BIOLOGY

BOOKS - CHETANA BIOLOGY (MARATHI ENGLISH)

Biomolecules

Example

1. Define Biochemistry.

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2. State the different types of living organisms with examples.

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3. Define Cell. What are components of cell?

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4. State the components of protoplasm.

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5. What is cellular pool?

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6. What is the need of biomolecules?

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7. Write short note on: organic components Biomolecules.

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8. Write short note on inorganic components of Biomolecules.

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9. What are Carbohydrates? OR

Define Carbohydrates

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10. Give the classification of carbohydrates?

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11. Why are carbohydrates broken down or oxidized

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12. Enlist the examples of monosaccharides with the number of carbon compounds.

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13. Enlist the examples of disaccharides with the number of glucose units.

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14. Write a short note on Monosaccharides.

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15. What is reducing sugar?

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16. Distinguish between reducing and non-reducing sugar.

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17. What happens when molecules of Glucose are metabolized by cellular respiration?

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18. List name of structural polysaccharides.

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19. How many types of polysaccharides you know?

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20. State the role of Galactose. Does it help in playing the same role in respiration as glucose?

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21. Which type of sugar is fructose?

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22. Write a note on oligosaccharide and glycosidic bond.

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23. Give characteristics of cork.

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24. What are polysaccharides?

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25. Write short note on polysaccharide?

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26. Differentiate between Monosaccharide, Disaccharides and Polysaccharides.

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27. Differentiate between Homoglycan and Heteroglycan.

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28. Enlist the significance of carbohydrates.

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29. Enlist the significance of carbohydrates.

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30. Explain the classes of carbohydrates with example.

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31. What are components of fats?

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32. State the chemical components and general formula of lipids.

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33. What are fatty acids?

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34. What are lipids? Classify them and give at least one example of each.

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35. Differentiate between the saturated and unsaturated fats.

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36. Differentiate between the saturated and unsaturated fats.

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37. Describe the types of lipids and mention their biological significance.

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38. Why do high cholesterol level in the blood cause heart diseases?

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39. Polyunsaturated fatty acids are believed to decrease blood cholesterol level. How?

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40. Explain the chemical nature, structure and role of phospholipids in biological membrane.

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41. Who coined the term proteins?

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42. State the role of Mulder.

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43. What are building blocks of life?

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44. Enlist the characteristics of proteins.

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45. Write a note on proteins.

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46. Proteins are amphoteric in nature. Give reason

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47. State the properties of proteins.

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48. What forms the primary structure of proteins?

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49. Enlist the examples of simple protein and add their significance.

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50. How are proteins classified on the basis of their structure?

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51. Give the classification of proteins on the basis of their solubility with example.

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52. All proteins are made up of the some amino acids then how proteins found in human beings and animals may be different from those of other?

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53. Describe classes of protein with their importance.

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54. What are conjugated proteins? How do they differ simple ones? Give one example of each.

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55. Explain the peptide bond.

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56. Explain the secondary structure of proteins with examples.

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57. What are biomolecules? Explain building blocks of life.

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58. What are the types of Nucleic acids? List the molecules present in the nucleic acids.

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59. State the occurrence and chemical composition of DNA.

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60. What is the difference between a nucleotide and nucleoside? Give two examples of each.

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61. Differentiate between Purines and Pyrimidines.

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62. Write a note on Chargaff's rule.

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63. What is nucleotide? How is it formed? Mention the names of all nucleotides.

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64. Group the following as Purines and Pyrimidines: Adenine, Thymine, Guanine, Uracil

and Cytosine.

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65. Describe the structure of DNA molecule as proposed by Watson and Crick.

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66. DNA strands considered as antiparallel, Give reason.

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67. Enlist the functions of DNA.

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68. What is RNA? Enlist types of RNA.

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69. Describe the structure of RNA. Explain the different types of nongenetic RNA.

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70. What are the types of RNA? Mention the role of each class of RNA.

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71. Describe the structure of RNA. Explain the different types of nongenetic RNA.

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72. Describe the structure of r-RNA

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73. Describe the structure of RNA. Explain the different types of nongenetic RNA.

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74. Enlist the functions of RNA.

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75. Differentiate between: m-RNA and r-RNA

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76. Differentiate between: r-RNA and t-RNA

Watch Video Solution

77. Differentiate between: m-RNA and t-RNA

Watch Video Solution

78. Differentiate between: m-RNA and t-RNA

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79. Differentiate between: Codon and Anticodns

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80. What are nucleic acids? Enlist the point of difference among DNA and RNA.

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81. Differentiate between: m-RNA and r-RNA

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82. What are enzymes? How are they classified? Mention example of each class.

