**Biology Study Guide**

**Chapter 7 Test: Cell Structure and Function**

* **7.1: Life is Cellular**
  + Objectives
    - Identify the parts of a light microscope
    - Calculate total magnification using different objective lenses on a light microscope
    - Use the correct procedure for focusing a light microscope
    - State the three components of cell theory
    - Summarize the contributions to cell theory made by Anton van Leeuwenhoek, Robert Hooke, and Theodore Schwann (see Cell Theory Ted-Ed video)
    - Differentiate between prokaryotes and eukaryotes with regards to cell size, complexity, and structure.
    - Classify animals, plants, bacteria, fungi, and protists as having either prokaryotic or eukaryotic cells.
  + Vocabulary
    - Light microscope
      * Body tube
      * Revolving nosepiece
      * Scanning objective lens
      * Low power objective lens
      * High power objective lens
      * Stage clips
      * Diaphragm
      * Light source
      * Ocular lens
      * Arm
      * Stage
      * Base
      * Coarse adjustment knob
      * Fine adjustment knob
    - Cell Theory
      * Robert Hooke
      * Theodore Schwann
      * Anton van Leeuwenhoek
    - Cell
      * Nucleus
      * Cell membrane
    - Prokaryote
      * Bacteria
    - Eukaryote
      * Animal
      * Plant
      * Fungi
      * Protist
* **7.2: Cell Structure**
  + Objectives
    - Identify various organelles on animal and plant cell diagrams
    - Match organelles to their function within the cell.
    - Categorize various organelles as being located in animal cells only, plant cells only, or both.
  + Vocabulary
    - Organelle
      * Cytoplasm
      * Vacuole
      * Lysosome
      * Cytoskeleton
      * Centriole
      * Ribosome
      * Rough endoplasmic reticulum
      * Smooth endoplasmic reticulum
      * Golgi apparatus
      * Chloroplast
      * Mitochondria
      * Cell wall
      * Cilia
      * Cell membrane
      * Nucleus
        + Nucleolus
        + Chromatin (DNA)
* **7.3: Cell Transport**
  + Objectives
    - Differentiate between active and passive transport
    - Identify, describe, and differentiate between the different types of passive transport (diffusion, facilitated diffusion, osmosis)
    - Describe and draw arrows showing how water will move in or out of the cell based on solute concentrations outside the cell.
    - Describe the effect different solutions (hypertonic, hypotonic, isotonic) will have on a cell
    - Identify, describe, and differentiate between different types of active transport (molecular, bulk)
    - Differentiate between endocytosis and exocytosis
  + Vocabulary
    - Passive transport
      * Diffusion
        + Concentration
        + Solute
      * Facilitated diffusion
        + Channel protein
        + Osmosis

Aquaporin

Hypertonic

Hypotonic

Isotonic

* + - Active transport
      * Molecular transport
      * Bulk transport
        + Endocytosis
        + Exocytosis