Biology 12 Module 1
Study Guide

Part A Multiple Choice 40 marks

- Validity of experimental data
- Validity of hypothesis
- Cell organelle structure and function (be able to recognize them from diagram)
- Water molecule properties
- Purpose of a buffer
- pH in human blood
- recognize structural diagrams and chemical formulas of the following: carbohydrate, glycogen, nucleotide, amino acid, disaccharide
- definition of organic molecules
- structure of proteins
- identify molecules that are: lipids, monosaccharides, disaccharides, polysaccharides, phospholipids
- rate of diffusion across semi permeable membrane
- complementary base pairs
- which molecule accounts for the flexible and fluid nature of a cell membrane
- how ATP releases energy
- fluid mosaic model
- what is energy used for in exocytosis

Terms to know/understand:

- diffusion
- peptide bond
- osmosis
- active transport
- hydrolysis
- facilitated transport
- transcription
- translation
- dehydration synthesis
- hypertonic
- hypotonic
- isotonic
- turgor pressure

Part B Short Answer 25 marks

- Describe, in detail, why the cells of a donor are sometimes rejected from a recipient's body.
- Describe how lysosomes, vacuoles, and the cell membrane are involved in endocytosis or the digestion of a macromolecule.
- Water is the most important molecule for living organisms. List three important functions in water in living organisms.
- An experiment study molecular movement through a semi permeable membrane is conducted. Salt and water solutions are placed in a container on either sides of a semi-permeable membrane. The membrane is permeable to both salt and water. The temperature remains constant 35℃.
    - Describe what would happen to the volume of each side after 10 hours.
    - Describe what would happen to the solute concentrations on both sides of the membrane.
    - If the experiment is repeated at a temperature of 10℃ instead of 35℃, do you think the results will be different?