Name: _____ Date: _____
A & P Ms. Hartnett

Chapter 2, Part 2: Intro to Biochemistry

I. BIOCHEMISTRY: ESSENTIALS FOR LIFE

- _____ compounds:
  - Contain _____
  - Most are _____ bonded
  - Example: $C_6H_{12}O_6$ (_____)
- _____ compounds:
  - _____ carbon
  - Tend to be _____ compounds
  - Example: H_2O (water)

II. IMPORTANT INORGANIC COMPOUNDS

1. _____
2. _____
3. _____
4. _____

Water

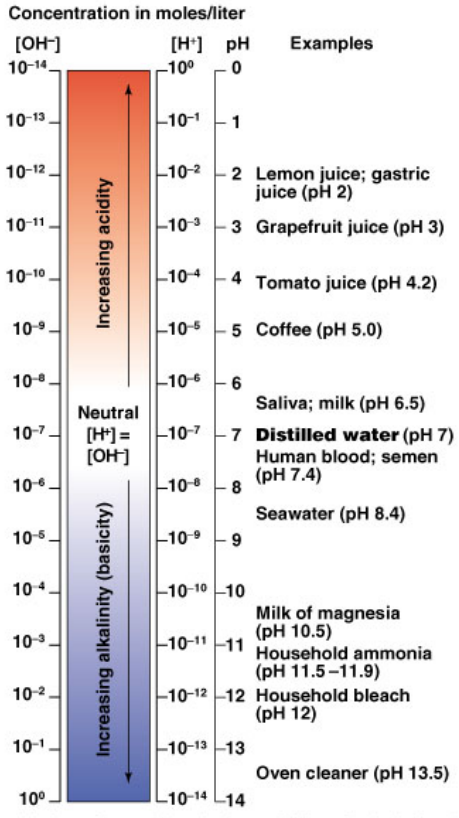
- Most _____ inorganic compounds
- _____ of our body _____
- _____ properties:
  - High _____
  - _____/solvent properties
  - Chemical _____
  - _____

Salts

- _____ = _____ compounds
  - Easily _____ into _____ in the presence of water (_____, _____)
  - Vital to many body _____ (nerve _____, transporting _____)
  - Include _____ which conduct electrical currents

Acids and Bases

- Acids
  - Can release detectable _____ (H^+) ions
  - Proton _____
- Bases
  - Releases _____ (OH^-) ions
  - Proton _____
- _____ reaction
  - Acids and bases react to form _____ and a _____



pH

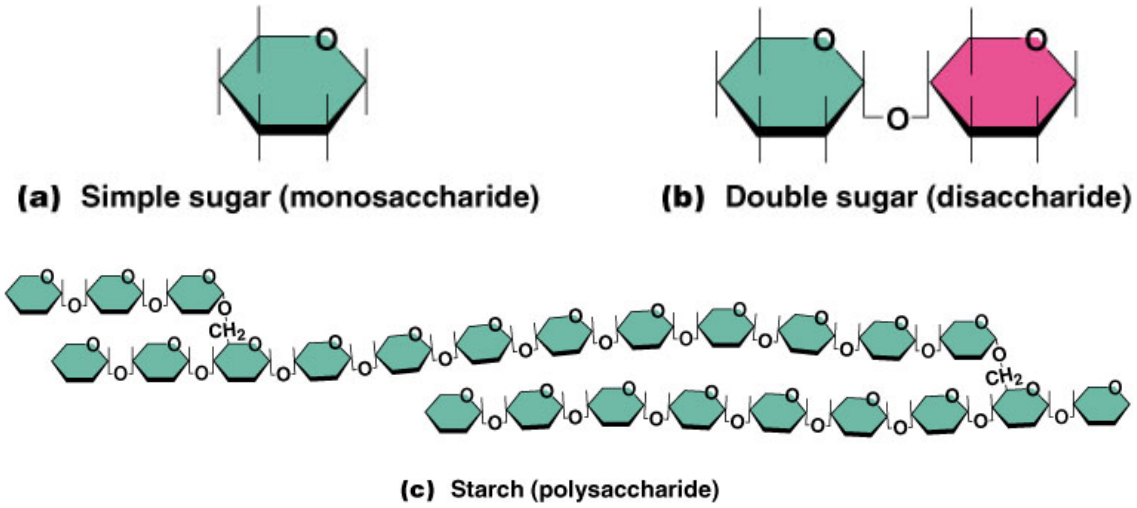
- Measures relative _____ of _____ ions
  - pH 7 = _____
  - pH below 7 = _____
  - pH above 7 = _____
- Buffers = chemicals that can _____ pH change

