

Review Sheet

Biology 2, Biochemistry exam

Key Terms

ions	organic compound
covalent bond	carbohydrate
ionic bond	mono and polysaccharides
Nonpolar molecule	nucleic acids (DNA, RNA)
Polar molecule	
Cohesion	nucleotides
Hydrogen bond	lipids
Adhesion	fatty acids and glycerol
Capillary action	protein
acid	Amino acids
base	polypeptide
buffer	
pH	

Objectives

- 1) Describe the *location and charge* of the 3 subatomic particles (protons, neutrons and electrons)
- 2) Describe the difference between a polar covalent bond and a nonpolar covalent bond (*review the videos on the wiki on the Biochemistry page for all of the information up to this point*)
- 3) Explain how the properties of water (hydrogen bonding, cohesion, adhesion, capillary action) result from the polarity of water molecules
- 4) Explain the difference between acids and bases and be able to identify an acid or base by its position on the pH scale. Also explain why buffers are important to any biological system.
- 5) Explain the role of condensation and hydrolysis reactions in the formation and break down of polymers (*links # 11 and 12 on the website - works better in Firefox*)
- 6) ******Know the different kinds of organic compounds (carbohydrates, proteins, lipids, and nucleic acids) and functions and properties of each (*Study the handout of the table of organic compounds you received in class and look at links 1, 2, and 3 under Biochemistry on the links page of the website*).
- 7) Describe the difference between an unsaturated fatty acid and a saturated fatty acid
- 8) Explain how the primary structure determines the shape of the protein and why this is important to the protein.
- 9) Explain the difference between hydrophilic and hydrophobic. If an amino acid that is part of a large protein is hydrophobic (and the protein is surrounded by water) where would this amino acid be located in the final folded structure of the protein?
- 10) *Review your protein folding tutorial, the 18 question homework on macromolecules and the front page of your water lab packet.*