



INDIAN SCHOOL DARSAIT
DEPARTMENT OF CHEMISTRY



Subject: Chemistry		Topic : Biomolecules		Date of Worksheet: 29.10..2017	
Resource Person: SREEKALA M		Date of Submission: _____			
Name of the Student: _____		Class & Division: XII		Roll Number: _____	
1.	Write two main functions of carbohydrates in plants			1	
2.	What type of linkage holds together the monomer of DNA?			1	
3.	Except for vitamin B ₁₂ all other vitamins of group B and Vitamin C should be supplied regularly in diet. Why?			1	
4.	Name the two components of starch. How do they differ from each other structurally?			2	
5.	State what the following are and how they differ from each other. i) a nucleotide and a nucleoside ii) RNA and DNA			2	
6.	a) What changes occur in the nature of egg proteins on boiling? b) Name the type of bonding which stabilizes α -helix structure in proteins.			2	
7.	Name the products of hydrolysis of i) Sucrose ii) lactose. and iii) Maltose.			2	
8.	Mention any two properties of Glucose which cannot be explained by its open chain structure.			2	
9.	List any four vitamins. Mention the chief sources and functions of two of them.			2	
10.	Describe the following: i) Glycosidic linkage ii) Peptide linkage.			2	
11.	Name two water soluble vitamins, state their sources and the diseases caused due to their deficiency in diet.			2	
12.	What happens when D-Glucose is treated with the following reagents? i) HNO ₃ ii) HI iii) Bromine water.			3	

13.	Explain the following terms i) Invert sugar ii) Peptide linkage iii) Denaturation of proteins.	3
14.	An optically active compound having molecular formula $C_6H_{12}O_6$ is found in two isomeric forms (A) and (B) in nature. When (A) and (B) are dissolved in water they show the following equilibrium $(A) \xrightleftharpoons{52.2^\circ} \text{Equilibrium mixture} \xrightleftharpoons{19.2^\circ} (B)$ $[\alpha]_D = 111^\circ \qquad \qquad \qquad [\alpha]_D = 19.2^\circ$ i) What are such isomers called? ii) Can they be called enantiomers? Justify your answer. iii) Draw the cyclic structure of isomer (A)	3
15.	a) Give one example each for essential and non-essential amino acids. b) Differentiate between Keratin and Insulin. c) Write down the structures and names of the products formed when D-glucose is treated with ammoniacal silver nitrate solution.	3
16.	a) Despite having an aldehyde group Glucose does not give 2,4-DNP test. What does this indicate? b) Draw the Haworth structure of α -D-(+)-Glucopyranose c) What is the significance of D and (+) here?	3
17.	a) Write the chemical equations for the reactions of glucose with i) acetic anhydride. ii) NH_2OH . Also draw Fischer projections of D-glucose and L-glucose.	3
18.	a) Write the Zwitter ion structure of glycine. b) Name the vitamin in each case whose deficiency causes i) Night blindness ii) Poor coagulation of blood.	3