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83. Define Endo-enzymes.

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84. Define Exo-enzymes.

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85. Define Substrate.

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86. Define Substrate binding site.

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87. List the important poperties of enzymes.

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88. Explain about the mechanism of enzyme action.

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89. Describe the factors affecting enzyme action.

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90. Explain in detail: Classification of enzyme.

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91. Name the chemical found in the living cell which has necessary message for the production of all enzymes required by it.

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92. What is metabolism? How metabolic pool is formed in the cell.

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93. Differentiate between Catabolic pathway and Anabolic pathway.

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94. Differentiate between Primary and Secondary Metabolites.

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95. What are metabolites and state its types?

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96. Explain secondary metabolites.

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97. How do secondary metabolites useful for mankind?

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98. Enlist the economic importance of secondary metabolites.

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99. Name the following: The term that describes all the chemical reactions taking place in an organism.

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100. Name the following: The form in which carbohydrate is transported in a plant.

101. Name the following: The reagent used for testing of reducing sugar.

102. If double stranded DNA has 14% C (cytosine) what percent A (adenine), T(thymine) and G(gaunine) would you expect?

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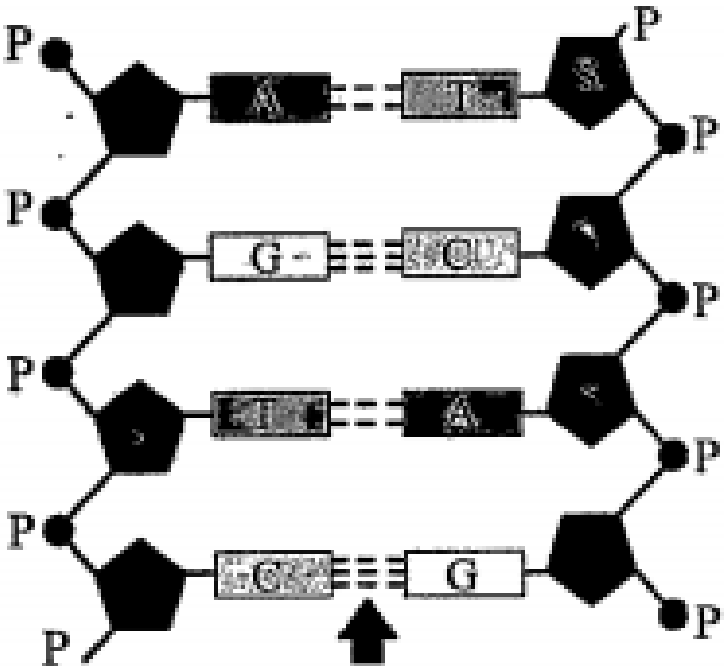
103. Observe the following figure and name the type of bond shown by arrow in the

structure.



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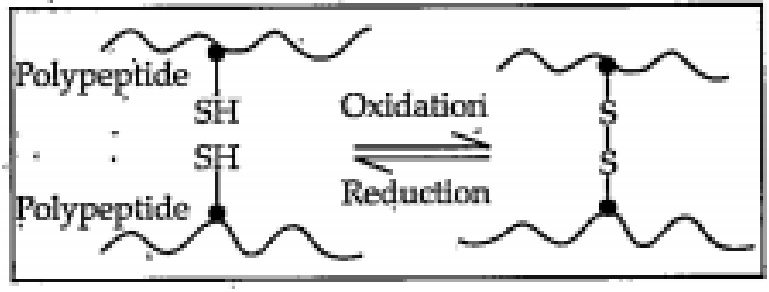
104. Answer the questions with reference to the following figure.



Name the type of bond formed between two polypeptides.

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105. If the sequence of coding strand in transcription unit is written as follows: 5' ATGC ATGC ATGC ATGC ATGC ATGC ATGC 3' Write down the sequence of mRNA.

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106. If double stranded DNA has 14% C (cytosine) what percent A (adenine), T(thymine) and G(gaunine) would you expect?

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107. Match the following items given in Column I and II.

Column I		Column II	
(i)	RNA	(a)	Induced fit model
(ii)	Yam plant	(b)	Flax seeds
(iii)	Koshland	(c)	Hydrolase
(iv)	Omega-3- fatty acid	(d)	Uracil
(v)	sucrose	(e)	Anti-fertility pills

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Exercise

1. Sugar, amino acids and nucleotides unite to their respective subunits to form.....

A. bioelements

B. micromolecules

C. macromolecules

D. all of the above

Answer:

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2. Glycosidic bond is found in.....

A. Disaccharide

B. Nucleosides

C. Polysaccharide

D. all of these

Answer:

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3. Amino acids in a polypetide are joined by.....bond.

