CHEMISTRY

CH: 14 BIOMOLECULES

Name: _____ Date:_____ Class: XII Sec: ___

Answer the following

1. Write the structure of the product obtained when glucose is oxidised with nitric acid.
2. What are the expected products of hydrolysis of lactose ?
3. Write the name of linkage present in a) protein b) Disaccharide
4. Which of the two components of starch is water soluble?
5. Differentiate between keratin and insulin ?
6. If a fragment of DNA molecule has the base sequence ATGCCGA; what is the base sequence of complementary strand?
7. In nucleoside a base is attached at 1' position of sugar moiety. Nucleotide is formed by linking phosphoric acid unit to the sugar unit of nucleoside. At which position of sugar phosphoric acid is linked?
8. What type of bonding helps in stabilising the α-helix structure of proteins?
9. Glucose does not give Schiff's test. Why?
10. Name a carbohydrate present in the liver, muscles and brain
11. Name the species formed when an aqueous solution of amino acid is dissolved in water.
12. Write chemical reactions to show that open structure of Dglucose contains the following :

    i) Straight chain (ii) Five alcohol groups (iii) Aldehyde as carbonyl group
13. What products would be formed when a nucleotide from DNA containing thymine is hydrolysed?

14. Define a) polysaccharides b) anomers c) amino acids d) zwitter ion
15. Differentiate between following :

(i) Amylose and Amylopectin (ii) Globular protein and Fibrous protein

(iii) Nucleotide and Nucleoside

16. Which monosaccharide units are present in starch, cellulose and glucose and which linkages link these units?

II. ASSERTION-REASON QUESTIONS

(a) Both assertion and reason are correct statements, and reason is the correct explanation of the assertion.

(b) Both assertion and reason are correct statements, but reason is not the correct explanation of the assertion.

(c) Assertion is correct, but reason is wrong statement.

(d) Assertion is wrong, but reason is correct statement.

1. Assertion: The hydrolysis of sucrose to glucose and fructose is called inversion of cane sugar.

Reason: The dextro rotatory sucrose forms a laevo rotatory mixture on hydrolysis.

2.Assertion: Glycine is not optically active.

Reason: There is no asymmetrical carbon in glycine to make it chiral.

3. Assertion: Amino acids in a protein remain intact even when it is denatured.

Reason: The primary structure of protein is broken to give individual amino acids on denaturation.

4. Assertion: Non-essential amino acids are not necessary for protein synthesis.

Reason: Non-essential amino acids are produced in the human body.

5. Assertion : D(+)– Glucose is dextrorotatory in nature.

Reason : ‘D’ represents its dextrorotatory nature

6. Assertion: Ka value of α-amino acids are very low

Reason: Amino acids exists as zwitter ions

7.Assertion: Glycine must be taken through diet

Reason: It is a non- essential amino acids

8.Assertion: Naturally occurring amino acids have L-configuration.

Reason: The structure of naturally occurring amino acids have similarity with L-glyceraldehyde.

9. Assertion: D(+) glucose is dextrorotatory in nature.

Reason: D represents its dextrorotatory nature.

10. Assertion:Glycine must be taken through diet.

Reason: It is a non essential amino acid

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