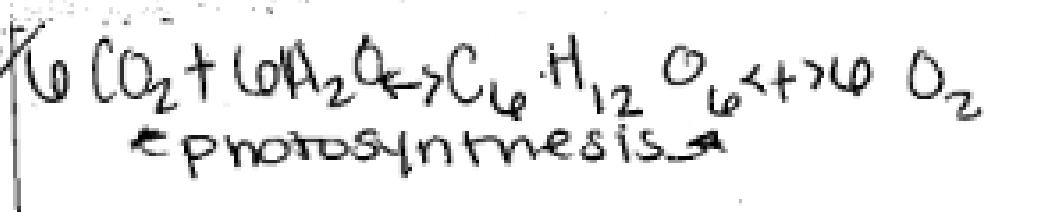


Darwin's observation



- Adaptations
1. Physiological
 2. Structural
 3. Biochemical
 4. Environmental

level of organization

Atoms / Mole.

cells

tissues

organs

BIO 131

CHEAT SHEET

Community: 1 (only type)

→ population & various

Ecosystem: everything including plants / mountains

Amino Acid

Building block of all proteins

amino acids

- 3 domains
- #1 Bacteria
 - #2 Archaea
 - #3 Eukarya

Taxonomic Classification

Domain

Kingdom

Phylum

Species w/ phylum

Class

Order

Family

Genus

Species

Mutation

genetic mistake / cannot be reversed

Reasoning

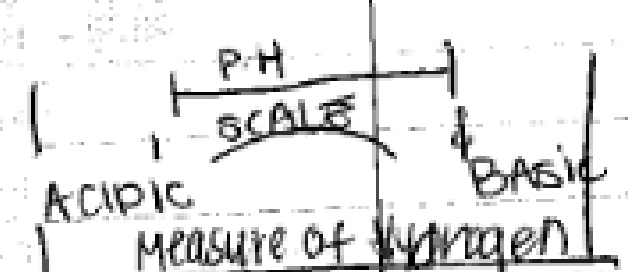
Deductive & guess thought

Inductive thought derived from scientific observation

Placebo & blind side study

{ fake medicine trial }

CHAPTER 1 NOTES



INORGANIC compounds

- Small, simple
- H₂O, simple acids and bases and simple salts
- MUST have carbon + hydrogen

ORGANIC compounds

- #1) larger more complex carbon containing
- #2) 2+ carbon = backbone of molecules

Hydrophilic

- H₂O soluble
- polar

Hydrophobic

- lipid soluble
- NON POLAR

* evaporated cooling H₂O is heated (boiling)

LIPID Soluble =

ACID : will yield (H⁺) when dissolved in H₂O

BASE : will yield (H⁻) when dissolved in water

BUFFER : will donate (H⁻) (H⁺) to maintain pH (homeostasis)

pH : measure of hydrogen ion (H⁺) in a given area (vaginal, stomach)

Salts result of combining a strong acid + strong base

HCL + NaOH = H₂O + NaCl

CHAPTER 2 NOTES

Protons: + charge (Nucleus) defines property of atom

Electrons: No charge #2 determine (orbital) (Nucleus)

atomic orbital electron

- negative
- defines chemical reactivity of an atom.

(25) Trace Elements
(92) Recycled in small quantities

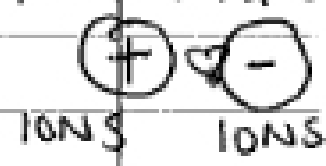
CARBON
 C-C ~ saturated
 C=C ~ unsaturated
 C≡C ~ supersaturated

ATOMIC # = PROTONS (P)
 ATOMIC MASS # = PROTONS + NEUTRONS
 COVALENT (P+N)

CHEMICAL BOND: when atoms share molecule electrons then form a molecule.
 * share electrons = covalent bond

IONIC BONDS (CONTINUED)

Bonds made from opp. charged ions.



A. IONS atom or group w/ positive net charge OR net negative

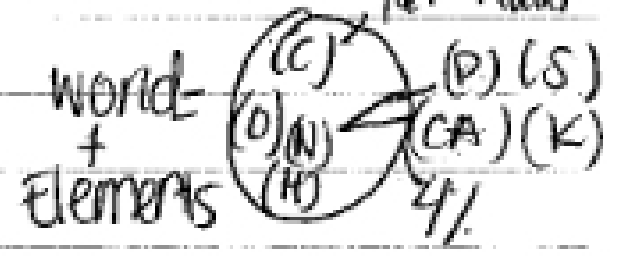
1. CATION: POSITIVE ION: LOSS electron
 ANION: NEGATIVE ION: gained electron

ATOMS - ELEMENTS - COMPOUNDS → MATTER →

25 ELEMENTS
 92 ESSENTIAL
 CANNOT BE
 BROKEN DOWN.

COMPOUND
 • substance containing of 2 or more major elements combined in a fixed ratio.
 • characteristics differ from elements

ISOTOPES
 • two atoms of an element that differ in # neutrons
 (25) living matter



ELEMENTS	ATOMIC #
O - oxygen oxygen	8
C - carbon carbon	6
H - hydrogen hydrogen	1
N - nitrogen	7

Trace Elements
IRON (FE)
Magnese (MN)
COPPER (CU)
Iodine (I)

92 Human Body
 4% Human Body

* ATOM'S, MOLECULES, SUBATOMIC PARTICLES
 Measured in DALTONS *

ELEMENTS	ATOMIC #
CA	20 calcium
P	15 phosphorus
K	19 potassium
S	16 sulfur
NA	11 sodium
CL	17 chloride
Mg	12 magnesium

Molecular Formula = C₂H₆ or Methane

Structural Formula = $\begin{matrix} H & H \\ | & | \\ H-C & -C-H \\ | & | \\ H & H \end{matrix}$ - Methane

Molecule: 20+ more atoms held together by a covalent bond.

single covalent bond: sharing of 1 valence pair (saturated)
 double covalent bond: sharing of 2 valence pairs (unsaturated)

COVALENT BOND: form between atoms of the same element or diff. elements.
 COMPOUND - 2 or more different elements (SODIUM CHLORIDE) NaCl