

AP Biology Chemistry Review

1. Distinguish between atoms in elemental state, ions, and isotopes.
2. Using the term, electronegativity, distinguish between nonpolar and polar covalent bonding.
3. Fill in the following:

Type of Bond	How do you predict when it will form?	What holds the bond together?
Ionic		
Covalent		
Hydrogen		

4. Distinguish between Hydrogen Bonding and Van der Waals forces.
5. Fill in the following:

Property of Water	What causes it?	Why is it important?
Universal Solvent		
High Heat Capacity		
Ice floats		
High surface tension		
Capillary action		

6. Define Organic Chemistry. Know basic functions or key terms for functional groups: hydroxyl, carboxyl, amino, phosphate, and methyl
7. Fill in the following:

Family of Biochemical	Group within the family	Common Name	Monomer	How do you recognize it?	Uses	Examples
Carbohydrates						
	Monosaccharide					
	Disaccharide					
	Polysaccharide					
Lipids						
	Saturated fat					
	Monounsaturated fat					
	Polyunsaturated fat					
	Phospholipid					
	Steroid					
Protein						
Nucleic Acid						
	DNA					
	RNA					

8. Distinguish between the primary, secondary, tertiary and quaternary structure of proteins. Discuss what effects and types of interactions characterize each.

Enzymes are examples of protein but they will not be on the Unit 1 Test. Enzymes have been moved to a later unit 😊

9. Define: Enzyme, substrate, and induced fit and fill in the chart below:

Factor Effecting Enzyme Activity	How it Works
Concentration of enzyme or substrate	
Low pH or High Temperature	
Cofactors (coenzymes)	
Allosteric Inhibition	
Allosteric activation	
Competitive inhibition	
Noncompetitive inhibition	

10. What is the relationship between proteins and nucleic acids?
11. Describe, using the induced fit model why shape is important to an enzyme's function.
12. List as many hybrid biochemicals or biochemical examples (ex: phospholipids) as you can think of and state their purposes