III. IMPORTANT ORGANIC COMPOUNDS

1. _____
2. _____
3. _____
4. _____

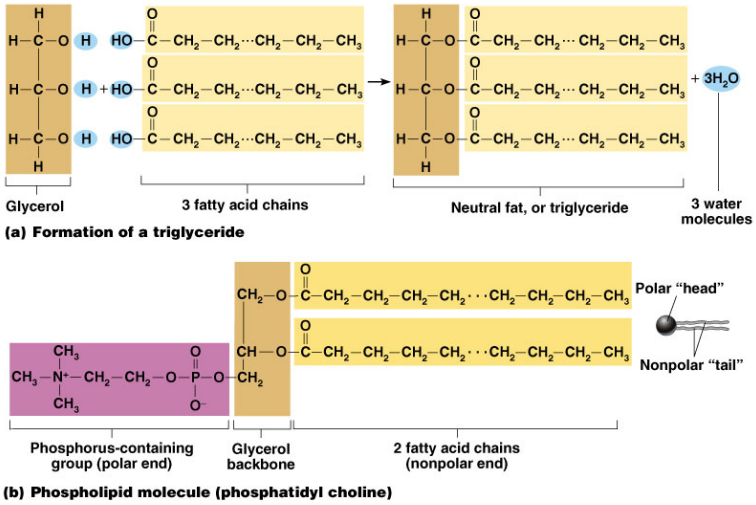
Carbohydrates

- Contain _____,_____, and oxygen
- Include _____ and _____
- Classified according to _____
  - _____saccharides – simple sugars
  - _____saccharides – _____ simple sugars joined by dehydration synthesis
  - _____saccharides – long _____ chains of _____ simple sugars
- Usually end in _____



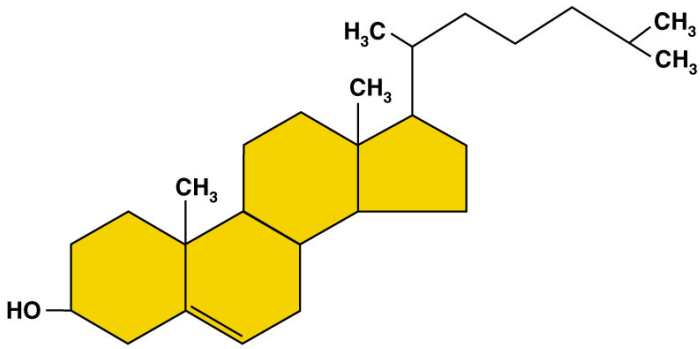
Lipids

- _____ = _____, oils, and waxes
  - Contain _____, hydrogen, and oxygen
    - Carbon and hydrogen _____ oxygen
- _____ in water



Common Lipids in the Human Body

- Neutral fats (_____)
  - Found in fat _____
  - Composed of _____ and _____
  - Source of _____ energy
- _____ = form cell membranes
- Steroids
  - Include _____, bile salts, vitamin D, and some _____

