

CHEMISTRY

BOOKS - KUMAR PRAKASHAN KENDRA CHEMISTRY (GUJRATI ENGLISH)

BIOMOLECULES

Section A Questions

1. Write a general note on carbohydrates.



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2. Give classification of carbohydrates.



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3. Give classification of oligosaccharides.



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4. Write a note on preparation of glucose.



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5. Give the suitable chemical tests that defines the open chain structure of glucose.



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6. Write a note on the relative configurations of glucose molecule.

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7. State the limitations of open chain structure of glucose.

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8. Write a note on cyclic structure of glucose.

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9. Explain mutarotation in glucose.

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10. Write a note on structure of fructose.



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11. Write a note on sucrose.

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12. Write a note on Maltose.

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13. Write a note on Lactose.

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14. Write a note on starch.

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15. Write a note on cellulose and glycogen.



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16. State importance of carbohydrates.



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17. Write general introduction to proteins and amino acids.



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18. Give the classification of amino acids based on number of amino and carboxyl groups.



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19. What are essential and non-essential amino acids ? Give two examples of each.

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20. Write a note on physical properties of amino acids.

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21. Write a note on peptides.

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22. Give the classification of proteins based on molecular shape.



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23. Enlist the points of difference between fibrous and globular proteins.



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24. Discuss the structure and shape of proteins.



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25. Write a note on denaturation of proteins.



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26. Write a note on enzymes and its mechanism of action.



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27. Write a note on vitamins.



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28. Give classification of vitamins.



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29. Enlist some important vitamins with their sources and the disease caused due to their deficiency in body.



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30. Write a note on chemical composition of nucleic acids.

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31. Explain structure of nucleic acids.

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32. Write a note on structure of DNA and RNA.

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33. State biological importance of nucleic acid.

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34. What are hormones ? Give its classification.



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35. State biological importance of hormones.



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Section B Intext Questions And Answers

1. Glucose or sucrose are soluble in water but cyclohexane or benzene (simple six membered ring compounds) are insoluble in water. Explain.



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2. What are the expected products of hydrolysis of lactose ?



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3. How do you explain the absence of aldehyde group in the pentaacetate of D-glucose ?



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4. The melting points and solubility in water of the amino acids are generally higher than that of the corresponding haloacids.

Explain.



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5. Where does the water present in the egg go after boiling the egg ?

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6. Why cannot vitamin-C be stored in our body ?

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7. What products would be formed when a nucleotide from DNA containing thymine is hydrolysed ?

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8. When RNA is hydrolysed, there is no relationship among the quantities of different bases obtained ? What does this fact suggest about the structure of RNA ?

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Section C Textual Exercise

1. What are monosaccharides ?

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2. What are reducing sugars ?

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3. Write two main functions of carbohydrates in plants.



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4. Classify the following into monosaccharides and disaccharides.

Ribose, 2-deoxyribose, maltose, galactose, fructose and lactose.



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5. What do you understand by the term glycosidic linkage ?



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6. What is glycogen ? How is it different from starch ?



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7. What are hydrolysis products of (i) Sucrose and (ii) Lactose ?



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8. What is the basic structural difference between the starch and cellulose ?



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9. Enumerate the reactions of D-glucose which cannot be explained by its open chain structure.



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10. What are essential and non-essential amino acids ? Give two examples of each type.

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11. Define the following as related to proteins :

(i) Peptide linkage

(ii) Primary structure

(iii) Denaturation

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12. What types of bonding helps in stabilizing the α -helix structure of proteins ?

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13. How do you explain the amphoteric behaviour of amino acids ?



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14. What are enzymes ?



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15. What is the effect of denaturation on the structure of proteins ?



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16. How are vitamins classified ? Name the vitamin responsible for the coagulation of blood.



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17. Why are vitamin A and vitamin C essential to us ? Give their important sources.

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18. What are nucleic acids ? Mention their two important functions.

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19. What is the difference between a nucleoside and a nucleotide ?

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20. The two strands of DNA are not identical but are complementary. Explain.



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21. Write the important structural and functional differences between DNA and RNA.



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22. What are the different types of RNA found in the cell ?



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1. Glycogen is a branched chain polymer of α -D-glucose units in which chain is formed by C1-C4 glycosidic linkage whereas branching occurs by the formation of C1-C6 glycosidic linkage.

Structure of glycogen is similar to

- A. Amylose
- B. Cellulose
- C. Amylopectin
- D. Glucose

Answer: B



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2. Which of the following polymer is stored in liver of animals ?

- A. Amylose

B. Cellulose

C. Amylopectin

D. Glycogen

Answer: D



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3. Sucrose (cane sugar) is a disaccharide. One molecule of sucrose on hydrolysis gives.....

A. 2 molecules of glucose

B. 2 molecules of glucose + 1 molecule of fructose

C. 1 molecule of glucose + 1 molecule of fructose

D. 2 molecules of fructose Ans

Answer: C

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4. Which of the following pairs represents anomers ?

A. 

B. 

C. 

D. 

Answer: C

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5. Proteins are found to have two different types of secondary structures viz. α -helix and β -pleated sheet structure α -helix structure of protein is stabilised by

- A. Peptide bonds
- B. van der Waal's forces
- C. Hydrogen bonds
- D. dipole-dipole interactions

Answer: B



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6. In disaccharide, if the reducing groups of monosaccharides, i.e., aldehydic or ketonic groups are bonded, these are non-reducing

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

A. 

B. 

C. 

D. 

Answer: B



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7. Which of the following acids is a vitamin ?

A. Aspartic acid

B. Ascorbic acid

C. Adipic acid

D. Saccharic acid

Answer: B



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8. 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'

Answer: A



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9. Nucleic acids are the polymers of

A. Nucleosides

B. Nucleotides

C. Bases

D. Sugars

Answer: B



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10. Which of the following statements is not true about glucose ?

A. It is an aldohexose

B. On heating with HI, it forms n-hexane

C. It is present in furanose form

D. It does not give 2,4-DNP test

Answer: C



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11. 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

A. Primary structure of proteins

B. Secondary structure of proteins

C. Tertiary structure of proteins

D. Quaternary structure of proteins

Answer: A



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12. DNA and RNA contain four bases each. Which of the following bases is not present in RNA ?

- A. Adenine
- B. Uracil
- C. Thymine
- D. Cytosine

Answer: C



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13. Which of the following B-group vitamins can be stored in our body ?

A. Vitamin B_1

B. Vitamin B_2

C. Vitamin B_6

D. Vitamin B_{12}

Answer: D



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14. Which of the following bases is not present in DNA ?

A. Adenine

B. Thymine

C. Cytosine

D. Uracil

Answer: D

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15. Three cyclic structures of monosaccharides are given below which of these are anomers.



A. I and II

B. II and III

C. I AND III

D. III is anomer of I and II

Answer: A

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16. Which of the following reactions of glucose can be explained by the cyclic structure ?

- A. Glucose forms pentaacetate
- B. Glucose reacts with hydroxylamine to form an oxide
- C. Pentaacetate of glucose does not react with hydroxylamine
- D. Glucose is oxidized by nitric acid to gluconic acid

Answer: C



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17. Optical rotations of some compounds along-with their structures are given below which of them have D-configuration.



A. I, II, III

B. II, III

C. I, II

D. III

Answer: A



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18. Structure of disaccharide formed by glucose and fructose is given below. Identify the anomeric carbon atoms in monosaccharide units :



A. 'a' carbon of glucose and 'a' carbon of fructose.

B. 'a' carbon of glucose and 'e' carbon of fructose.

C. 'a' carbon of glucose and 'b' carbon of fructose.

D. 'f' carbon of glucose and 'f' carbon of fructose.

Answer: C



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19. Three structures are given below in which two glucose units are linked. Which of these linkages between glucose units are between C1 and C4 and which linkages are between C1 and C6 ?



- A. (A) is between C1 and C4, (B) and (C) are between C1 and C6
- B. (A) and (B) are between C1 and C4, (C) is between C1 and C6
- C. (A) and (C) are between C1 and C4, (B) is between C1 and C6
- D. (A) and (C) are between C1 and C6, (B) is between C1 and C4

Answer: C



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Section D Ncert Exemplar Solution Multiple Choice Questions Mcqs More Than One Options

1. Carbohydrates are classified on the basis of their behaviour on hydrolysis and also as reducing or non-reducing sugar. Sucrose is a

- A. Monosaccharide
- B. Disaccharide
- C. Reducing sugar
- D. Non-reducing sugar

Answer: A::B::D



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2. Proteins can be classified into two types on the basis of their molecular shapes i.e., fibrous proteins and globular proteins.

Examples of globular proteins are

A. Insulin

B. Keratin

C. Albumin

D. Myosin

Answer: A::C::D



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3. Which of the following carbohydrates are branched polymer of glucose ?

