



CHEMISTRY

BOOKS - VIKRAM PUBLICATION (ANDHRA PUBLICATION)

BIOMOLECULES

Very Short Answer Questions

1. Define carbohydrates.



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2. Name the different types of carbohydrates on the basis of their hydrolysis . Give one example for each.



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3. Why are sugars classified as reducing and non-reducing sugars ?



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4. What do you understand from names (a) aldo pentose and (b) ketoheptose ?



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5. Write two methods of preparation of glucose.



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6. Glucose reacts with bromine water to give gluconic acid. What information do you get from this reaction about the structure of glucose?



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7. Glucose and gluconic acid on oxidation with nitric acid give saccharic acid. What information do you get from this reaction about the structure of glucose?





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8. Glucose reacts with acetic anhydride to form penta acetate. What do you understand about the structure of glucose from this reaction ?



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9. Give any two reasons to understand that glucose molecule has no open chain structure.



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10. D-glucose means dextro rotatory glucose .

Is it true? Why ?



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11. What are anomers ?



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12. Write the ring structure of D-glucose. What are their names ?



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13. Write the ring structure and open chain structure of fructose .



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14. What do you understand by invert sugars ?



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15. What are amino acids ? Give two examples .



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16. Write the structure of alanine and aspartic acid.



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

acids ?



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18. What is zwitter ion ? Give an example.



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19. What are proteins ? Give an example.



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20. What are fibrous proteins ? Give examples.



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21. What are globular proteins ? Give examples.



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22. How are proteins classified with respect to peptide bond ?



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23. What are the components of nucleic acid ?



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24. Write the names of three types of RNA.



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25. Write the biological functions of nucleic acids.



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26. Name the vitamin responsible for the coagulation of blood.



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27. What are monosaccharides ?



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28. What are reducing sugars ?



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29. Write two main functions of carbohydrates in plants .



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30. Classify the following into monosaccharides and disaccharides.

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



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



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



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33. What are the hydrolysis products of i) sucrose and ii) lactose ?



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



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



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



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37. What are essential and non - essential amino acids? Give one exmaple for each .



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38. Define the following as related to proteins :
peptide linkage



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39. Define the following as related to proteins :

primary structure



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40. Explain the denaturation of proteins.



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



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42. What type of bonding helps in stabilizing the α - helix structure of proteins ?



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43. Differentiate between globular and fibrous proteins.



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



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



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



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



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Short Answer Questions

1. How are the carbohydrates classified on the basis of their taste



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2. Name the different types of carbohydrates on the basis of their hydrolysis . Give one example for each.



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3. How are the carbohydrates classified on the basis of their functional groups



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4. Write a brief note on the structure of glucose.



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5. Write short notes on sucrose .



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6. Write the structure of maltose and lactose .

What are the products of hydrolysis of maltose and lactose?



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7. Write about polysaccharides with starch and cellulose as examples.



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8. Write notes on importance of carbohydrates.



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9. Write notes on proteins.



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10. Explain the denaturation of proteins.





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11. What are enzymes ? Give examples ?



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12. Explain the role of sucrose in its hydrolysis.



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13. Write notes on vitamins.





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14. What do you understand by The two strands of DNA are complementary to each other ? Explain .



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15. What are Hormones ? Give one example for each.

i) Steroid Hormones

ii) Polypeptide Hormones

iii) Amino Acid derivatives.



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16. Give the sources of the following vitamin and name the diseases caused by their deficiency (a) A (b) D (c) E and (d) K



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17. Explain the classification of carbohydrates.



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18. Discuss the structure of glucose on the basis of its chemical properties.



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19. Write notes on fructose



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20. Write short notes on sucrose .



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21. Write notes on maltose



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22. Write notes on lactose



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23. Write notes on starch



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24. Write notes on cellulose



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25. Write notes on importance of carbohydrates.



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26. Write notes on amino acids



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27. Write notes on proteins.



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28. What are enzymes ? Give examples ?



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29. Write notes on vitamins.



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30. Explain the structures of DNA and RNA.



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31. Write notes on the functions of different hormones in the body.



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Intex 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 formation of furanose structure for fructose while glucose forms pyranose structure with same molecular formula $C_6H_{12}O_6$?



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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. Why cannot vitamin C be stored in our body ?



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6. 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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7. 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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Dam Sure Vsaq

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3. Write notes on vitamins.



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4. What are Hormones ? Give one example for each.

i) Steroid Hormones

ii) Polypeptide Hormones

iii) Amino Acid derivatives.



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5. Write the importance of carbohydrates



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6. Give the sources of the following vitamin and name the diseases caused by their deficiency (a) A (b) D (c) E and (d) K



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10. Write the sources of vitamin and diseases due to vitamin deficiency.



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