

## Biology Placement Test Study Guide

► **Please note:** The Biology Placement Test is given in lieu of taking BIO111: General College Biology or its equivalent. As such, the test covers all of the material in the chapters of the text (which can be accessed in the college library) normally covered in that class plus some lab concepts. This guide only helps identify the general areas of study in the class and does not claim to provide specifics about the Biology Placement Test. ◀

- Properties of Living Organisms
  - What defines living organisms separate from non-living things?
  - Discuss the scientific method and its use in acquiring knowledge.
- Atoms and Molecules
  - What are atoms? What are they made of?
  - How do we define and recognize one type of atom from another?
  - Discuss how atoms held together into molecules.
  - Discuss the structure and function of the major types of large molecules found in living organisms.
  - What are special properties of water? How do these properties benefit living organisms?
- Cells: Structure and Function
  - What are the types of cells found in living organisms? How are they different? How are they the same?
  - Discuss and be able to identify the structure and function of cellular subunits/organelles.
  - Discuss how cells exchange molecules with their environment and what affects different environments have on cells
- Cell Division
  - What are the processes by which cells reproduce or make new cells?
  - Be able to discuss the steps involved in cell division and understand the type of daughter cells that are formed.
  - How are chromosomes related to cell division?
- Metabolism
  - Discuss how cells acquire energy from food. What are the processes and what type of molecules are required for each step in the process?
  - How is energy expenditure different from reactions that build new molecules for the cell to use?
  - What important molecules are used in acquiring energy from food?
  - Where would you find these processes in a cell?
- Genetics
  - How are genes passed from one generation to the next?
  - Discuss Mendelian and modern genetics and the inheritance of traits.
  - Be able to show the possible outcomes of a genetic cross.
- DNA to Protein
  - Discuss how DNA is replicated and what is required for that to happen in a cell
  - Relate how DNA structure is related to structure of proteins.
  - How are proteins made in a cell? Where does this take place in the cell?