A. Amylose

B. Amylopectin

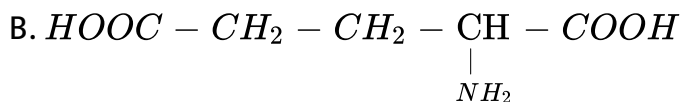
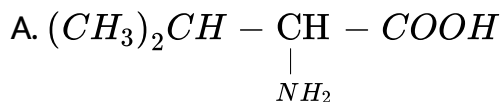
C. Cellulose

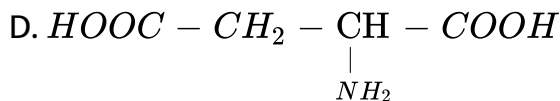
D. Glycogen

Answer: A::B::D

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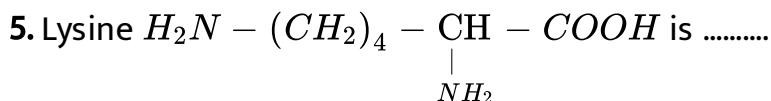
4. Amino acids are classified as acidic, basic or neutral depending upon the relative number of amino and carboxyl groups in their molecule. Which of the following are acidic ?





Answer: A::B::D

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- A. α -amino acid
- B. Basic amino acid
- C. Amino acid synthesized in body
- D. β -amino acid

Answer: A::B::D

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6. Which of the following monosaccharides are present as five membered cyclic structure (furanose structure) ?

A. Ribose

B. Glucose

C. Fructose

D. Galactose

Answer: A::C::D



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7. In fibrous proteins, polypeptide chains are held together by

.....

A. Van der Waal's forces

B. Disulphide linkage

C. Electrostatic forces of attraction

D. Hydrogen bonds

Answer: A::B::D



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8. Which of the following are purine bases ?

A. Guanine

B. Adenine

C. Thymine

D. Uracil

Answer: A::B::D





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9. Which of the following terms are correct about enzymes ?

- A. Proteins
- B. Dinucleotides
- C. Nucleic acids
- D. Biocatalyst

Answer: A::D



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Section D Ncert Exemplar Solution Short Answer Type Questions

1. Name the sugar present in milk. How many monosaccharide units are present in it ? What are such oligosaccharides called ?

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2. How do you explain the presence of all the six carbon atoms in glucose in a straight chain ?

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3. In a nucleoside, a base is attached at 1' position of sugar moiety. Nucleotide is formed by linking of phosphoric acid unit to the sugar unit of nucleoside. At which position of sugar unit is the phosphoric acid linked in a nucleoside to give a nucleotide ?

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4. Name the linkage connecting monosaccharide units in polysaccharides.

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5. Under what conditions, glucose is converted to gluconic acid and saccharic acid ?

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6. Monosaccharides contain carbonyl group hence are classified, as aldose or ketose. The number of carbon atoms present in the monosaccharide molecule are also considered for classification. In which class of monosaccharide will you place fructose ?

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7. The letters 'D' or 'L' before the name of a stereoisomer of a compound indicate the correlation of configuration of that particular stereoisomer. This refers to their relation with one of the isomers of glyceraldehyde. Predict whether the following compound has 'D' or 'L' configuration.



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8. Aldopentoses named as ribose and 2-Deoxyribose are found in nucleic acids. What is their relative configuration ?

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9. Which sugar is called invert sugar ? Why it is called so ?

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10. Amino acids can be classified as $\alpha -$, $\beta -$, $\gamma -$, $\delta -$ and so on depending upon the relative positions of amino group with respect to carboxyl group. Which type of amino acids form polypeptide chain in proteins ?



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11. α -helix is a secondary structure of proteins formed by twisting of polypeptide chain into right handed screw like structures. Which type of interactions are responsible for making the α -helix structure stable ?



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12. Some enzymes are made after the reaction where they are used. What name is given to class of enzymes which catalyse the oxidation of one substrate with simultaneous reduction of another substrate ?



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13. During the curdling of milk, what happens to sugar present in it ?



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14. How do you explain the presence of five -OH groups in glucose molecule ?



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15. Why does the compound (A) given below not form an oxime ?



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16. Why must vitamin C be supplied regularly in diet ?

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17. Sucrose is dextrorotatory but the mixture obtained after hydrolysis is laevorotatory. Explain.

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18. Amino acids behave like salts rather than simple amines or carboxylic acids. Explain.

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19. Structures of glycine and alanine are given below. Show the peptide linkage in glycylalanine.

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20. Protein found in a biological system with a unique three-dimensional structure and biological activity is called a native protein. When a protein in its native form, is subjected to a physical change like change in temperature or a chemical change like, change in pH, denaturation of proteins takes. Explain the cause.



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21. Activation energy for the acid catalysed hydration of sucrose is 6.22kJmol^{-1} , while the activation energy is only 2.15kJmol^{-1} when hydrolysis is catalysed by the enzyme sucrase. Explain.



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22. Which moieties of nucleosides are involved in the formation of phosphodiester linkages present in dinucleotides ? What does the word diester in the name of linkage indicate ? Which acid is involved in the formation of this linkage ?



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23. What are glycosidic linkages? In which type of biomolecules are they present ?

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24. How do enzymes help a substrate to be attacked by the reagent effectively ?

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25. Describe the term D- and L- configuration used for the amino acids with examples.

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26. How will you distinguish 1° and 2° hydroxyl groups present in glucose ? Explain with reactions.

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27. Coagulation of egg white on boiling is an example of denaturation of protein. Explain it in terms of structural changes.

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Section D Ncert Exemplar Solution Matching The Columns

1. Match the vitamins given in Column-I with the deficiency diseases they cause given in Column-II.



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2. Match the following enzymes given in Column-I with the reactions they catalyse given in Column-II.



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Section D Ncert Exemplar Solution Assertion And Reason Type

1. Assertion (A) : D-(+)-Glucose is a dextrorotatory in nature.

Reason (R) : 'D' represents its dextrorotatory nature.

- A. Assertion and reason both are correct statements and reason explains the assertion.
- B. Both assertion and reason are wrong statements.

C. Assertion is correct statement and reason is wrong statement.

D. Assertion is wrong statement and reason is correct statement.

Answer: C



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2. Assertion (A) : Vitamin D can be stored in our body.

Reason (R) : Vitamin D is fat-soluble vitamin.

A. Assertion and reason both are correct statements and reason explains the assertion.

B. Both assertion and reason are wrong statements.

C. Assertion is correct statement and reason is wrong statement.

D. Assertion is wrong statement and reason is correct statement.

Answer: A



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3. Assertion (A) : β -glycosidic linkage is present in maltose,



Reason (R) : Maltose is composed of two glucose units in which C-1 of one glucose unit is linked to C-4 of another glucose unit.

A. Assertion and reason both are correct statements and reason explains the assertion.

B. Both assertion and reason are wrong statements.

C. Assertion is correct statement and reason is wrong statement.

D. Assertion is wrong statement and reason is correct statement.

Answer: D



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4. Assertion (A) : All naturally occurring α -amino acids except glycine are optically active.

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

- A. Assertion and reason both are correct statements and reason explains the assertion.
- B. Both assertion and reason are wrong statements.
- C. Assertion is correct statement and reason is wrong statement.
- D. Assertion and reason both are correct statement, but reason does not explain assertion.

Answer: D



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5. Assertion (A) : Deoxyribose, $C_5H_{10}O_4$, is not a carbohydrate.

Reason (R) : Carbohydrates are hydrates of carbon so compounds which follow $C_x(H_2O)_y$ formula are carbohydrates.

- A. Assertion and reason both are correct statements and reason explains the assertion.
- B. Both assertion and reason are wrong statements.
- C. Assertion is correct statement and reason is wrong statement.
- D. Assertion is wrong statement and reason is correct statement.

Answer: B



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6. Assertion (A): Glycine must be taken through diet.

Reason (R) : It is an essential amino acid.

- A. Assertion and reason both are correct statements and reason explains the assertion.
- B. Both assertion and reason are wrong statements.
- C. Assertion is correct statement and reason is wrong statement.
- D. Assertion is wrong statement and reason is correct statement.

Answer: B



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7. Assertion (A) : In presence of enzymes, substrate molecule can be attacked by the reagent effectively.

Reason (R) : Active sites of enzymes hold the substrate molecule in a suitable position.

- A. Assertion and reason both are correct statements and reason explains the assertion.
- B. Both assertion and reason are wrong statements.
- C. Assertion is correct statement and reason is wrong statement.
- D. Assertion is wrong statement and reason is correct statement.

Answer: A



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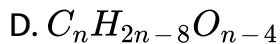
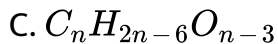
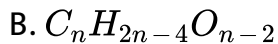
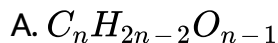
8. Carbohydrates are essential for life in both plants and animals. Name the carbohydrates that are used as storage molecules in plants and animals, also name the carbohydrates which is present in wood or in the fibre of cotton clothes.



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Section E Multiple Choice Questions Mcqs Darpan S Exam Oriented Mcqs

1. The general formula of disaccharides is



Answer: A



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2. Which of the following is not correct statements with respect to carbohydrates ?

- A. All carbohydrates are optically active
- B. Carbohydrates are called saccharides.
- C. All carbohydrates have aldehyde as a principal functional group.
- D. Carbohydrates are primarily produced from plants.

Answer: C



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3. Which of the following is not a sugar ?

- A. Glycogen

B. Maltose

C. Lactose

D. Galactose

Answer: A



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4. Which of the following is obtained on hydrolysis of sucrose ?

A. α -D-(+)-Glucose and β -D-(-)-Fructose

B. β -D-(+)-Glucose and α -D-(-)-Fructose

C. α -D-(+)-Glucose and α -D-(-)-Fructose

D. β -D-(+)-Glucose and β -D-(-)-Fructose

Answer: A



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5. Which of the following does not show mutarotation ?

