SBI4U Unit Planner: Biochemistry

References: www.loreescience.ca → Biochemistry
Nelson: Biology 12 → Unit 1

Topics	Key Concepts
• Types of Cells	- Eukaryotic vs. Prokaryotic
• Cell Structure & Function	- Comparing Plant and Animal Cells - Structure and Function of organelles
• Atoms, Bonding & Polarity	- Atomic Structure - Polar vs. Non-Polar, dipoles - Bonds: Ionic, Covalent, Intermolecular, Hydrogen - Electronegativity - Isomers - Isotopes
• Properties of Water	- Hydrogen bonds, adhesion, cohesion, heat of evaporation
• Functional Groups	- Carboxyl, Carbonyl (aldehyde, ketone), Hydroxyl, Amino, Phosphate, Sulfhydryl
• Macromolecules – Carbohydrates, Lipids, Proteins, Nucleic Acids	- Monomers & Polymers - Structure and Function - Bonds: glycosidic linkages, ester linkages, peptide bonds, phosphodiester bond - Dehydration & Synthesis Reactions - Uses
• Enzymes Structure & Function	- Models: Induced Fit & Lock & Key - Factors Affecting Rate of Reaction (denaturing)
• Enzyme Control	- Cofactors - Competitive Inhibitors - Allosteric Regulation
• Chemical Reactions	- Redox - Hydrolysis - Condensation - Neutralization Reactions. - Anabolic (dehydration synthesis) vs. Catabolic (hydrolysis)
• Phospholipid Bilayer	- Structure & Function - Cell Membrane: Fluid Mosaic Model
• Movement Across Cell Membranes	- Passive vs. Active Transport - Endocytosis vs. Exocytosis

Biochemistry Terms to Know

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- Activation Energy
- Activator
- Active Form
- Active Site
- Active Transport
- Adenine
- Adhesion
- Aldehyde
- Allosteric Activator
- Allosteric Inhibitor
- Allosteric Regulation
- Allosteric Site
- Amino
- Amino acid
- Amphipathic
- Anabolic
- Analytical
- Antiport
- Aquaporin
- ATP
- Base Pair
- Bioremediation
- Bond Energy
- Buffer
- Carbohydrate
- Carbonyl
- Catabolic Reactions
- Catalyst
- Cholesterol
- Coenzyme
- Cofactor
- Cohesion
- Competitive inhibition
- Concentration
- Concentration Gradient
- Condensation
- Condensation Reaction
- Coupled Transport
- Covalent Bond
- Cytosine
- Dehydration Synthesis
- Denature
- Deoxyribose
- Dialysis
- Diffusion
- Dipole
- Disaccharide
- Disulfide Bridge
- DNA
- Dynamic
- Electronegativity
- Endergonic
- Endocytosis
- Energy
- Enzyme
- Enzyme-Substrate Complex
- Equilibrium
- Ester Bond
- Eukaryote
- Exergonic
- Exocytosis
- Facilitated Diffusion
- Feedback Inhibition
- First Law of Thermodynamics
- Fluid Mosaic Model
- Functional Group
- Glycerol
- Glycolipid
- Glycoprotein
- Glycosidic Linkage
- Guanine
- Heat Capacity
- Hydrogen Bonds
- Hydrolysis
- Hydrophilic
- Hydrophobic
- Hydroxyl
- Hypertonic
- Hypotonic
- Inactive Form
- Induced Fit Model
- Inhibitor
- Integral Protein
- Ionic Bond
- Isomer
- Isotonic
- Isotope
- Ketone
- Kinetic
- Lipid
- Lock & Key
- Membrane
- Metabolism
- Monomer
- Monosaccharide
- Na^+/K^+ Pump
- Negative
- Nitrogenous Base
- Non-competitive inhibition
- Non-Polar
- Nucleic Acid
- Nucleotide
- Oligosaccharide
- Osmosis
- Osmotic Concentration
- Oxidation
- Oxidation-Reduction (Redox) Reactions
- Passive Transport
- Pentose Sugar
- Peptide Bond
- Peripheral Protein
- pH
- Phagocytosis
- Pharmaceutical
- Phosphate
- Phosphate Group
- Phosphodiester Bond
- Phospholipid
- Pinocytosis
- Polar
- Polymer
- Polypeptide
- Polysaccharide
- Positive
- Primary
- Product
- Prokaryote
- Protein
- Protein Carrier
- Protein Channel
- Purine
- Pyrimidine
- Quaternary
- Reactant
- Receptor-Mediated Endocytosis
- Reduction
- Ribose
- RNA
- Saturated
- Secondary
- Selectively Permeable
- Simple Diffusion
- Solute
- Solvent
- Steroid
- Substrate
- Sulfhydryl
- Symport
- Temperature
- Tertiary
- Thalidomide
- Therapeutic
- Thymine
- Transition State
- Triglyceride
- Unsaturated
- Uracil
- Vesicle
- α – Helix
- β – Pleated Sheets