

Macromolecules

I. Molecules of Life

*Ch 5, with 4 as review

2.2.1 Define organic. 1

A. Carbohydrates and Lipids

2.2.3 Draw the ring structure of glucose and ribose. 1

2.2.4 Draw the structure of glycerol and a generalized fatty acid. 1

2.2.5 Outline the role of condensation and hydrolysis in the relationships between monosaccharides, disaccharides and polysaccharides; fatty acids, glycerol and glycerides; amino acids, dipeptides and polypeptides. 2

2.2.7 List two examples for each of monosaccharides, disaccharides and polysaccharides. 1

2.2.8 State one function of a monosaccharide and one function of a polysaccharide. 1

2.2.9 State three functions of lipids. 1

2.2.10 Discuss the use of carbohydrates and lipids in energy storage. 3

B. Proteins

*76-80

2.2.2 Draw the basic structure of a generalized amino acid. 1

2.2.6 Draw the structure of a generalized dipeptide, showing the peptide linkage. 1

6.5.1 Explain the four levels of protein structure, indicating each level's significance. 3

6.5.2 Outline the difference between fibrous and globular proteins, with reference to two examples of each protein type. 2

6.5.3 Explain the significance of polar and non-polar amino acids. 3

6.5.4 State six functions of proteins, giving a named example of each. 1

- ➔ What is the role of carbon in the molecular diversity of life?
- ➔ How do cells synthesize and break down macromolecules?
- ➔ How do structures of biologically important molecules account for their functions?