- A. Sucrose
- B. Fructose
- C. Maltose
- D. Lactose

Answer: A

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6. Which of the following is not a reducing sugar ?

- A. Fructose
- B. Galactose

C. Sucrose

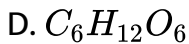
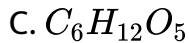
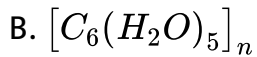
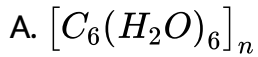
D. Lactose

Answer: C



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7. The molecular formula of starch is



Answer: B



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8. All the following statements are correct except.....

- A. All the disaccharides are reducing sugars.
- B. All the monosaccharides are reducing sugars
- C. All the carbohydrates are optically active
- D. All the carbohydrates have aldehyde or ketone as a principal functional group.

Answer: A



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9. Grape sugar is

- A. Sucrose
- B. Glucose

C. Fructose

D. Lactose

Answer: B



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10. The glucose gets oxidized to saccharic acid in presence of HNO_3 . This indicates the presence of

A. Primary alcohol groups in glucose

B. Five hydroxyl group in glucose

C. Aldehyde group in glucose

D. Linear chain structure of glucose.

Answer: A



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11. Which reaction confirms the presence of $>C=O$ group in glucose ?

- A. Formation of oxime with hydroxyl amine
- B. Oxidation of glucose to gluconic acid.
- C. Reduction of Tollen's reagent.
- D. Oxidation of glucose to saccharic acid.

Answer: A



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12. Which reaction confirms the presence of aldehyde group in glucose ?

- A. Formation of Schiff's base
- B. Formation of Saccharic acid by oxidation.
- C. Oxidation to Gluconic acid by Bromine
- D. Formation of cyanohydrin by reaction with HCN

Answer: C

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13. Consider the following compounds and identify the correct relations :



- A. I and II are anomers
- B. II and III are anomers
- C. I and III are anomers

D. I, II and III are anomers of each other.

Answer: C



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14. D-Glucose with excess HIO_4 gives

- A. 5 moles of formic acid + 1 mol of formaldehyde.
- B. 5 moles of formaldehyde + 1 mol of formic acid.
- C. 4 moles of formic acid + 2 moles of formaldehyde.
- D. 4 moles of formaldehyde + 2 moles of formic

Answer: A



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15. Tollen's reagent is not reduced by

A. α -D- Glucoside

B. Lactose

C. Glucose

D. Maltose

Answer: A



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16. D-Mannose and D-Glucose are

A. C2 epimers

B. C4 epimers

C. C3 epimers

D. C5 epimers

Answer: A



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17. D-Glucose and D-Galactose are

A. C2 epimers

B. C4 epimers

C. C3 epimers

D. C5 epimers

Answer: B



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18. D-Glucose with alkaline Cut gives .

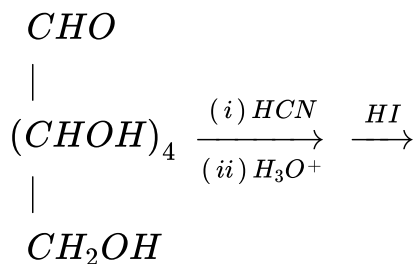
- A. Gluconic acid
- B. Saccharic acid
- C. n-Hexane
- D. Hexanedioic acid

Answer: A



[View Text Solution](#)

19. The major product in the reaction is



- A. Heptanoic acid
- B. n-hexane
- C. Hexanedioic acid
- D. Saccharic acid

Answer: A

 [View Text Solution](#)

20. Identify the incorrect statement with respect to starch :

- A. Starch has α -linkages
- B. It is water insoluble carbohydrate.
- C. Starch is made of two components: Amylose (major) and Amylopectin (minor)
- D. It is principal storage of polysaccharide of plants.

Answer: C

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21. The specific rotation for the α -anomer of a carbohydrate is $+29^\circ$ and that of β -anomer is -17° . Due to mutarotation, the equilibrium specific rotation is $+14^\circ$. The percentage of α -anomer is

A. 67.4 %

B. 32.6 %

C. 70.67 %

D. 29.33 %

Answer: A

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22. The total number of asymmetric carbons in α -D-Glucose are

.....

A. 4

B. 5

C. 3

D. 6

Answer: A



[View Text Solution](#)

23. Which linkage is present in disaccharide ?

A. Amide

B. Glycosidic

C. Phosphodiester

D. Carboxylic

Answer: B



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24. Which of the following is not a property of disaccharide ?

A. Crystalline nature

B. Water solubility

C. Sweet taste

D. Amide linkage

Answer: D



[View Text Solution](#)

25. Which is the most abundant carbohydrate in a plant kingdom ?

A. Glycogen

B. Cellulose

C. Starch

D. Galactose

Answer: B



[View Text Solution](#)

26. The sugar present in DNA and RNA is

A. Aldopentoses

B. Aldotrioses

C. Ketopentoses

D. Ketotrioses

Answer: A

 [View Text Solution](#)

27. Which solvent is used to dissolve cellulose ?

A. Ethanol

B. Water

C. Acetonitrile

D. Ammonical $Cu(OH)_2$ solution.

Answer: D

 [View Text Solution](#)

28. The maltose and glucose can be distinguished chemically by

.....

- A. Molisch's test
- B. Barfoed's test
- C. Million's test
- D. Biuret's test

Answer: B



[View Text Solution](#)

29. The presence of carbohydrate is detected chemically by

.....

- A. Xanthoproteic test

B. Ninhydrin test

C. Molisch's test

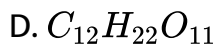
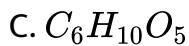
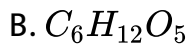
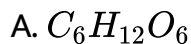
D. Barfoed's test

Answer: C



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30. The formula of Rhamnose is



Answer: B





[View Text Solution](#)

31. The disaccharide present in the milk is $C_6H_{12}O_6$

A. Sucrose

B. Lactose

C. Maltose

D. Galactose

Answer: B



[View Text Solution](#)

32. Glucose when heated with CH_3OH in presence of dry HCl gas, α - and β - methyl glucosides are formed . This is because it contains

- A. An aldehyde group
- B. Primary alcohol group
- C. A ring structure
- D. Five hydroxyl group

Answer: C



View Text Solution

33. Glucose is not a

- A. Carbohydrate
- B. Disaccharide
- C. Aldohexose
- D. Aldopentose

Answer: B



View Text Solution

34. Starch is used to test even a small of

- A. Urea in blood
- B. Iodine in aqueous solution
- C. Protein in blood
- D. Glucose in aqueous solution

Answer: B



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35. Diabetes is detected by testing urine of the patient with

- A. Tollen's reagent
- B. Nessler's reagent
- C. Benedict's reagent
- D. Brady's reagent

Answer: C



[View Text Solution](#)

36. Glucose reacts with Tollen's reagent to give

- A. Monocarboxylic acid
- B. Dicarboxylic acid
- C. Ketone
- D. Ketoacid

Answer: A

 [View Text Solution](#)

37. The disaccharide that gives only glucose on hydrolysis is

A. Galactose

B. Sucrose

C. Lactose

D. Maltose

Answer: D

 [View Text Solution](#)

38. Glucose does not give violet colour with

A. NaHSO_3

B. Tollen's reagent

C. Fehling's solution

D. Schiff's reagent

Answer: D



View Text Solution

39. Which of the following has very high molecular mass ?

A. Sucrose

B. Cellulose

C. Maltose

D. Lactose

Answer: B

 [View Text Solution](#)

40. A carbohydrate X having molecular mass 180g mol^{-1} has one primary alcoholic group and four secondary alcoholic group . It reacts with acetic anhydride to form pentaacetate . The molecular mass of pentaacetate formed is

A. 180

B. 210

C. 390

D. 42

Answer: C

 [View Text Solution](#)

41. Cell wall of bacteria is made of

- A. Cellulose
- B. Cellobiose
- C. Starch
- D. Glycogen

Answer: A



[View Text Solution](#)

42. Which of the following is known as reserve carbohydrate ?

- A. Cellulose
- B. Glycogen
- C. Cellobiose

D. Starch

Answer: B



[View Text Solution](#)

43. The reactions of sugars are generally carried out in presence of acidic or neutral medium but not in a alkaline medium because in alkaline medium sugars undergo

A. Decomposition

B. Racemization

C. Rearrangement

D. Inversion

Answer: C



[View Text Solution](#)

44. The most abundant biomol in the living w system is

- A. Proteins
- B. Carboydrate
- C. Lipids
- D. Nucleic acid

Answer: A



[View Text Solution](#)

45. Which amino acid is optically inactive ?

- A. Glycine
- B. Proline

C. Alanine

D. Phenyl alanine

Answer: A



[View Text Solution](#)

46. Which amino acid has secondary amino group ?

A. Proline

B. Lysine

C. Arginine

D. Alanine

Answer: A



[View Text Solution](#)

47. Which amino acid shows the strong basic character ?

- A. Lysine
- B. Arginine
- C. Tryptophan
- D. Glutamine

Answer: B



[View Text Solution](#)

48. Which amino acid contains sulphur ?

- A. Methionine and Cysteine
- B. Asparagine and Isoleucine
- C. Tryptophan and Methionine

D. Cysteine and Asparagine

Answer: A



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49. Which of the following pairs of amino acids are essential amino acids ?

