**KIIT WORLD SCHOOL**

**ASSIGNMENT**

**CLASS 12 CHEMISTRY**

**BIOMOLECULES**

**KNOWLEDGE BASED**

**Q1.Which polysaccharide is stored in the liver of mammals?**

**Q2.Name two carbohydrates which acts as biofuels.**

**Q3. What purine and pyrimidine bases are present in DNA and RNA?**

**Q4. Hormones are chemical messengers. Explain.**

**Q5. Write two main functions of carbohydrates in plants.**

**Q6. What is Tollens reagent? How is it useful?**

**Q7. State important differences between DNA and RNA.**

**UNDERSTANDING**

**Q8. Define native state in reference to protein.**

**Q9. What forces are responsible for stability of α-helix?**

**Q10. Answer the following**

1. **Despite having aldehyde group, glucose does not give 2,4-DNP test. What does this indicate?**
2. **Draw Haworth structure of α-D-(+)-Glucopyranose.**
3. **What is the significance of D and (+) here?**

**Q11. What is the biological effect of denaturation of proteins?**

**APPLICATION/SKILL**

**Q12. If the fragment of one strand of DNA molecule has a base sequence of ATCTCGGTAGC , what is the base sequence of its complementary strand?**

**Q13. Give reasons for the following:**

1. **On electrolysis in acidic solution amino acids migrate towards cathode, while in alkaline solution they migrate towards anode.**
2. **Amino acids are amphoteric in nature.**

**HOTS**

**Q14. An optically active compound having molecular formula C6H12O6 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 Equilibrium mixture B**

**[α]D = 111® 52.2® 19.2®**

1. **What are such isomers called?**
2. **Can they be called enantiomers? Justify.**
3. **Draw the cyclic structure of isomer A.**

**Q15. How do you explain the presence of five –OH groups in glucose molecule?**

**Q16. An optically active amino acid (A) can exist in three forms depending on the pH of the medium. The molecular formula of A is C3H7NO2.**

**i) Write the structure of the compound in aq medium. What are such ions called?**

**ii) in which medium will the cationic form of compound A exist?**

**iii) In alkaline medium , towards which electrode will the compound A migrate in electric field?**

**Q17. Write the reaction of L-Glucose with Tollens reagent and its observation.**

**VBQ**

**Q18. Reetu takes sugar while Meenu prefers sucralose in tea/cold drink.**

1. **What could be the possible reason for it?**
2. **What is the value behind such a preference?**

**Q19. A diabetic patient wished to have homemade sweets. His wife went to a nearby market to buy artificial sweetner to make sweets. She noted two options- aspartame and sucralose, she purchased sucralose.**

**i) Why has she selected this?**

**ii) Is aspartame a dissacharide? How does sucralose differ from sucrose?**

**iii) whta values are displayed by her in such a preference?**

**ATTEMPT ALL INTEXT AND BACK EXERCISE QUESTIONS OF NCERT**