INDIAN SCHOOL MUSCAT
CLASS 12
CHEMISTRY
BIOMOLECULES

1 Glucose on oxidation with Br_2(aq) gives
(a) Gluconic acid
(b) Tartaric acid
(c) Sachharic acid
(d) Meso-oxalic acid

2 In aqueous solution, an amino acid exist as
(a) cation
(b) anion
(c) zwitter ion
(d) neutral molecule

3 Which of the following is non-reducing sugar?
(a) Glucose
(b) Sucrose
(c) Maltose
(d) Lactose

4 α-helix structure of protein is stabilised by
(a) Peptide bonds
(b) van der Waals forces
(c) Hydrogen bonds
(d) Dipole-dipole interactions

5 Dinucleotide is obtained by joining two nucleotides together by phosphodiester linkage. Between which carbon atoms of pentose sugars of nucleotides are these linkages present?
(a) 5'and 3′
(b)1'and 5′
(c) 5′ and 5′
(d) 3′ and 3′

6 α-D (+) glucose and β-D (+) – glucose are
(a) Enantiomers
(b) Geometrical isomers
(c) Anomers
(d) Epimers

7 Kerating present in hair is an example of
(a) Fibrous protein
(b) Globular protein
(c) Conjugated protein
(d) Derived protein

8 DNA and RNA differ in
(a) Sugar

(b) Purines
(c) Pyrimidines
(d) Both (a) and (c)

9 Glucose is a _____
(a) monosaccharide
(b) disaccharide
(c) reducing sugar
(d) non-reducing sugar

10 Sugars are
A) Optically active polyhydroxy aldehydes
B Optically active polyhydroxy ketones
C) Optically active polyhydroxy aldehydes or ketones
D) Polyhydroxy aldehydes or ketones which may or may not be optically active

11 Which is monosaccharide
A)Glucose
B)Fructose
C) Galactose
D) All of these

12 Glucose contains
A) One -CHOgroup
B) Five-OH groups
C) One primary alcoholic group
D) Four secondary alcoholic groups
E) All are correct

13 Peptides are
A) Esters
B) Salts
C) Amides
D) Ketones

14 Isoelectric point is
A) Specific temperature
B) Suitable concentration of amino acid
C) Hydrogen ion concentration that does not allow migration of amino acid under electric field
D) Melting point of an amino acid under the influence of electric field

15 The base adenine occurs in
A)DNA only
B)RNA only
C)DNA and RNA both
D) Protein

16 Which one of the following rotates the plane polarized light towards left?
(a) D(+) Glucose
(b) L(+) Glucose
(c) D(-) Fructose
(d) D(+) Galactose

17 Fructose contains a ____functional group at carbon number____.
ketonic; 3
aldehydic; 2
ketonic; 2
aldehydic; 3

18 Glucose, on prolonged heating with HI, forms ____, suggesting that all the six carbon atoms are linked in a ____structure.
2-methylpentane, branched
n-hexane, straight
cyclohexane, cyclic
2-methylpentane, branched

19 Nucleotides are joined together by phosphodiester linkage between ____ and ____ carbon atoms of the pentose sugar.
5' and 3'
5' and 2'
5' and 5'
3' and 2'

20 _____ proteins are formed when polypeptide chains run parallel and are held together by ____and ____bonds.
Fibrous, hydrogen and disulphide
Globular, hydrogen and oxygen
Fibrous, hydrogen and nitrogen
Globular, hydrogen and disulphide

ASSERTION REASONING :

1 Assertion: D (+) – Glucose is dextrorotatory in nature.
Reason: 'D' represents its dextrorotatory nature.

2 Assertion : Protein are made up of α- amino acids.
Reason: During denaturation, secondary and tertiary structures of proteins are destroyed.

3 Assertion: All enzymes are made up of proteins and all proteins have three dimensional structures.
Reason: Secondary structures of protein are sequence of amino acids.

4 Assertion: All α -amino acids except glycine contain at least one chiral carbon.

Reason: Most naturally occurring amino acids have L-configuration.

5 Assertion: Deoxyribose is a carbohydrate.

Reason: Carbohydrates are hydrates of carbon, compounds which follow formula of carbohydrates.

6 Assertion: Two strands in double helical structure of DNA are complementary to each other.

Reason: Disulphide bonds are formed between specific pair of bases.

FILL IN THE BLANKS

1 Nucleic acids are the polymers of _____

2 Invert sugar is mixture of _____ and _____and is leavorotatory.

3 During denaturation of proteins, _____ and _____ structure are ruptured but _____ structure remains the same

4 Each polypeptide in a protein has amino acids linked with each other in a specific sequence. This sequence of amino acids is said to be _____

5 _____ is the linkage joining two amino acids.

6 $C_6H_{12}O_6$ is the molecular formula of _____ and _____

7 A carbohydrate which cannot be hydrolysed to simple sugars are _____

8 Sugar present in DNA is_____

9 Monosaccharide consisting of ketone as functional group is a _____

10 Insulin is an example of _____

11 _____proteins are insoluble in water.

12 A nucleotide consist of _____ ,_____ and _____.

13 In D(+) glucose, -OH on the lowest asymmetric carbon is on the ___side, which is comparable to (+) glyceraldehyde

14 The two different crystalline forms of glucose are ____ and ____

15 Amino acids with equal number of amino and carboxyl groups are ____

16 Oxidation of glucose as well as Gluconic acid with nitric acid yields ____.

17 A native protein when subjected to a physical change, like change in ____, or a chemical change, like change in ____, the ____ bond is disturbed. It loses its biological activity called denaturation of protein.

18 The two cyclic hemiacetal forms of glucose differ only in the configuration of the hydroxyl group at C1, called ____ carbon

19 In aqueous solution, the carboxyl groups can ____ a proton and amino group can ____a proton, giving rise to a dipolar ion known as ____.

20 Keratin present in hair is a ____protein whereas insulin is an example of _____protein.