A. Phenyl alanine and Glutamine

B. Tryptophan and Histidine

C. Tyrosine and Asparagine

D. Isoleucine and Aspartic acid

Answer: B



[View Text Solution](#)

50. Which is not the characteristics of amino acids ?

- A. Water soluble
- B. Amorphous solid
- C. High melting points
- D. Salt like behaviour

Answer: B



[View Text Solution](#)

51. Which of the following cannot exist as Zwitter ion ?

- A. Glycine
- B. Sulphanilic acid
- C. p - amino benzoic acid

D. Alanine

Answer: C



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52. The pH value at which the amino acid does not migrate under the influence of electric field is called

- A. Isoelectric point
- B. Isoelectronic point
- C. Equivalence point
- D. Neutralization point

Answer: A



[View Text Solution](#)

53. Protein is described as a

- A. Polyamide
- B. Polyester
- C. Polypeptide
- D. Polyurethane

Answer: A



[View Text Solution](#)

54. The helical structure of protein is stabilised by

- A. Ionic bond
- B. H - bond
- C. Van dar Waal's forces

D. Covalent bond

Answer: B



[View Text Solution](#)

55. In proteins , the α - amino acids are linked by

A. Amide linkage

B. Phosphodiester linkage

C. Glycosidic linkage

D. Carboxyl linkage

Answer: A



[View Text Solution](#)

56. Which of the following is globular proteins ?

A. Enzymes

B. Keratin

C. Fibroin

D. Albumin

Answer: A



[View Text Solution](#)

57. The number of tripeptides formed by three different amino acids is

A. Five

B. Six

C. Three

D. Four

Answer: B



[View Text Solution](#)

58. The incorrect example is

A. Keratin and Myosin - Fibrous proteins

B. Insulin and Albumin- Globular proteins

C. Glycylalanine - Dipeptide

D. Haemoglobin - Derived protein

Answer: D



[View Text Solution](#)

59. In an amino - acid , the carboxyl group ionises at $pK_{a_1} = 2.34$ and the ammonium ion at $pK_{a_2} = 9.60$. The isoelectric point of the amino acid is at pH

A. 5.97

B. 2.34

C. 9.6

D. 6.97

Answer: A



[View Text Solution](#)

60. Lysine at pH =3.5 exists as

A. 

B. 

C. 

D. 

Answer: A



[View Text Solution](#)

61. Which amino acid has the amidine group ?

A. Lysine

B. Arginine

C. Asparagine

D. Lysine

Answer: B





[View Text Solution](#)

62. The total number of amino acids in insulin is

A. 51

B. 45

C. 67

D. 39

Answer: A



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63. A mixture contains three amino acids A ($pI = 3.2$) and B ($pI = 5.7$) and C ($pI = 9.7$). When it is subjected to electrophoresis at

pH = 7.7, in which direction will each component of the mixture move ?

- A. A to anode , B and C to cathode
- B. A to anode , B no movement , C to cathode
- C. A and B to anode and C to cathode
- D. A to cathode , B no movement , C to anode

Answer: C



[View Text Solution](#)

64. Which amino acids have the equal number of carboxyl and amino groups ?

- A. Lysine
- B. Alanine

C. Arginine

D. Histidine

Answer: B



[View Text Solution](#)

65. Which of the following proteins are sensitive to the change in pH ?

A. Keratin

B. Albumin

C. Myosin

D. Fibroin

Answer: B



[View Text Solution](#)

66. Which forces are not responsible for the stability of the tertiary structure of proteins ?

- A. Disulphide linkages
- B. Covalent bonding
- C. Electrostatic forces
- D. Hydrogen bonds

Answer: B



[View Text Solution](#)

67. Which of the following is not a function of proteins in the human body ?

- A. Prevention of activities of antigens in the body
- B. Growth and maintenance of the body
- C. Transport and store nutrients in the body
- D. Act as a major source of energy

Answer: D



[View Text Solution](#)

68. The protein found in biological system with unique three - dimensional structure and biological activity is called

- A. Conjugated proteins
- B. Derived proteins
- C. Native proteins
- D. Prosthetic groups

Answer: C



View Text Solution

69. The amino acid chain with a mass of 10000 u is called

- A. Polypeptide
- B. Proteins
- C. Oligopeptide
- D. Macro - peptide

Answer: B



View Text Solution

70. Bio-catalyst are

A. Globular proteins

B. Fibrous proteins

C. Carbohydrates

D. Lipids

Answer: A



View Text Solution

71. The hydrolysis of ester to carboxylic acid and alcohol takes place easily in presence of enzyme

A. Esterase

B. Carboxylase

C. Lipase

D. Alcohol dehydrogenase

Answer: C



View Text Solution

72. The denaturation of proteins can be carried out easily by

.....

- A. Addition of solvents such as acetone
- B. Addition of detergents such as sodium dodecyl sulphate
- C. Change in pH and Temperature
- D. All of these

Answer: D



View Text Solution

73. Emulsin hydrolyse

- A. Lactose
- B. Maltose
- C. Sucrose
- D. Cellobiose

Answer: A



[View Text Solution](#)

74. Myoglobin protein has

- A. Primary structure
- B. Secondary structure
- C. Tertiary structure

D. Quaternary structure

Answer: C



[View Text Solution](#)

75. A mixture of two or more than two amino acids are separated by

- A. Osmosis
- B. Ultracentrifugation
- C. Electrodialysis
- D. Electrophoresis

Answer: D



[View Text Solution](#)

76. Which of the following can be concluded from AN the primary structure of proteins ?

A. Proteins are made of only D-amino acids.

B. A small change in the sequence of amino E acids may change the physical and chemical properties of amino acids.

C. The amino acids in peptide chain have the definite sequence.

The repeating sequences within the protein molecule are common.

D. A protein may contain more than one amino acid chains that are linked by S-S linkages.

Answer: D



[View Text Solution](#)

77. Which of the following peptide is obtained in a blood plasma of person with high blood pressure ?

A. Oxytocin

B. Vasopressin

C. Angiotensin

D. Gonadotropin

Answer: C



[View Text Solution](#)

78. The amino acid with primary alcohol group is

A. Cysteine

B. Isoleucine

C. Serine

D. Valine

Answer: B



View Text Solution

79. In α -helix structure of protein, each turn has nearly
number of amino acids.

A. 3.6

B. 5

C. 4

D. 2.7

Answer: A



View Text Solution

80. Which structure of proteins remains unaffected by denaturation ?

- A. Primary
- B. Secondary
- C. Tertiary
- D. Quaternary

Answer: A



[View Text Solution](#)

81. Which of the following is not a protein ?

- A. Hair

B. Silk

C. Nails

D. DNA

Answer: D



[View Text Solution](#)

82. The enzyme pepsin hydrolyses

A. Proteins to amino acids

B. Fats to carboxylic acids

C. Polysaccharides to monosaccharides

D. Nucleotides to Nucleic acids

Answer: A





[View Text Solution](#)

83. The number of amino acid that human body can synthesise is

A. 20

B. 10

C. 14

D. 18

Answer: B



[View Text Solution](#)

84. Which of the following statements are incorrect ?

A. Globular proteins are converted to fibrous proteins.

B. Fibrous proteins are converted to globular proteins.

C. Primary structure of protein is not disturbed.

D. Protein loses its biological activity.

Answer: B



[View Text Solution](#)

85. Which of the following are examples of fibrous proteins ?

A. Hair

B. Silk

C. Albumin

D. Nails

Answer: C



[View Text Solution](#)

86. Which of the following elements is not found in amino acids ?

A. Oxygen

B. Nitrogen

C. Sulphur

D. Phosphorus

Answer: D



[View Text Solution](#)

87. The protein present in the milk is

A. Casein

B. Insulin

C. Myosin

D. Keratin

Answer: A



[View Text Solution](#)

88. Which of the following is true with respect to enzymes ?

A. Enzymes lack nucleophilic groups.

B. Enzymes are highly specific both in binding substrate and in catalysing their reactions

C. Enzymes are fibrous proteins.

D. Enzymes completely gets utilised in the reaction.

Answer: B



[View Text Solution](#)

89. The globular protein is present in

- A. Blood
- B. Muscles
- C. Nails
- D. Hair

Answer: A



[View Text Solution](#)

90. The amino acid in neutral solution exist as.....

- A. Cation
- B. Anion
- C. Zwitter ion

D. Neutral molecule

Answer: C



[View Text Solution](#)

91. At pH = 4, glycine exists as

A. Cation

B. Anion

C. Zwitter ion

D. Neutral molecule

Answer: A



[View Text Solution](#)

92. How many amide linkages are present in penta-peptides ?

A. 10

B. 4

C. 5

D. 9

Answer: B



[View Text Solution](#)

93. All of the following amino acids participates in H-bonding except

A. Cysteine

B. Valine

C. Threonine

D. Serine

Answer: B



[View Text Solution](#)

94. Which of the following amino acids is a precursor for a mediator of allergies and inflammation ?

A. Histidine

B. Tryptophan

C. Tyrosine

D. Phenyl alanine

Answer: A



[View Text Solution](#)

95. Which amino acid has non-polar R- group ?

- A. Phenyl alanine, Tyrosine and Tryptophan
- B. Glycine, Alanine and Leucine
- C. Lysine, Arginine and Histidine
- D. Serine, Threonine and Cysteine

Answer: B



[View Text Solution](#)

96. Which two amino acids have the net negative charge at pH = 7.0 ?

- A. Lysine and Histidine

B. Aspartic acid and Glutamic acid

C. Aspartic acid and Histidine

D. Glutamic acid and Lysine

Answer: B



[View Text Solution](#)

97. Which of the following features of protein is not observed at the iso-electric point ?

A. Maximum solubility

B. Maximum electrophoretic migration

C. Maximum precipitation

D. Maximum viscosity

Answer: A



[View Text Solution](#)

98. In the presence of enzyme sucrase, the activation energy of sucrose hydrolysis is lowered to

A. 6.22kJ/mol^{-1}

B. 2.15kJ/mol^{-1}

C. 4.07kJ/mol^{-1}

D. 1.48kJ/mol^{-1}

Answer: B



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99. Prosthetic group of glyco-protein is.....

