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Department of Biochemistry and Molecular Biology  
Shahjalal University of Science and Technology  
Course Title: Introductory Biochemistry (BMB 121)

1. What is mutarotation? Give the name of two cyclic form of D-glucose with their structure. 1+1
2. How monosaccharides react as a reducing agent? 2
3. Write the structure of following hexose derivatives. 1×4=4  
Muramic acid, β-D-Mannosamine, β-D-Glucose, β-D-Glucosamine
4. What is Glycosidic bond? 1
5. Write down the structure of maltose, trehalose and sucrose. 1×3=3
6. Write down the biological function of polysaccharide. 2
7. What are the major structural elements in biological fluid? 1
8. Write down the classification of lipid. 3
9. What is the contribution of Sanger and Thompson in diabetic patients? 2

Solved

1. What is the difference between ionic & covalent bond 3
2. What is hybridization? Define the hybridization of  $\text{CH}_4$  and  $\text{CO}_2$ . 4
3. Why the bond angle of  $\text{NH}_3$  is ~~107~~  $107^\circ$  instead of the regular angle of  $109.28^\circ$  3