



# CHEMISTRY

## BOOKS - R G PUBLICATION

### BIOMOLECULES

#### Exercise

1. Mention the hydrolysis products of sucrose.



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2. What do you mean by Zwitter ion?



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3. Name the vitamin whose deficiency causes rickets.



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4. Name one water soluble vitamin.



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5. Name two carbohydrates which act as bio-fuels.



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6. What do you mean by Zwitter ion?



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7. Name a source vitamin E



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8. Name the disease acused due to deficiency of vitamin K in our body.



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9. What are enzymes? Write in brief the mechanism of enzyme Catalysis



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10. What type of linkages hold together monomer of DNA?



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11. What is denaturation of protein?



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12. Name the four bases present in DNA. Which one of these is not present in RNA?





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**13.** What are essential and non-essential amino acids? Give one example of each.



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**14.** Name one vitamin which is not soluble in water and fat.



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**15.** What is the chemical basis of heredity?



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**16.** What are essential and non-essential amino acids? Give one example of each.



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**17.** What is denaturation of protein?



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**18.** What are essential and non-essential amino acids? Give one example of each.



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**19.** What type of linkages hold together monomer of DNA?



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**20.** Define the following terms in relation protein: Peptide linkage



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**21.** Define the following terms in relation protein: Denaturation.



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**22.** Name the four bases present in DNA.

Which one of these is not present in RNA?



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**23.** What is the difference between nucleoside and nucleotide?



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**24.** What are reducing sugars?



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



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**26.** What are essential and non-essential amino acids? Give one example of each.



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27. What are carbohydrates? Give the general formula of carbohydrates. Why are polysaccharides called non-sugars?



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28. What are proteins? Give one example each of fibrous and globular proteins.



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29. A carbohydrate ( $C_{12}H_{22}O_{11}$ ) is boiled with dil.  $H_2SO_4$  in alcoholic solution to form two hexoses with the same chemical formula. Identify the carbohydrate and the two hexoses. Give necessary chemical equations.



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30. What is carbohydrate?



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**31.** Give two examples of polysaccharides.



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**32.** How glucose is obtained from starch?



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**33.** Write the structure of D(+) Glyceraldehyde.

Is this optically active?



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**34.** Though glucose contains  $\text{-CHO}$  group in its open chain structure, but it can not give 2,4-DNP test, schiff test etc. What conclusion can you draw from this behaviour?



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**35.** Write the monosaccharide units of lactose.

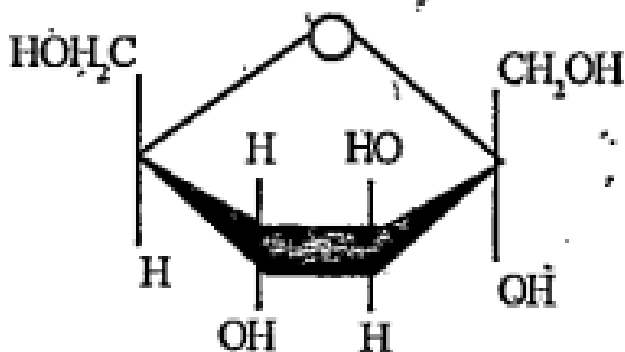


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36. What do you understand by the term glycosidic linkage?

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37. Name in full the following monosaccharide



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**38.** Name one plant starch and one animal starch.



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**39.** What are carbohydrates? Give the general formula of carbohydrates. Why are polysaccharides called non-sugars?



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**40.** What are amino acids?



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**41.** Name the optically inactive amino acid with its structure.



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**42.** What is peptide bond? Give one example of dipeptide.



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**43.** Name the protein which is present in hair.

What type of protein is this?



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**44.** Secondary structure of proteins found to exist in two different types of structures. What are they?



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**45.** What happens when protein is denaturated?



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



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**47.** Enzymes are-proteins.



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**48.** Define 'vitamins'.



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**49.** Fat soluble vitamins present in tissues.



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**50.** How nucleic acids are classified. What are they?



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**51.** What is nucleoside?



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**52.** Who developed double stranded structure of DNA?



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**53.** Name the type of bonds present in between two bases in nucleic acid. Name one pair of base linked to each other.



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**54.** Why vitamin C cannot be stored in our body?



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**55.** Based on the behaviour on hydrolysis how carbohydrates are classified. Give one example of each class.



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**56.** What are reducing and non reducing sugar? Give examples of each sugar.



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



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58. What happens when D-glucose is treated with the following reagents:  $Br_2$  water



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59. What happens when D-glucose is treated with the following reagents:  $HNO_3$



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**60.** Show that glucose contain five hydroxyl groups.



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**61.** Write the two properties which can not be explained by open chain structure of glucose.



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**62.** How cyclic hemiacetal structure of glucose is produced? What is anomeric carbon?



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**63.** Draw the Haworth structure of *Alpha*-D(+) gluco pyranose and  $\beta$ -D-(+) glucopyranose.



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**64.** What do you mean by inversion of cane sugar?



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**65.** Show with structure that maltose is reducing sugar.



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**66.** Write two differences between amylose and amylopectin.



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



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**68.** What are essential and non-essential amino acids? Give one example of each.



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



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**70.** What are proteins? How are they classified? Give one example of each class.



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**71.** Write two difference between fibrous protein & globular proteins.



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**72.** What do you mean by primary structure & secondary structure of proteins? Which structure gives the idea of shape of protein molecules?



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**73.** Define 'native protein'. What will happen if it is subjected to very high temperature?



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74. Complete the following table

Name of vitamin (ভিটামিনৰ নাম)	Sources (উৎস)	One deficiency disease (এটা অভাবজনিত ৰোগ)
Vit A	—	—
Vit B12	—	—
Vit K	—	—



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75. Write two difference between DNA & RNA.



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**76.** What are nucleotides? How do they join together?



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**77.** Discuss about the formation of DNA.



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**78.** What are the different types of RNA found in the cell? And what is the function of RNA in

our cell?



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