- A. Lipid
- B. Carbohydrate
- C. Nucleic acid
- D. Vitamin

Answer: B



[View Text Solution](#)

100. Vitamin B_1 is

- A. Thymine
- B. Thiamine
- C. Pyridoxine

D. Riboflavin

Answer: B



[View Text Solution](#)

101. Which vitamin is not found in plants?

A. Vitamin B_{12}

B. Vitamin B_6

C. Vitamin B_2

D. Vitamin B_1

Answer: A



[View Text Solution](#)

102. Which vitamin increases the blood clotting time ?

A. Vitamin B_{12}

B. Vitamin E

C. Vitamin K

D. Vitamin D

Answer: C



[View Text Solution](#)

103. Which of the following is not a fat-soluble vitamin ?

A. Vitamin K

B. Vitamin E

C. Vitamin A

D. Vitamin C

Answer: D



[View Text Solution](#)

104. Beri-Beri is caused due to deficiency of

A. Vitamin B_1

B. Vitamin B

C. Vitamin C

D. Vitamin D

Answer: A



[View Text Solution](#)

105. Niacin is

- A. Vitamin B_3
- B. Vitamin B_6
- C. Vitamin B_{12}
- D. Vitamin B_2

Answer: A



[View Text Solution](#)

106. Cheilosis is caused due to deficiency of

- A. Vitamin B_{12}
- B. Vitamin B_2
- C. Vitamin K

D. Vitamin E

Answer: B



[View Text Solution](#)

107. Osteomalacia is caused due to deficiency of

A. Vitamin D

B. Vitamin B₂

C. Vitamin E

D. Vitamin B₆.

Answer: A



[View Text Solution](#)

108. The RBC deficient Haemoglobin is a sign of.....

- A. Vitamin B_{12} deficiency
- B. Vitamin B_6 deficiency
- C. Vitamin K deficiency
- D. Vitamin D deficiency

Answer: A



[View Text Solution](#)

109. The vitamin that function as visual pigment is

- A. Retinol
- B. Pyridoxine
- C. Riboflavin

D. Ascorbic acid

Answer: A



[View Text Solution](#)

110. Epilepsy is caused due to deficiency of.....

A. Vitamin B_6

B. Vitamin B_{12}

C. Vitamin E

D. Vitamin K

Answer: A



[View Text Solution](#)

111. Sterility is caused because of

- A. Vitamin E deficiency
- B. Vitamin K deficiency
- C. Vitamin A deficiency
- D. Vitamin D deficiency

Answer: A



[View Text Solution](#)

112. Vitamin D deficiency causes

- A. Rickets
- B. Scurvy
- C. Convulsions

D. Cheilosis

Answer: A



[View Text Solution](#)

113. Which vitamin act as anti-oxidant ?

A. Vitamin C

B. Vitamin B_1

C. Vitamin A

D. Vitamin D

Answer: A



[View Text Solution](#)

114. Xerophthalmia is caused due to deficiency of

- A. Vitamin A
- B. Vitamin B_{12}
- C. Vitamin C
- D. Vitamin E

Answer: A



[View Text Solution](#)

115. Biotin is a chemical name of

- A. Vitamin H
- B. Vitamin B_{12}
- C. Vitamin B_6

D. Vitamin B_1

Answer: A



[View Text Solution](#)

116. Which of the following is the purine base ?

A. Cytosine

B. Thymine

C. Adenine

D. Uracil

Answer: C



[View Text Solution](#)

117. Which of the following is absent in RNA ?

A. Thymine

B. Adenine

C. Guanine

D. Cytosine

Answer: A



[View Text Solution](#)

118. Which of the following statements are true with respect to DNA ?

A. Sugar component of nucleotide is deoxyarabinose

B. Sugar component of a nucleoside is deoxyribose.

- C. In nucleotides, the base is attached to sugar moiety by phosphodiester linkage.
- D. The sugars of DNA have L-configuration.

Answer: B



[View Text Solution](#)

119. Nucleoside is composed of.....

- A. Sugar+ Base + Phosphate
- B. Base + Sugar
- C. Phosphate + Sugar
- D. Phosphate + Base

Answer: B





[View Text Solution](#)

120. The nucleotides are joined by

- A. Glycosidic linkage
- B. Phosphodiester linkage
- C. Peptide linkage
- D. H-bonds

Answer: B



[View Text Solution](#)

121. Which of the following is correct with respect to phosphodiester linkage ?

- A. 5'-phosphate group of one nucleotide unit is joined to the 3'-hydroxyl group of another nucleotide.
- B. 3'-phosphate group of one nucleotide unit is joined to the 5'-hydroxyl group of another nucleotide.
- C. 5'-phosphate group of one nucleotide unit is joined to the 5'-hydroxyl group of another nucleotide.
- D. 3'-phosphate group of one nucleotide unit is joined to the 3'-hydroxyl group of another nucleotide.

Answer: A



[View Text Solution](#)

122. Chromosomes are made of

- A. Only nucleic acids

- B. Only proteins
- C. Proteins and nucleic acid
- D. Proteins and carbohydrates

Answer: C



[View Text Solution](#)

123. The Guanine and Cytosine in DNA are bonded by

- A. Two H-bonds
- B. One H-bond
- C. Three H-bonds
- D. Four H-bonds

Answer: C





[View Text Solution](#)

124. In DNA, Thymine and Adenine are bonded by

- A. Two H-bonds
- B. One H-bond
- C. Three H-bonds
- D. Four H-bonds

Answer: A



[View Text Solution](#)

125. Information regarding the sequence of nucleotides in the chain of a nucleic acid is called

- A. Primary Structure

B. Secondary structure

C. Tertiary structure

D. Quaternary structure

Answer: A



[View Text Solution](#)

126. The chemical basis of heredity is called

A. DNA

B. RNA

C. Chromosomes

D. Nucleosides

Answer: A





[View Text Solution](#)

127. Which of the following statements is true ?

- A. Proteins are synthesized by RNA molecules but the message for the synthesis of a particular protein is present in DNA.
- B. Proteins are synthesized by DNA molecules but the message for the synthesis of a particular protein is present in RNA.
- C. RNA is regarded as reserve of genetic information.
- D. RNA is capable of self-duplication during cell division.

Answer: A



[View Text Solution](#)

128. The hormones that regulates glucose level in blood are

.....

- A. Glucagon and Collagen
- B. Insulin and Glycogen
- C. Glucagon and Insulin
- D. Collagen and Glucagon

Answer: C



[View Text Solution](#)

129. The iodinated derivative of amino acid tyrosine is known as

.....

- A. Epinephrine

B. Thyroxine

C. Testosterone

D. Norepinephrine

Answer: B



[View Text Solution](#)

130. The hormones that mediate the response to external stimuli are

A. Epinephrine

B. Adrenaline

C. Eicosanoids

D. Thyroxine

Answer: A



View Text Solution

131. What is precursor of steroid hormone ?

- A. Protein
- B. Carbohydrate
- C. Cholesterol
- D. Lipid

Answer: C



View Text Solution

132. Which of the following controls carbohydrate metabolism and modulates inflammatory reactions ?

- A. Adrenaline
- B. Epinephrine
- C. Norepinephrine
- D. Glucocorticoids

Answer: D



[View Text Solution](#)

133. The hormone responsible for the secondary male characteristics and physical constitution is

- A. Progesterone

B. Testosterone

C. Estradiol

D. Cholesterol

Answer: B



[View Text Solution](#)

134. The principal hormone responsible for development of female characteristics in controlling of menstrual cycle is.....

