Chemistry

Required:
Biochemistry

1. Define carbohydrates. Explain how they are synthesized and decomposed by dehydration synthesis and hydrolysis.

2. State the functions of carbohydrates.

3. Define classes of carbohydrates using the terms mono, di, and polysaccharides Give examples of each.

4. Define lipids. Explain how the building blocks of glycerol and fatty acids are combined and how they are decomposed.

5. State the functions of lipids in the human body.

6. Classify lipids by explaining the following terms: neutral fats, mono, di, tri glycerides, cholesterol, steroids, phospholipids, saturated and unsaturated fats.

7. Explain how proteins are made from their building blocks, amino acids. Use the terms: carboxyl and amino ends, C-N linkage, peptide bond, polypeptide, primary, secondary, and tertiary structure.

8. Explain the differences among a dipeptide, polypeptide and a protein.

9. Discuss the functions of proteins. Explain how their secondary and tertiary structure enables them to act with specificity.

10. Explain the structure of a nucleotide. Compare and contrast RNA and DNA nucleotides.

11. Explain how nucleic acids form from nucleotides.

12. Distinguish between DNA and RNA in terms of structure and function.

13. Describe the chemical composition of the energy molecule ATP. Explain why it is called a high energy molecule.

14. Define metabolism and discuss it using the following terms:
    - -anabolism
    - -catabolism
    - -hydrolysis
    - -dehydration synthesis
    - -exergonic reaction
    - -endergonic reaction