

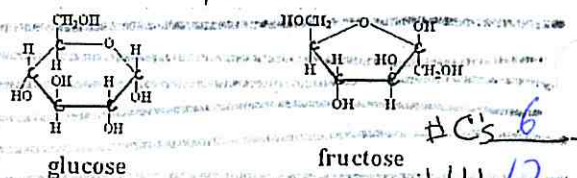
Answers

Outline Notes: Molecules of Life Chap 3-2

Carbohydrate

4 Main Groups of organic compounds

1. Carbs elements C H O
2. Proteins CHO N
3. Nucleic Acids CHO N P
4. Lipids CHO



Carbohydrates

Main source of short term (quick) energy for living things.
 composed of carbon, hydrogen and oxygen
 Ratio of 1C : 2H : 1Oxygen

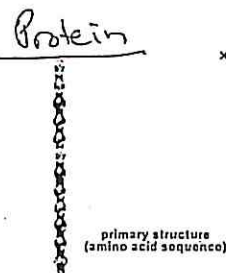
Isomer

Examples of Carbohydrates

Sugars - sucrose, glucose, galactose, fructose...
 Cellulose- gives plants structure
 Starch-in plants
glycogen - form of sugar storage in animal's muscles
 Monosaccharide- one sugar Molecule (monomer of carbohydrate)
 Disaccharide- two sugar units
 Polysaccharide- 3 or more

Proteins

Composed of Carbon, Hydrogen and Nitrogen, O
 Proteins are made of Polypeptide chains of amino acids joined together (monomer)
 20 types of Amino acids
 Proteins help to fight disease and repair cells
 Determines characteristics expressed in organism (such as hair color, eye color, tallness...)

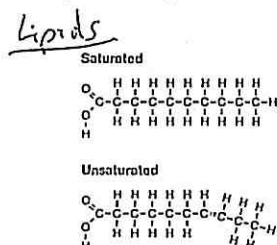


Examples of Proteins

Skin, Hair, horms, Some hormones such as steroids, Enzymes
 Enzymes speed up the rate of chemical reactions
 Without Enzymes the reactions would be too slow to support life processes. Enzymes act as a catalyst-reduces the amount of activation energy needed for a chemical reaction, does not get used up.
 Enzymes-They are often by ending in "-ase"
 Each enzyme has an pH and temperature

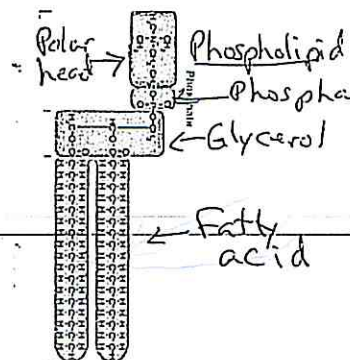
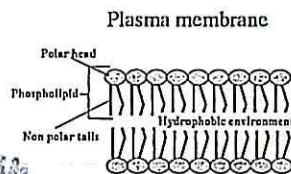
Lipids

composed of carbon, hydrogen and some oxygen
 Fatty acid- large structure (monomer)
 Contain concentrated energy bonds between C and H
 lipids are used for long-term energy storage.
 Lipids are nonpolar Molecules.
 Do not dissolve in water (insoluble)
 Lipids are also important parts of biological membranes and cell coverings.



Examples of Lipids

oils, wax, cell membranes
 Steroids such as testosterone
 Saturated fats
 Triglycerides- three fatty acids acids
 Phospholipids- fatty acids plus phosphate group
 Hydrophilic end- love in water
 Hydrophobic tail- insoluble in H₂O
 Lipids that make up cell membranes
 Contain: 2 fatty acids
 Glycerol and a phosphate group



Nucleic acids

structure is nucleotides (monomer)
 Contains sugar group, phosphate and nitrogen base
 Store and transfer of genetic information

Examples of Nucleic Acid:

RNA and DNA