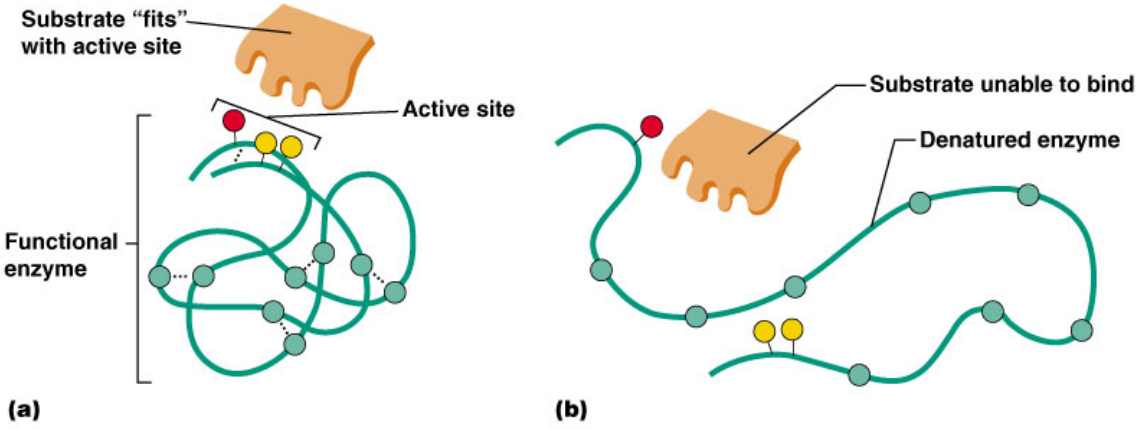


Proteins

- Made of _____
  - Contain _____, oxygen, hydrogen, _____, and sometimes _____
- Account for over _____ of the body's organic matter
  - Provides for _____ materials for body tissues
  - Plays a vital role in cell _____
- Act as _____, hormones, and _____

Enzymes

- Act as biological _____
- Increase the _____ of chemical _____
- Anything ending in _____ is an enzyme

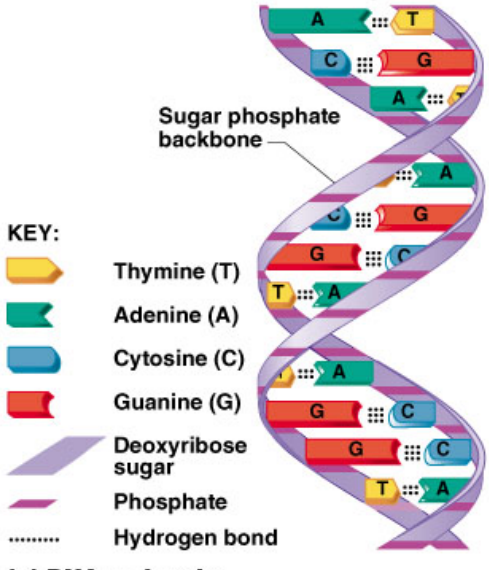


Nucleic Acids

- Provide _____ of life
- Control body _____ by dictating _____ structure
- _____ bases (building blocks)
  - A = Adenine
  - G = Guanine
  - C = Cytosine
  - T = Thymine
  - U = Uracil
- Make _____ and _____

Deoxyribonucleic Acid (DNA)

- Organized by _____ bases to form _____
- _____ before cell division



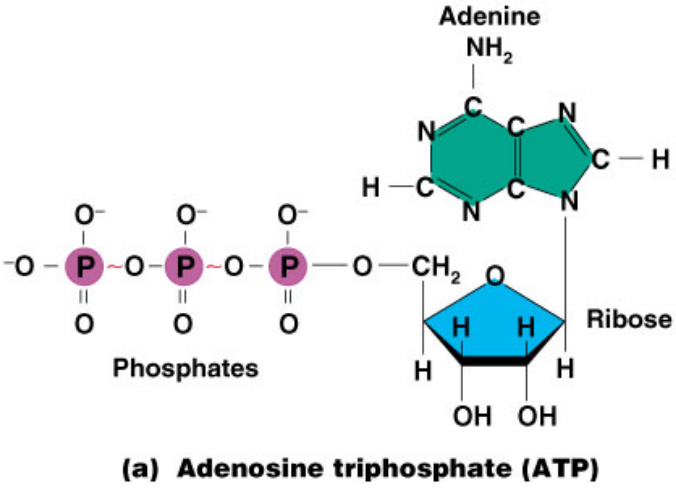
- Provides _____ for every _____ in the body

Ribonucleic Acid (RNA)

- Carries out the _____ for _____ synthesis issued by DNA
- _____-stranded
- Has _____ instead of thymine
- Made of _____ sugar instead of deoxyribose

IV. ADENOSINE TRIPHOSPHATE (ATP)

- Chemical _____ used by all cells
- Energy is _____ by breaking high energy _____ bond
- ATP is replenished by _____ of food fuels



(a) Adenosine triphosphate (ATP)

How ATP Drives Cellular Work