A. Progesterone

B. Testosterone

C. Estradiol

D. Cholesterol

Answer: C



View Text Solution

135. The hormone responsible for preparing uterus for implantation of fertilised egg is

- A. Progesterone
- B. Testosterone
- C. Estradiol
- D. Cholesterol

Answer: A



View Text Solution

136. The hormone that maintains the level of excretion of salt and water by kidney is

- A. Mineral corticoids
- B. Thyroxine
- C. Norepinephrine
- D. Milatonin

Answer: A



View Text Solution

137. Addison's disease can be cured by

- A. Glucocorticoids
- B. Thyroxine

C. Norepinephrine

D. Noradrenaline

Answer: A



[View Text Solution](#)

138. Which of the following biomolecules act as intercellular messenger ?

A. Hormones

B. Proteins

C. Vitamins

D. Nucleic acids

Answer: A



[View Text Solution](#)

[View Text Solution](#)

139. Which of the following is a peptide hormone ?

- A. Glucagon
- B. Epinephrine
- C. Adrenaline
- D. Glucocorticoids

Answer: A



[View Text Solution](#)

Section E Mcqs Asked In Competitive Exam

1. Which type of bond is present in DNA base ?

- A. Ionic bond
- B. Oxo bond
- C. Hydrogen bond
- D. Metallic bond

Answer: C



View Text Solution

2. Which is main component of starch ?

- A. Glucose
- B. Fructose
- C. (A) and (B) both
- D. Maltose

Answer: A



View Text Solution

3. Which of the following is not the true protein?

A. Cotton

B. Nail

C. Hair

D. DNA

Answer: D



View Text Solution

4. Which order is true for nucleic acid ?

A. Phosphate → Base → Sugar

B. Sugar → Base → Nucleotide

C. Base → Sugar → Phosphate

D. Base → Phosphate → Sugar

Answer: C



View Text Solution

5. Sugar is

A. Mono saccharide

B. D-Glucose

C. Saccharide of D-Glucose and D-Fructose

D. Dsaccharide of two molecule of Glucose

Answer: C



View Text Solution

6. Hydrolysis of sucrose is known as reaction.

A. Hydration

B. Saponification

C. Hydrogenation

D. Inversion

Answer: D



View Text Solution

7. Which vitamin is required for Xerophthalima ?

A. B_2

B. A

C. E

D. C

Answer: B



View Text Solution

8. Which scientist shows di-helix structure of DNA ?

A. Amil Fischer

B. Watson and Crick

C. Dr. Khurana

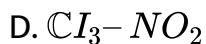
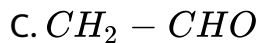
D. Michel Farade

Answer: B



View Text Solution

9. Which molecule is responsible for the production of Zwitter ion ?



Answer: B



View Text Solution

10. Which amino acid is not chiral ?

- A. Glycine
- B. Veline
- C. Proline
- D. Histadiene

Answer: A



[View Text Solution](#)

11. Which reaction occurs when sucrose react with dilute H_2SO_4 ?

- A. Oxidation
- B. Reduction
- C. Hydrolysis

D. Dehydration

Answer: C



[View Text Solution](#)

12. Which components are present in nucleotide ?

A. Organic sugar

B. Base contain nitrogen

C. Phosphoric acid

D. All of these

Answer: D



[View Text Solution](#)

13. Which is water soluble vitamin ?

A. Vitamin-D

B. Vitamin-E

C. Vitamin-A

D. Vitamin-C

Answer: D



[View Text Solution](#)

14. Cellulose is a polymer of

A. Glucose

B. Sucrose

C. Ribose

D. Fructose

Answer: A



[View Text Solution](#)

15. Which element is present in vitamin B_{12} ?

A. Fe(II)

B. Co(III)

C. Zn (I)

D. Co (II)

Answer: B



[View Text Solution](#)

16. Which Mutarotation is not observed in.....

- A. Sucrose
- B. D-Glucose
- C. L-Glucose
- D. None of these

Answer: A



[View Text Solution](#)

17. Which carbon have different arrangement of α and β glucose

?

- A. C_1
- B. C_2

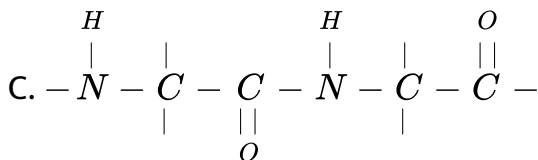
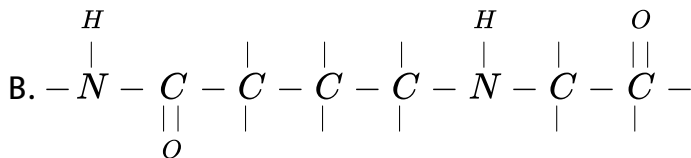
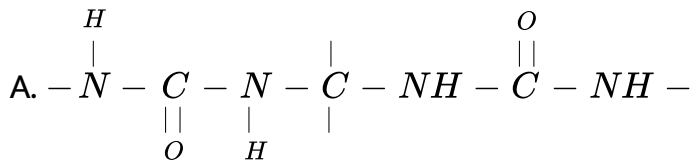
C. C_3

D. C_5

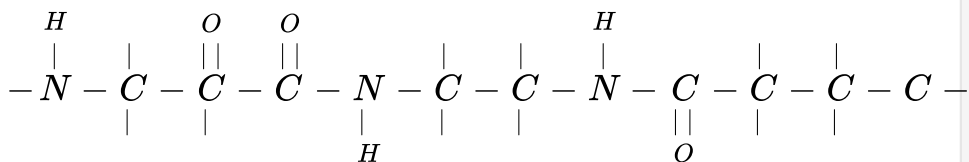
Answer: A

 **View Text Solution**

18. Which structure represents the peptide bond ?



D.



Answer: C



View Text Solution

19. Which of the following is not produced by human body ?

A. Vitamin

B. Catalyst

C. Enzyme

D. DNA

Answer: A



View Text Solution

20. Which vitamin is water soluble ?

A. Vitamin-E

B. Vitamin-K

C. Vitamin-A

D. Vitamin-B

Answer: D



View Text Solution

21. Which is not correct for Amino Acid ?

A. It is component of protein structure.

B. It has high boiling point.

C. Natural Amino Acid having D-configuration.

D. Having characteristic of point.

Answer: C



View Text Solution

22. GLy-Al-Gly which formula is true for Tripeptide ?

A. 

B. 

C. 

D. 

Answer: C



View Text Solution

23. Which nitrogen base is not present in DNA ?

A. Adenine

B. Guanine

C. Cytosine

D. Uracil

Answer: D



[View Text Solution](#)

24. Which vitamin is not soluble in fat ?

A. Vitamin-A

B. Vitamin-K

C. Folic acid

D. Vitamin-E

Answer: C



[View Text Solution](#)

25. Which nitrogen base is present in RNA but not present in DNA ?

- A. Uracil
- B. Thymine
- C. Cytosine
- D. Adenine

Answer: A



[View Text Solution](#)

26. Lactose has

- A. only α -D-Glucose
- B. α -D-Glucose and β -D-Glucose
- C. α -D-Glucose and β -D-Galactose
- D. α -D-Glucose and α -D-Glucose

Answer: C



[View Text Solution](#)

27. 2^o structure of protein have

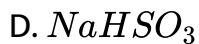
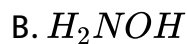
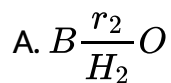
- A. Hydrogen bond
- B. Covalent bond
- C. Ionic bond

D. Di-sulphide bond

Answer: A

 [View Text Solution](#)

28. Glucose does not reacts with



Answer: D

 [View Text Solution](#)

29. Which vitamin is not soluble in water ?

A. Vitamin- B_2

B. Vitamin- B_6

C. Vitamin-C

D. Vitamin-D

Answer: D



[View Text Solution](#)

30. Which is not aldose ?

A. Glucose

B. Ribose

C. Fructose

D. Menose

Answer: C



[View Text Solution](#)

Section E Mcqs Asked In Jee Neet Aaims

1. What is importance of Enzyme in daily life ?

- A. Flow of oxygen.
- B. Producing energy.
- C. Catalysation of biochemical reaction.
- D. Stabilisation energy of photosynthesis.

Answer: C



[View Text Solution](#)

2. What is relation between α -D-(+)-glucose and β -D-(-)-glucose of Fischer structure ?

- A. Mirror image isomers
- B. Chain Isomers
- C. Enantiomers
- D. Anomers

Answer: D



[View Text Solution](#)

3. Complete hydrolysis of cellulose gives.....

- A. L-Glucose

B. D-Fructose

C. D-Ribose

D. D-Glucose

Answer: D



[View Text Solution](#)

4. 

Arrange X, Y and Z in decreasing order of acidity.

A. $X > Z > Y$

B. $Z < X > y$

C. $X > Y > Z$

D. $Z > X > Y$

Answer: A



View Text Solution

5. Mutarotation is not observed in

A. (+) Maltose

B. (-) Fructose

C. (+) Sucrose

D. Lactose

Answer: C



View Text Solution

6. Hydrolysis of which saccharide does not give aldose or ketose ?

- A. Disaccharide
- B. Monosaccharide
- C. Polysaccharide
- D. Oligosaccharide

Answer: B



View Text Solution

7. Vitamin C is

- A. Citric acid
- B. Lactic acid
- C. Paracetamol
- D. Ascorbic acid

Answer: D

 [View Text Solution](#)

8. Which compound does not show mutarotation ?

A. (+) maltose

B. (-) fructose

C. (+) sucrose

D. lactose

Answer: C

 [View Text Solution](#)

9. Which of the following is absent in DNA ?

- A. Uracil
- B. Guanine
- C. Phosphoric Acid
- D. Ribose sugar

Answer: A



[View Text Solution](#)

10. Which product is obtained when glucose is reacted with Tollen's reagent ?

- A. Mono carboxylic acid
- B. Dicarboxylic acid
- C. Ketone
- D. Keto acid

Answer: A



View Text Solution

11. Hydrolysis of sucrose gives

- A. Glucose and fructose
- B. Galactose and maltose
- C. Galactose and glucose
- D. None of these

Answer: A



View Text Solution

12. The DNA and RNA differs in arrangement of -OH group on which carbon atom ?

- A. First
- B. Second
- C. Third
- D. Fourth

Answer: B



[View Text Solution](#)

13. Hydrolysis of proteins give

- A. Peptide
- B. α -Amino acid

C. Enzyme

D. Amine and carbolylic acid

Answer: B



[View Text Solution](#)

14. Synthesis of each molecule of glucose in photosynthesis involves :

A. 18 molecules of ATP

B. 10 molecules of ATP

C. 8 molecules of ATP

D. 6 molecules of ATP

Answer: A



[View Text Solution](#)

15. Which one of the following bases is not present in DNA ?

- A. Cytosine
- B. Thymine
- C. Quinoline
- D. Adenine

Answer: C



[View Text Solution](#)

16. Which of the vitamins given below is water soluble ?

- A. Vitamin C
- B. Vitamin D

C. Vitamin E

D. Vitamin K

Answer: A



[View Text Solution](#)

17. Thiol group is present in:

A. Methionine

B. Cytosine

C. Cystine

D. Cysteine

Answer: D



[View Text Solution](#)

18. In a protein molecule various amino acids are linked together by :

- A. β -glycosidic bond
- B. peptide bond
- C. dative bond
- D. α -glycosidic bond

Answer: B



[View Text Solution](#)

19. The correct statement regarding RNA and DNA, respectively is:

- A. The sugar component in RNA is ribose and the sugar component in DNA is 2'-deoxyribose.

