Ch₂ Bio Notes

Monday, August 31, 2015

8:12 PM

Atoms, Ions Molecule: Building blobcks of chem. Evo.

- Four types: hydrogen, carbon, nitrogen, and oxygen make 96% of org.
- Two Q's : What is the physical structure of these four elements? What is the structure of these • simple molecules?

Basic Atomic Structure

- Periodic Table:
 - Atomic Number= protons
 - Mass Number = protons + neuttrons
- Atomic # doesn't vary if it changes then there is a new element present ٠
- Diff. # of neutrons creates an isotope means different masses
- Atomic weight: avg. of all masses •
- Not all isotopes are stable- 14C as it decays turns one of its neutrons into a protons making it • radioactive
- **Dalton**: used to measure protons neutrons electrons (1 = 1 1dalton) not an electron •
- e.co.u Orbitals (up to 2 electrons) : specific regions electrons move around nuclei in •
- Grouped to levels- electron shells
- Fill innermost before outer
- Grenze electrons Valence Shell- outermost shell: electrons in her
- # of unpaired electrons is called the valence
- Chemical Bonds- fills outer mes (s) III strong atttractice between 2 or more is a covalent bond

How Does Covalent Bolding Hold Molecules

- Note user substances held to ether by ovalent bonds
- Opposites attract

Polar and nonpolar Bonds

- Electrons not always shared due to electronegativity
- Due to # of protons in nucleus and distance from nucleus to vlance shell
- Non polar- when electrons are shared
- Asymetric sharing of electrons means a poalr covalent bond •

Polar bonds produce Partial Charges on Atoms

Why is water such an efficient solvent?

- Life is based upon water
- Covalent bonds within are polar •
- Greater electronegativity than hydrogen
 - Oxygen has partial neg. charge
 - Hydrogen has partial pos. charge

Hydrogen Bonds

- Weak electrical attractions partially neg. oxygen of one water molecule
- Partially positive hydrogen