

Name: _____						
Subject: Biology		Class: 11 th	Time: 80 minutes	Total Marks:	40	
Chapter No.2 1 st half		MJDexpert.com			Obtained marks	

Note: Please attempt any 11 short questions from Question 2. Also, attempt both parts (a and b) of Question 3. Cutting and removal of any content is strictly prohibited.

Objective-Section

Q. 1 Encircle the correct answer. (10x1=10)

1. **Biochemistry is essential for understanding which aspects of living organisms?**
 - a. Anatomy and physiology b. Evolution and ecology c. Genetics and taxonomy d. Microbiology and immunology
2. **What is the main role of carbohydrates in cells?**
 - a. Energy source b. Genetic material c. Cell membrane structure d. Hormone production
3. **Which of the following is not a component of a bacterial cell according to the chemical composition table?**
 - a. DNA b. RNA c. Lipids d. Glycogen
4. **What type of bond forms when two carbon atoms share electrons?**
 - a. Ionic bond b. Covalent bond c. Hydrogen bond d. Metallic bond
5. **The ratio of hydrogen to oxygen in carbohydrates is similar to that in:**
 - a. Proteins b. Nucleic acids c. Water d. Lipids
6. **Which monosaccharide is most important biologically?**
 - a. Fructose b. Galactose c. Glucose d. Ribose
7. **What is the general formula for monosaccharides?**
 - a. $C_x(H_2O)_y$ b. $C_x(H_2O)_{y+1}$ c. $C_xH_2O_y$ d. $C_xH_2O_{y+1}$
8. **Which type of carbohydrate is starch classified as?**
 - a. Monosaccharide b. Oligosaccharide c. Polysaccharide d. Disaccharide
9. **What is the role of water in biochemical reactions?**
 - a. Solvent for non-polar substances b. Source of chemical energy
 - b. Medium for reactions and participant in hydrolysis d. Structural component of cell membranes
10. **Which type of bond is formed between two monosaccharides in a disaccharide?**
 - a. Glycosidic bond b. Ionic bond c. Hydrogen bond d. Peptide bond

Subjective-Section

Q.2 Write short answers of any ten of the following questions: (11x2=22)

- I. Define biochemistry.
- II. What are anabolic reactions? Provide an example.
- III. Explain the term 'tetravalent' as it pertains to carbon.
- IV. What is the significance of water's high specific heat capacity?
- V. List the main types of carbohydrates.
- VI. Differentiate between glucose and ribose in terms of their structure.
- VII. Describe the role of enzymes in biochemical reactions.
- VIII. What is the role of glycoproteins and glycolipids in cells?
- IX. Explain the difference between amylose and amylopectin.
- X. What is the primary function of cellulose in plants?
- XI. Describe the process of hydrolysis in carbohydrates.
- XII. How does water protect organs from damage?

Q.No.3 Long Question: (5+5=10)

- a. Describe the process of photosynthesis, including its role in the formation of glucose.
- b. Explain how carbohydrates are classified and provide examples of each type.