



CHEMISTRY

NCERT - NCERT CHEMISTRY(TELUGU)

BIOMOLECULES

Intext Questions

1. Glucose or sucrose are soluble in water but cyclohexane and benzene (simple six

membered ring compound 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 point and solubility in water of amino acids are generally higher than that of the corresponding halo acids. Explain. Higher the polarity of a group , more is its solubility in water.



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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?

Give the composition of DNA molecules as on hydrolysis it gives it all constituents.



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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 ? Single stranded structure of RNA.



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Exercises

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.

i) ribose ii) 2-deoxy ribose iii) maltose iv) fructose.



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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 the hydrolysis products of i) sucrose and ii) lactose ?



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



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9. What happens when D - glucose is treated with the following reagents:



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



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11. What do you mean by essential amino acids ? Give two examples for non essential amino acids ?



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12. Define the following as related to proteins :

peptide linkage



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13. What are the common types of secondary structure of proteins ?



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14. What type of bonding helps in stabilising the α -helix structure of proteins?



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15. Differentiate between globular and fibrous proteins.



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



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17. What are enzymes ? Give examples ?



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



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



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



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



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



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23. Explain that the two strands of DNA are not identical, but are complementary.



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



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



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Self Evaluation A Choose The Correct Answer

1. Which is a mono saccharide among the following :

A. Sucrose

B. Cellulose

C. Maltose

D. Glucose

Answer:



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2. Identify the reducing sugar.

A. Sucrose

B. Cellulose

C. Starch

D. Glucose

Answer:



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3. Sucrose is not

A. a di saccharide

B. a non-reducing sugar

C. hydrolysed to only glucose

D. hydrolysed to glucose & fructose

Answer:



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4. Sucrose contains glucose and fructose
linked by

A. $C_1 - C_1$

B. $C_1 - C_2$

C. $C_1 - C_4$

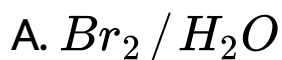
D. $C_1 - C_6$

Answer:



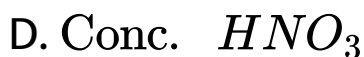
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5. Glucose is not oxidised to gluconic acid by



B. Fehling solutions

C. Tollen's reagent



Answer:



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6. Inversion of sucrose refers to

A. oxidation of sucrose

B. reduction of sucrose

C. hydrolysis of sucrose to glucose and
fructose

D. polymerisation of sucrose.

Answer:



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7. Glucose forms _____ with acetic anhydride and sodium acetate.

A. di acetate

B. tetra acetate

C. penta acetate

D. hexa acetate

Answer:



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8. The amino acid without chiral carbon is

A. Glycine

B. Alanine

C. Proline

D. Tyrosine

Answer:



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9. The building unit of all proteins are

A. α – hydroxy acids

B. α – amino acids

C. β – hydroxy acids

D. β – amino acids

Answer:



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10. Which is not true of amino acid ?

- A. amino acid forms Zwitter ion
- B. has isoelectric point
- C. dual behaviours
- D. amino acid is insoluble in NaOH solution

Answer:



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11. Two amino acids say A, B- react to give

- A. two dipeptides
- B. three dipeptides
- C. four dipeptides
- D. only one

Answer:



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12. A di peptide does not have

- A. two peptide units
- B. portions of two amino acids
- C. an amido group
- D. salt like structure

Answer:



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13. Proteins are not sensitive to

A. acids

B. bases

C. elevated temperature

D. water

Answer:



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14. Denaturation does not involve

- A. breaking up of H — bonding in proteins
- B. the loss of biological action of enzyme
- C. the loss of secondary structure
- D. loss of primary structure of proteins

Answer:



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15. Specificity of enzyme is due to

A. the sequence of amino acids

B. secondary structure

C. tertiary structure

D. all of the above

Answer:



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16. Ultimate products of hydrolysis of proteins is

- A. aniline
- B. aliphatic acid
- C. amino acid
- D. aromatic acid

Answer:



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17. Proteins are

A. polypeptides

B. poly acids

C. poly phenols

D. poly esters

Answer:



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18. Which of the following contains a lipid ?

A. starch

B. mineral oil

C. edible oil

D. peptide

Answer:



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19. Which among the following contains triglyceride ?

A. Wax

B. Cooking oil

C. Essential oil

D. Albumin

Answer:



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20. Which contains a long chain ester ?

A. wax

B. cooking oil

C. turpentine oil

D. cellulose

Answer:



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21. An example of a fatty acid obtained from a cooking oil is

A. acetic acid

B. stearic acid

C. benzoic acid

D. oxalic acid

Answer:



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22. Which is not a saturated fatty acid ?

A. Palmitic acid

B. Stearic acid

C. Oleic acid

D. Glyceric acid

Answer:



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23. Alkaline hydrolysis of cooking oil gives

A. soap

B. glycerol

C. fatty acid

D. both (a) and (b)

Answer:



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24. Hair and nail contains

A. cellulose

B. fat

C. keratin

D. lipid

Answer:



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25. Main component of cell wall is-

A. lipid

B. cellulose

C. protein

D. vitamin

Answer:



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Self Evaluation B Answer In One Or Two Sentences

1. What are carbohydrates ? Give two examples



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2. Give the structure of sucrose.



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3. What is starch ? What are the ultimate hydrolysis products ?



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4. What is the action of con. HI on glucose ?



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5. What is saponification?





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Self Evaluation C Answer Not Exceeding Sixty Words

1. Outline the classification of carbohydrates giving example for each.



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2. How can a reducing sugar differ from non-reducing sugar.



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3. Distinguish glucose from fructose.



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4. Show the formation of a peptide bond with an equation.



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5. Mention the biological importance of lipids.



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6. Write about the preparation and properties of glucose.



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7. How is the structure of fructose determined ?



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8. Write short notes on the manufacture of Soap and Wax ?



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