**Biochemistry Test Outline (Life Sciences 11)**

**Summary:**

1. **Not tested**: biological levels of organization
2. What does polarity mean? What are the consequences of the fact that water is polar?
3. What are 3 other reasons why water is essential to living things?
4. What is diffusion? What direction will a molecule diffuse?
5. Define and draw an image demonstrating a membrane that is: permeable, impermeable, selectively permeable.
6. Compare and contrast diffusion with osmosis.
7. Explain the meaning of the words: isotonic, hypertonic, hypotonic. Draw diagrams to show your understanding of these words.
8. How will an animal cell behave in an isotonic, hypertonic, or hypotonic solution? Compare this with the behaviour of a plant cell.
9. Compare and contrast passive transport with active transport. What are 3 ways a cell will engage in passive transport (hint: look at the summary slide)? How does a cell engage in active transport?
10. Give examples of proteins involved in passive transport and active transport. Include their names and a brief description of what these proteins do.

**Structure of Test:**

100% multiple choice, most likely approximately 35 questions

**Vocabulary:**   
*(Disclaimer: This is not meant to be an exhaustive list. Vocabulary words may appear on the test that are not in this list.)*

* Polar
  + Charge
  + Negative
  + Positive
  + Electron
* Hydrogen bond
* Universal solvent
* Cohesion
* Adhesion
* Capillary action
* Surface tension
  + Surface area
* Chemical reactions (be familiar with examples)
* Density
* Heat capacity
* Solution
  + Solute
  + Solvent
* Concentration
  + High concentration
  + Low concentration
  + Concentrated
  + Dilute
  + Concentration gradient
* Permeability
  + Permeable
  + Impermeable
  + Selectively permeable (semipermeable)
* Osmosis
  + Isotonic
  + Hypertonic
  + Hypotonic
* Cell structures:
  + Cell membrane
  + Cytoplasm
  + Cell wall
  + Vacuole
* Plant cell
* Animal cell
* Passive transport
  + Diffusion
  + Facilitated diffusion
* Active transport
* Transport protein
  + Carrier protein
    - GLUT1
  + Channel protein
    - Aquaporin
  + Pump (also known as “protein pump”)
    - Proton pump
    - Sodium-potassium pump

**Vocabulary Not Tested**

* Shriveled, normal, lysed, plasmolysed, flaccid, turgid, turgor pressure

**Primary Study Material:**

* Biochemistry Powerpoint + sources listed on powerpoint (especially crash course video)
* In-class notes
* Textbook section 5-4 (pg 99-104)