Honors Biology Midterm Chapters and Topics 2014-2015

**Chapter 1: Exploring Life**

Themes in the Study of Biology

Levels of organization

Cells are structural & functional units of life

Form fits function

The Process of Science

* Writing a hypothesis
* Controlled experiments
* Independent variables, dependent variables, importance of controls

**Chapter 2: The Chemical Basis of Life**

Elements

Subatomic particles, atomic number, & mass

Compounds

Isomers

Isotopes

Ionic boning, Covalent bonding

Properties of water

Hydrogen bonds

Reactants & products in chemical equations

pH

**Chapter 3: The Molecules of Cells**

Organic vs. inorganic

Polymers & monomers

Dehydration & hydrolysis reactions

Carbohydrates, lipids, proteins, nucleic acids

* Monomers of each molecule
* Structures
* Functions
* Examples of each molecule

**Chapter 4: A Tour of the Cell**

Types of microscopes & why they are used

Prokaryotes vs. Eukaryotes

Comparing plant & animal cells

Cell structures & functions

**Chapter 5: The Working Cell**

Plasma membrane structure & function

Passive transport

* Diffusion
* Facilitated diffusion
* Osmosis: hypotonic, hypertonic, isotonic solutions & impact on cell

Active transport

* Molecular transport
* Bulk transport: endocytosis, exocytosis

Potential & kinetic energy

Endergonic & exergonic reactions

ATP

Enzymes

**Content:**

94 multiple-choice questions

Short answer section

No drawing hydrocarbons

No essays

**TIPS:**

Any material covered from beginning of year until present may appear on midterm

Best review sheets are tests & quizzes