



CHEMISTRY

BOOKS - OSWAAL PUBLICATION CHEMISTRY (KANNADA ENGLISH)

BIOMOLECULES

Topic I Very Short Answer Type Questions

1. Give an example for ketohexose.



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2. How many polypeptide chains are joined together in insulin molecule ?



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3. Give an example for a disaccharide that contains fructose units in furanose form .



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4. How many α - amino acid units are presents in a molecule of insulin ?



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5. Name an α - amino acid containing aromatic ring .



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6. What is a peptide bond?



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7. What is denaturation of proteins.



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8. Write the Haworth's structure of α - D (-fructopyranose).



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9. Name the protein present in hair.



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10. What are the products of hydrolysis of sucrose?



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11. Which of the two components of starch are water soluble ?



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12. Which component of starch is branched polymer of a glucose and insoluble in water .



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13. Name the components of starch.



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14. Write the structure of the product obtained when glucose is oxidised with nitric acid .



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15. What is the structural feature characterising reducing sugar ?



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1. Give a reaction to show glucose molecule contains .

(i) Five hydroxyl (-OH) groups.

(ii) A terminal aldehydic group.



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2. Explain what is the meant by the following :

(i) Peptide linkage .

(ii) Pyranose structure of glucose .



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3. Define the following terms :

(i) Glycosidic linkage .

(ii) Invert sugar .

(iii) Oligosaccharides.



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4. Explain why :

(i) Glucose is soluble in water but cyclohexane is not .

(ii) Aldehyde group is absent in the pentaacetate of D - glucose .

(iii) Vitamin A is essential for us .



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5. Explain the following terms :

(i) Inverts sugar .

(ii) Polypeptides .



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6. Write any two reactions of glucose which cannot be explained by the open chain structure of glucose molecule.



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7. Enumerate the reaction and facts of D - glucose which cannot be explained by its open chain structure .



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Topic I Long Answer Type Questions

1. Explain in brief aldose and ketose with example.



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Topic II Very Short Answer Type Questions

1. Give one reaction to indicate the presence of a carbonyl group in glucose.



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2. Name the disease caused by the deficiency of vitamin A.



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3. Write the linkage joining amino acids ?



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4. What type of bonding help in stabilising the α - helix structure of proteins ?



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5. What are the different types of RNA molecules which perform different functions ?



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Topic II Short Answer Type Questions

1. How do carbohydrates act as a source of energy ?



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2. What is a peptide bond?



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3. How do you show the presence of following in glucose molecule :

(i) Unbranched skeleton of six carbon atoms .

(ii) Carbonyl group.



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4. Write the Haworth structure of

$\beta - D(+)$ maltose .



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5. Write the Haworth structure of $\alpha - D(+)$

maltose .



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6. What is meant by :

(i) Peptide linkage .

(ii) Biocatalysts ?



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7. Write the main structural difference between

DNA and RNA .of the two bases , thymine and

uracil, which one is present in DNA ?



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8. Name the bases present in RNA . Which one of these is not present in DNA.



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9. Differentiate between fibrous proteins and globular proteins. What is meant by the denaturation of a protein ?.



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10. What is the structural difference between a nucleoside and a nucleotide ?



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11. The two strands of DNA are not identical but are complementary. Explain this statement.



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12. (i) Deficiency of which vitamin cause night blindness ?

(ii) Name the base that is found in nucleotide of RNA only.

(iii) Glucose on reaction with HI gives n - hexane . What does it suggest about the structure of glucose ?



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13. (i) Deficiency of which vitamin causes rickets?

(ii) Give an example each of fibrous protein and globular proteins.

(ii) Write the product formed on reaction of D - glucose with Br_2 water .



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14. (i) Deficiency of which vitamin causes scurvy ?

(ii) What type of linkage is responsible for the formation of proteins ?

(iii) Write the product formed when glucose is treated with HI.



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15. Define the following with one example of each :

(i) Zwitter ion ,

(ii) Glycosidic linkage.



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Topic II Long Answer Type Questions

1. What is α - amino acid ? Give its general structure.



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2. What is difference between essential and non essential α - amino acids.



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