B. The sugar component in RNA is arabinose and the sugar component in DNA is ribose.

C. The sugar component in RNA is 2'-deoxyribose and the sugar component in DNA is arabinose.

D. The sugar component in RNA is arabinose and the sugar component in DNA is 2- deoxyribose.

Answer: A



[View Text Solution](#)

20. Which of the following is non-reducing sugar ?

A. Lactose

B. Glucose

C. Sucrose

D. Maltose

Answer: C



[View Text Solution](#)

21. The central dogma of molecular genetics states that the genetic information flows from :

A. DNA \rightarrow RNA \rightarrow Proteins

B. DNA \rightarrow RNA \rightarrow Carbohydrates

C. Amino acids \rightarrow Proteins \rightarrow DNA

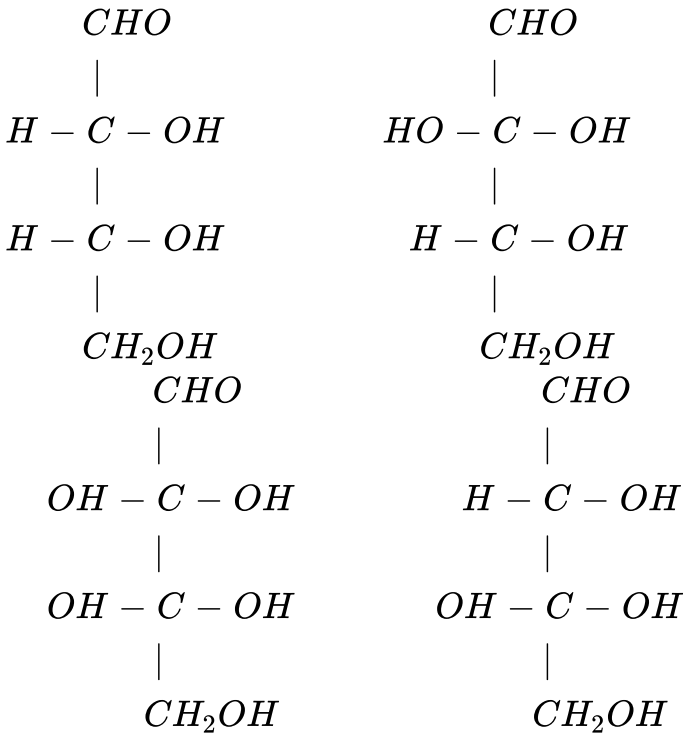
D. DNA \rightarrow Carbohydrates \rightarrow Proteins

Answer: A



[View Text Solution](#)

22. The correct corresponding order names of four aldoses with configuration given below.



respectively, is :

- A. L-erythrose, L-threose, D-erythrose, D-threose
- B. D-erythrose, D-threose, L-erythrose, L-threose
- C. L-erythrose, L-threose, L-erythrose, D-threose
- D. D-threose, D-erythrose, L-threose, L-erythrose

Answer: B



[View Text Solution](#)

23. Which of the following compounds will behave as a reducing sugar in an aqueous KOH solution ?

A. 

B. 

C. 

D. 

Answer: A



[View Text Solution](#)

24. Glucose on prolonged heating with HI gives :

- A. n-Hexane
- B. 1-Hexene
- C. Hexanoic acid
- D. 6-iodohexanal

Answer: A



[View Text Solution](#)

25. The predominant form of histamine present in human blood is

(pK_a , Histidine = 6.0)

A. 

B. 

C. 

D. 

Answer: D

 [View Text Solution](#)

26. The difference between amylose and amylopectin is :

A. Amylose is made up of glucose and galactose

B. Amylopectin have $1 \rightarrow 4, \alpha$ -linkage and $1 \rightarrow 6, \alpha$ -linkage

C. Amylopectin have $1 \rightarrow 4, \alpha$ -linkage and $1 \rightarrow 6, \beta$ -linkage

D. Amylose have $1 \rightarrow 4, \alpha$ -linkage and $1 \rightarrow 6, \beta$ -linkage

Answer: B

 [View Text Solution](#)

27. The increasing order of pK_a of following amino acids in aqueous solution is

A. *Asp* < *Gly* < *Arg* < *Lys*

B. *Arg* < *Lys* < *Gly* < *Asp*

C. *Gly* < *Asp* < *Arg* < *Lys*

D. *Asp* < *Gly* < *Lys* < *Arg*

Answer: D



[View Text Solution](#)

28. The number of stereo-centres present in linear and cyclic structure of glucose are respectively

A. 4 and 5

B. 5 and 5

C. 4 and 4

D. 5 and 4

Answer: A



[View Text Solution](#)

29. The non-essential amino acid among the following is

.....

A. Valine

B. Leucine

C. Alanine

D. Lysine

Answer: C



[View Text Solution](#)

30. Match :



A. i ii iii iv
 s q p r

B. i ii iii iv
 r p q s

C. i ii iii iv
 p r q s

D. i ii iii iv
 s r q p

Answer: B



[View Text Solution](#)

31. Which of the given statement is not true for glucose ?

- A. The pentacetate glucose does not react with hydroxylamine to give oxime.
- B. Glucose reacts with hydroxylamine to form oxime.
- C. Glucose gives Schiff's test for aldehyde.
- D. Glucose exists in two crystalline forms α and β .

Answer: C



[View Text Solution](#)

Section E Mcqs Asked In Board Exams

1. Which solvent is used for cellulose ?

- A. Organic solvents
- B. Water
- C. Ammonical cupric hydroxide
- D. None of these

Answer: C



View Text Solution

2. Which is not true for glucose ?

- A. $-CH_2OH$ Group
- B. $-CHO$ group
- C. Four $-CHOH$ group
- D. One $C = O$ group

Answer: D



View Text Solution

3. Which disease caused by Vitamin H deficiency ?

A. Xerophthalima

B. Animia

C. Skin disease

D. Scurvy

Answer: C



View Text Solution

4. Base sugar phosphate unit of nuclic acid is known as

- A. nucleotide
- B. nucleoside
- C. phosphotide
- D. none of these

Answer: A



[View Text Solution](#)

5. What is chemical name of vitamin B_{12} ?

- A. Pyridoxine
- B. Cyanocobalamine
- C. Riboflavin
- D. Thiamin

Answer: B



View Text Solution

6. Which base is present in place of thiamine in RNA ?

- A. Uracil
- B. Cytosine
- C. Guanine
- D. Adenine

Answer: A



View Text Solution

7. Which vitamin is not obtained from plants ?

- A. Thiamine
- B. Cyanocobalamine
- C. Pyridoxine
- D. α -Tocopherol

Answer: B

 [View Text Solution](#)

8. When sucrose is heated to 483 K temperature, it loses water and forms a brown amorphous substance called

- A. Aspartame
- B. Caramel
- C. Alitame
- D. Sucrolose

Answer: B



View Text Solution

9. Which of the following amino acid is neutral ?

A. Glycine

B. Aspartic acid

C. Lysine

D. Arginine

Answer: A



View Text Solution

10. For which vitamin liver is not the source ?

A. Vitamin - B_1

B. Vitamin - B_2

C. Vitamin- B_{12}

D. Vitamin - H

Answer: A



[View Text Solution](#)

11. In which of the following compound, all the monosaccharide units are not joined by $C_1 - O - C_4$ chain.

A. Maltose

B. Lactose

C. Cellulose

D. Amylopectin

Answer: D



View Text Solution

12. Which of the following acid possesses Zwitter ion ?

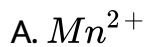
- A. Picric acid
- B. Salicylic acid
- C. Sulphanilic acid
- D. Adipic acid

Answer: C



View Text Solution

13. Which ion can not be as a cofactor in enzymes ?



Answer: D



View Text Solution

14. What is the chemical name of vitamin B_1 ?

A. Riboflavin

B. Pyridoxine

C. Thiamine

D. α -Tocopherol

Answer: C



[View Text Solution](#)

15. Which amino acid contain secondary amino group in its structure ?

A. Glycine

B. Lysine

C. Alanine

D. Proline

Answer: D



[View Text Solution](#)

16. Which one is a purine base ?

- A. Uracil
- B. Thymine
- C. Cytosine
- D. Guanine

Answer: D



[View Text Solution](#)

17. Which of the following amino acid has pH greater than 7 ?

- A. Glutamic acid
- B. Lysine
- C. Glycine

D. Alanine

Answer: B



[View Text Solution](#)

18. Stachyose is which of the following type of saccharide ?

A. Oligosaccharide

B. Trisaccharide

C. Disaccharide

D. Tetrasaccharide

Answer: A::D



[View Text Solution](#)

19. Which of the following Dicarboxylic acid is obtained on oxidation of glucose by strong oxidising agent HNO_3 ?

- A. Oxalic acid
- B. Malonic acid
- C. Saccharic acid
- D. Gluconic acid

Answer: C



[View Text Solution](#)

20. The observed angle of rotation of 2.0 gm sucrose containing 20 ml of aqueous solution in a polarimeter tube of 15 cm length is $+15.3^\circ$. What is the specific rotation of this solution of sucrose ?

