BYJU'S Study Planner for Board Term I
(CBSE Grade 12)

Date: 15/11/2021

Subject: Chemistry

Topic : Biomolecules

Class: Standard XII

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1. Polynucleotides are called nucleic acids. Each nucleotide is made up of three parts, i.e, a pentose sugar, a heterocyclic nitrogenous base and phosphoric acid. Depending upon the nature of sugar whether, ribose or deoxyribose, nucleic acids are called RNA and DNA respectively. In all, there are five nitrogenous bases, two of which are purines while the remaining three are pyrimidines. Out of these five bases, each type of nucleic acid has four of them.

   Which of the following sets of bases is present in both DNA and RNA?

   A. Adenine, uracil, thymine

   B. Adenine, guanine, cytosine

   C. Adenine, guanine, uracil

   D. Adenine, guanine, thymine

2. Polynucleotides are called nucleic acids. Each nucleotide is made up of three parts, i.e, a pentose sugar, a heterocyclic nitrogenous base and phosphoric acid. Depending upon the nature of sugar whether, ribose or deoxyribose, nucleic acids are called RNA and DNA respectively. In all, there are five nitrogenous bases, two of which are purines while the remaining three are pyrimidines. Out of these five bases, each type of nucleic acid has four of them.

   Which base is only found in the nucleotide of RNA?

   A. Adenine

   B. Uracil

   C. Guanine

   D. Cytosine

3. Polynucleotides are called nucleic acids. Each nucleotide is made up of three parts, i.e, a pentose sugar, a heterocyclic nitrogenous base and phosphoric acid. Depending upon the nature of sugar whether, ribose or deoxyribose, nucleic acids are called RNA and DNA respectively. In all, there are five nitrogenous bases, two of which are purines while the remaining three are pyrimidines. Out of these five bases, each type of nucleic acid has four of them.

   In nucleic acids, the nucleotides are linked to one another through:

   A. Hydrogen bond

   B. Peptide bond

   C. Glycosidic linkage

   D. Phosphodiester linkage

4. Which of the following analogies is correct?
   Primary structure: polypeptide bond ::
   Secondary structure:

   A. Ionic bonds

   B. Hydrogen bonds

   C. Ether bonds

   D. Peptide bonds

5.

Column - I	Column - II
(i) Keratin	(A) Aldohexose
(ii) Glucose	(B) Fibrous protien
(iii) Fructose	(C) Globular protein
(iv) Insulin	(D) Ketohexose

Which of the following is the best matched option?

A. i-C, ii- A, iii- D, iv-B

B. i-B, ii- A, iii- D, iv-C

C. i-B, ii- D, iii- A, iv-C

D. i-C, ii- D, iii- A, iv-B

6. Given below are two statements labelled as Assertion (A) and Reason (R).
Assertion (A): Proteins are made up of alpha amino acids.
Reason (R): During denaturation, secondary and tertiary structure of proteins are destroyed.

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but R is not the correct explanation of A

C. A is true but R is false

D. A is false but R is true

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7. Given below are two statements labelled as Assertion (A) and Reason (R).
Assertion (A): Glucose and fructose can be distinguished by Tollens' reagent.
Reason (R): Glucose contains an aldehyde group while fructose contains a keto group.

   A. Both A and R are true and R is the correct explanation of A

   B. Both A and R are true but R is not the correct explanation of A

   C. A is true but R is false

   D. A is false but R is true

8. Given below are two statements labelled as Assertion (A) and Reason (R).
Assertion (A): Nucleotides are phosphate esters of nucleosides
Reason (R): .The various nucleotides in nucleic acids are linked either through purine or pyrimidine bases.

   A. Both A and R are true and R is the correct explanation of A

   B. Both A and R are true but R is not the correct explanation of A

   C. A is true but R is false

   D. A is false but R is true

9. Identify the correct formula for the carbohydrate rhamnose ?

   A. $C_5H_{10}O_5$

   B. $C_6H_{12}O_5$

   C. $C_6H_{12}O_6$

   D. $C_{12}H_{22}O_{11}$

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10. Which of the following is a non-reducing sugar ?

A. Galactose

B. Glucose

C. Fructose

D. Sucrose

11. What does the following reaction of glucose with HI elucidates about the structure of glucose?

A. Shows the presence of $-CHO$ group.

B. Shows the presence of $C=O$ group.

C. Shows the presence of six carbons linked linearly.

D. Shows the presence of ring structure of glucose.

12. The reaction of glucose with acetic anhydride confirms the presence of how many hydroxy groups in glucose?

A. 3

B. 4

C. 5

D. 6

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13. Glycosidic linkage is an

A. ester linkage

B. peptide linkage

C. ether linkage

D. (a) and (c) above.

14. The hydroxyl group at which carbon is involved in ring formation of glucose?

A. C_3

B. C_4

C. C_5

D. C_6

15. Amino acids are building blocks of :

A. carbohydrates

B. proteins

C. vitamins

D. fats

16. If the carboxylic acid group of glycine and amino acid group of alanine undergo elimination of a water molecule, the name of the compound thus formed is

    A. alanylglycide (dipeptide)

    B. glycylalanide (tripeptide)

    C. glycylalanine (dipeptide)

    D. alanylglycine (dipeptide)

17. In aqueous solution, amino acids mostly exist as:

    A. $H_2N - CH(R) - COOH$

    B. $H_2N - CH(R) - COO^-$

    C. $H_3N^+ - CH(R) - COOH$

    D. $H_3N^+ - CH(R) - COO^-$

18. Which of the following factors is not responsible for the denaturation of proteins?

    A. Heat

    B. low pressure

    C. pH change

    D. None of the above

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19. The reason for double helical structure of DNA is operation of

    A. Vander Waal's forces

    B. Dipole-dipole interaction

    C. Hydrogen bonding

    D. Electrostatic attractions

20. Which of the following is not essential amino acid?

    A. Valine

    B. Lysine

    C. Histidine

    D. Glycine