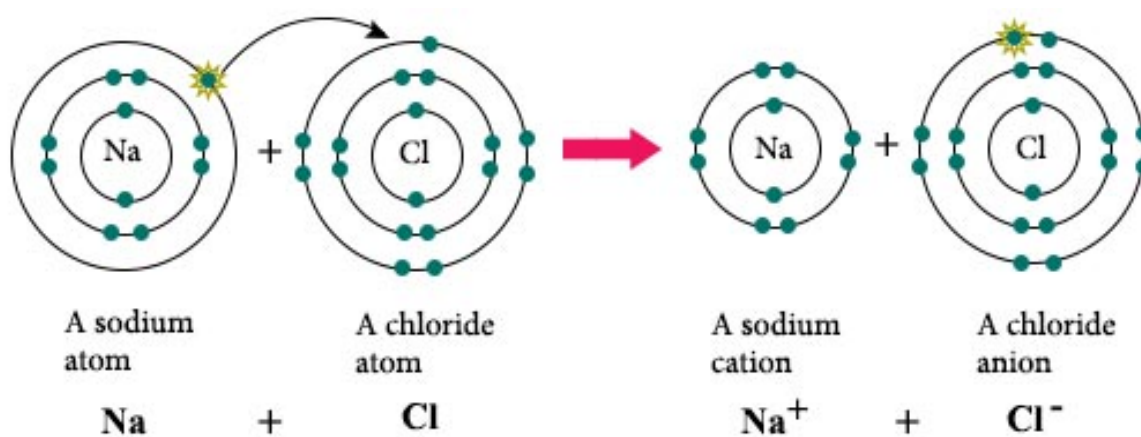
1. positive: lose electron
2. negative: gain electrons

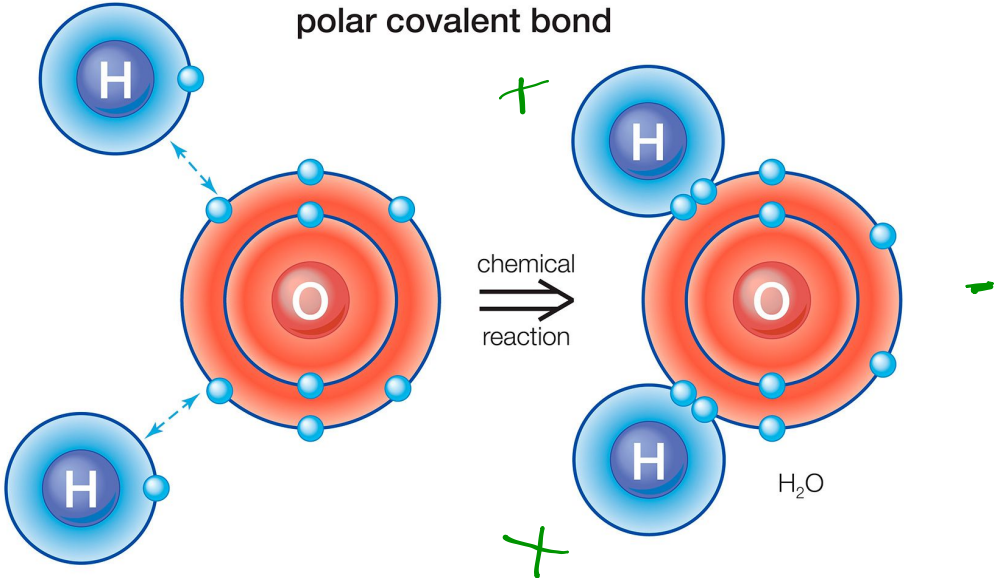
Ionic bonds: weak bond that forms when atoms gain or lose electrons

Covalent bonding: share electrons (strong)

1. polar covalent bond: electrons are unevenly distributed → charge
2. nonpolar covalent bond: electrons are evenly distributed -

Ionic Bond





Nonpolar Bonds in an Oxygen Molecule (O₂)