A. 104°

B. 102°

C. 96.5°

D. 102.9°

Answer: B



[View Text Solution](#)

21. Which of the following statements is true ?

A. Enzymes are obtained in original form at the end of reaction.

B. Enzymes increase the rate of reaction by 10-12 times.

C. Enzymes are carbohydrates.

D. Enzymes are not obtained in original form at the end of reaction.

Answer: A

 [View Text Solution](#)

22. Which of the following statements is incorrect ?

A. A, G, C and U are present in RNA

B. A and T are joined together by two hydrogen bonds in DNA

C. A and C are purine bases

D. T and U are pyrimidine bases

Answer: C

 [View Text Solution](#)

23. Deficiency of which of the following vitamins causes bone deformation in children ?

- A. Biotine
- B. Tocopherol
- C. Calciferol
- D. Phylloquinone

Answer: C



[View Text Solution](#)

24. What is the use of brown amorphous substance obtained, when Sucrose is heated to 483 K ?

- A. As artificial sweetening agent.

- B. As antioxidants.
- C. As food colours.
- D. As food preservatives.

Answer: C



[View Text Solution](#)

25. Which of the following compound is trisaccharide ?

- A. Cellobiose
- B. Raffinose
- C. Stachyose
- D. Lactose

Answer: B





[View Text Solution](#)

26. In which of the following compounds, all Glucose units are not joined by $C_1 - O - C_4$ linkage ?

- A. Maltose
- B. Amylopectin
- C. Galactose
- D. Lactose

Answer: B



[View Text Solution](#)

27. For which of the following Vitamin, Liver is not a source ?

- A. B_2

B. H

C. B_{12}

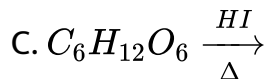
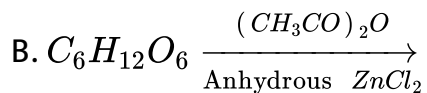
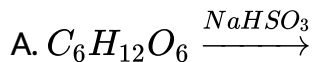
D. B_6

Answer: D



[View Text Solution](#)

28. Which of the following reaction not indicates the linear structure of Glucose ?



D. 

Answer: A

 [View Text Solution](#)

29. The observed angle of rotation of 0.2 gm of Sucrose in 1 ml of aqueous solution in a Polarimeter tube 1 dm long is $+13.3^\circ$.

What is the specific rotation of the solution of Sucrose ?

A. -66.5°

B. $+66.5^\circ$

C. $+6.65^\circ$

D. 1

Answer: B

 [View Text Solution](#)

30. Which is different from others ?

A. Glycogen

B. Dextrin

C. Cellulose

D. Stachyose

Answer: D

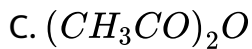


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31. Which is the reagent whose reaction with glucose indicates the presence of Carbonyl group in it ?

A. NH_2OH

B. Conc. HNO_3



D. HI

Answer: A



[View Text Solution](#)

32. Fructose has a specific rotation -92.4° . An aqueous solution of Fructose has an observed rotation of -27.7° , when placed in a polarimeter tube of 10 cm long. How much amount of Fructose is dissolved in 100 ml of aqueous solution ?

A. 3.0 gm

B. 33.3 gm

C. 29.9 gm

D. 3.33 gm

Answer: C



View Text Solution

33. By which bond, the polypeptide chains are joined in tertiary structure of protein ?

[P] Van der Waal's attraction

[Q] H-bond

[R] Ionic bond

[S] Disulphide bond

A. P and Q

B. P, Q and S

C. Only Q

D. P, Q, R and S

Answer: D



[View Text Solution](#)



Which of the following will make the reaction to occur very rapidly ?

- A. Lipase
- B. Emulsin
- C. Invertase
- D. Maltase

Answer: A



[View Text Solution](#)

35. Ascorbic acid is a.....

- A. Hormone
- B. Vitamin m
- C. Protein
- D. Nucleic acid

Answer: B



View Text Solution

36. Which of the following is not a bio-polymer ?

- A. Polysaccharide.
- B. Protein.
- C. Butyl rubber.
- D. Nucleic acid.

Answer: C



[View Text Solution](#)

37. How many different tripeptide chains can be prepared by combining three amino acid A, B and C in different order ?

A. 6

B. 4

C. 3

D. 8

Answer: A



[View Text Solution](#)

38. Which structure of protein is α -(alpha) helix ?

- A. Tertiary
- B. Secondary
- C. Primary
- D. Quarternary

Answer: B



[View Text Solution](#)

39. What is caused due to deficiency of vitamin H ?

- A. Bone deformation
- B. Scurvy
- C. Skin disease

D. Anemia

Answer: C



[View Text Solution](#)

40. Two nucleotides combine with each other by to which chain ?

A. Phosphodiester

B. Peptide

C. Glycoside

D. Disulphide

Answer: A



[View Text Solution](#)

41. Which of the following does not show Mutarotation ?

A. Sucrose

B. Fructose

C. Lactose

D. Maltose

Answer: A



[View Text Solution](#)

42. Two monosaccharide in Lactose are combined by which glycosidic chain ?

A. $C_1 - O - C_6$

B. $C_1 - O - C_4$

C. $C_1 - O - C_2$

D. $C_1 - O - C_3$

Answer: B

 [View Text Solution](#)

43. Which is correct statement for dextrin ?

A. It cannot be hydrolyzed

B. It is water soluble

C. It is tasteless

D. It is known as sugar

Answer: C

 [View Text Solution](#)

44. Which of the following will reduce Fehling's solution ?

(i) Sucrose

(ii) Fructose

(iii) Maltose

(iv) Lactose

A. (ii) and (iii)

B. (i) and (ii)

C. (iii) and (iv)

D. (i) and (ii)

Answer: A::C



View Text Solution

45. Choose the correct statement for calciferol.

- A. It is synthesized by microorganism in intestine.
- B. It is synthesized in skin with the help of sunlight.
- C. It cannot be synthesized in human body.
- D. Human body synthesizes it from carotene.

Answer: B



View Text Solution

46. Which of the following amino acid is basic and essential ?

- A. Alanine
- B. Arginine
- C. Aspartic
- D. Glycine

Answer: B



[View Text Solution](#)

47. Which dicyclic base is present in RNA ?

- A. Guanine
- B. Thymine
- C. Cytosine
- D. Uracil

Answer: A



[View Text Solution](#)

48. What is protein part of enzyme called ?

A. Bio enzyme

B. Co factor

C. Apoenzyme

D. Apoenzyme

Answer: C



[View Text Solution](#)

49. Which of the following vitamin is insoluble in water and fat both ?

A. C

B. K

C. H

D. E

Answer: C

 [View Text Solution](#)

50. Which carbohydrate does not have $C_x(H_2O)_y$ general formula ?

A. rhamnose

B. stachyose

C. fructose

D. melitriose

Answer: A

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51. Which reagent gives saccharic acid by reacting with glucose ?

A. Fehlig solution

B. HNO_3

C. NH_2OH

D. Br_2 water

Answer: B



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52. Which of the following amino acid is neutral ?

A. Glycine

B. Aspartic acid

C. Lysine

D. Arginine

Answer: A



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53. Which of the following disease is caused by the deficiency of α -Tocopherol ?

A. Bone-deformation

B. Sterility

C. Scurvy

D. Beri Beri

Answer: B



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54. By which enzyme, the lactose is hydrolysed ?

A. Invertase

B. Emulsin

C. Maltase

D. Zymase

Answer: B



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55. By deficiency of which vitamin, pernicious anaemia is caused ?

A. Cyanocobalamine

B. α -Tocopherol

C. Biotin

D. Ascorbic acid

Answer: A



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56. Which linkage is proper for nucleotide ?

A. Sugar-Base

B. Sugar-Base-Phosphate

C. Base-Phosphate

D. Phosphate-Sugar-Base

Answer: B



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57. Enzymes are made of

- A. Proteins
- B. Vitamin
- C. Lipid
- D. Carbohydrate

Answer: A



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58. vitamin cannot be stored in a body.

- A. D
- B. C
- C. A

D. K

Answer: B



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59. Which of the following base is not present in DNA ?

A. Uracil

B. Adenine

C. Guanine

D. Thymine

Answer: A



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60. Which of the following pair of protein is globular protein ?

P-keratin, Q-Insulin, R-myosin, S-albumin

A. P, R

B. Q, S

C. R,S

D. Q,S

Answer: D



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61. Thyroxine is iodinated derivative of which amino acid ?

A. Tyrosine

B. Cysteine

C. Glutamine

D. Tryptophan

Answer: A



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