

# Biology 101

## Study Guide for Exam #1

Lui

### Chapters 1,2,3, and 4

Where applicable, be able to define, describe, and/or illustrate, know examples of, know the Biological significance of and know Biological principles relating to each of the following:

John Dalton	Isomers	Passive Transport
Element	Hydrocarbons	Diffusion
Atom	Functional Groups	Dialysis
Neutrons	Macromolecules	Osmosis
Protons	Polymer	Facilitated Diffusion
Electron	Monomer	Active Transport
Atomic Nucleus	Dehydration Synthesis	Endocytosis
Atomic Symbol	Hydrolysis	Exocytosis
Atomic Number	Carbohydrates	Cell
Mass Number	Saccharides	Prokaryotic Cell
Octet Rule	Lipids	Cell Wall
Electron Shells/orbitals	Triglycerides	Eukaryotic Cell
Valence Shell	Glycerol and Fatty acids	Nucleus
Chemical Compound	Saturated/Unsaturated	Nucleolus
Isotopes	Sterols	Nuclear Envelope
Tetrahedron	Proteins	Nuclear Pores
Cohesion	Amino Acids	Chromatin
Adhesion	Peptide Bond	Rough Endoplasmic Reticulum
pH	Nucleic Acids	Ribosomes
Acidic, Basic, Neutral	Nucleotides	Smooth Endoplasmic Reticulum
Buffer	DNA (Deoxyribonucleic Acid)	Golgi Apparatus
Hydrophilic, Hydrophobic	RNA (Ribonucleic Acid)	Vesicles and Vacuoles
Ionic	Enzymes	Lysosomes
Polar, Nonpolar	Phospholipids	Mitochondria
Solution	Plasma Membrane	Cytoskeleton
Solvent, Solute	Fluid-Mosaic Model	Microtubules
Dissolve	Integral Proteins	Flagella and Cilia
Molecular Formula	Peripheral Proteins	Chloroplasts
Structural Formula	Cholesterol	Plasmodesmata

7 characteristics of living things

Characteristics of a good experimental design

3 types of molecular bonds (Covalent, Ionic, and Hydrogen) and their relative strengths

Characteristics, properties, and significance of water

Atomic bonding characteristics of C, H, O, and N

Be able to draw a structural formula from a molecular formula (or vice versa)

Molecular formulas, and structural formulas of the different kinds of functional groups

General molecular structure and functions of the 4 major categories of Macromolecules

4 levels of protein structure (Primary, Secondary, Tertiary, and Quaternary)

Selective permeability factors of plasma membranes

Functions of cellular components and organelles

Similarities and differences between bacteria, animal, and plant cells