A. Disulphide

B. glycosidic

C. hydrogen bond

D. none of these

Answer:

4. Lipids associated with cell membrane are.....

A. Spingomyelin

B. Isoprenoids

C. Phospolipids

D. Cholesterol

Answer:

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5. Linoleic, Linolenic and.....acids are referred as essential fatty acids since they cannot be synthesized by the body and hence must be included in daily diet.

A. Arachidonic

B. Oleic

C. Steric

D. Palmitic

Answer:

6. Haemoglobin is a type of.....protein, which plays indispensable part in respiration.

A. simple

B. derived

C. conjugated

D. complex

Answer:

7. When inorganic ions or metallo-organic molecules bind to apoenzyme, they together form.....

A. isoenzyme

B. holoenzyme

C. denatured enzyme

D. none of these

Answer:

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8. In enzyme kinetics, Km - Vmax/2. If Km value is lower, it indicates.....

A. Enzyme has less affinity for susbtrate

B. Enzyme has higher affinity towards substrate

C. There will be no product formation

D. all active sites of nzymes are saturated

Answer:

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9. The exoskeleton of insects is made up of chitin. This is a.....

A. macro protein

B. lipid

C. cipoprotein

D. polysaccharides

Answer:

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10. Which of the following is a simple protein.

A. nucleoprotein

B. mucoprotein

C. chromo protein

D. globulin

Answer:

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11. Difference between DNA and RNA because of

A. Sugar and base

B. sugar and phosphate

C. Phosphate and base

D. Sugar only

Answer:

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12. Which enzyme is needed to digest food reserve in castor seed?

A. amylase

B. diastase

C. lipase

D. protease

Answer:

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13. Co-enzyme is....

A. often a metal

B. often a vitamin

C. always as organic molecule

D. always an inorganic molecule

Answer:

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14. Most common constituents of organic compounds found in organisms are..... .

A. C, H, O, P

B. C, H, O

C. C, H, N, P

D. C, H, O, N, P

Answer:

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15. The simplest monosaccharide made up of three carbon atoms amongst the following is..... .

A. erythrose

B. glucose

C. glyceraldehyde

D. ribose

Answer:

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16. In a disaccharide, monomers are linked with each other through..... .

A. peptide bonds

B. hydrogen bonds

C. glycosidic bonds

D. ester bonds

Answer:

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17. Proteins are formed by condensation of..... .

A. nucleic acids

B. amino acids

C. fatty acids

D. carbohydrates

Answer:

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18. Simple lipids are esters of..... .

A. amino acids

B. proteins

C. phosphorus

D. fatty acids with glycerol

Answer:

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19. Fatty acids which do not contain double bond between carbon atoms are..... .

A. saturated fatty acids

B. unsaturated fatty acids

C. Oleic and linoleic acids

D. linoleic and linolenic acids

Answer:

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20. A nucleotide contains..... .

A. sugar + phosphate

B. N-base + phosphate

C. sugar + nitrogenous base

D. Sugar + N-base + phosphate

Answer:

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21. The two strands of DNA are..... .

A. similar in nature and complementary

B. anti parallel and complementary

C. parallel and complementary

D. basically different in nature

Answer:

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22. RNA is genetic material in..... .

A. bacteria

B. cyanobacteria

C. bacteriophages

D. plant viruses

Answer:

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23. Majority of cellular enzymes function best at.....pH.

A. acidic

B. basic

C. neutral

D. strong basic

Answer:

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24. On hydrolysis, two molecules of glucose are formed from..... .

A. sucrose

B. maltose

C. lactose

D. galactose

Answer:

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25. Keratin is a protective bio-molecule. It is found in.....

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26. In plants, the optimum temperature for enzyme reaction is..... .

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27. Which one is not a property of enzymes?

(A) Increases the rate of chemical reaction
(B) Used up in reaction
(C) Proteinaceous (D) Specific in nature

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28. Name the type of RNA found in the cells abundantly.

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29. RNA does not have..... .

(A) ribose sugar
(B) phosphoric acid
(C) uracil
(D) thymine

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30. Nitrogen bases don't contain..... .

(A) ribose sugar (B) phosphoric acid
(C) uracil (D) thymine

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31. Pyrimidines of RNA are..... .

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32. Cellulose is a carbohydrate. It is basically a..... .

A. monosaccharide

B. disaccharide

C. oligosaccharide

D. polysaccharide

Answer:

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33. Which one of the following is a true statement about enzyme?

(A) All enzymes are not proteins
(B) All enzymes are proteins
(C) All proteins are enzymes
(D) All enzymes are vitamins

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34. The constituents of cellular pool are.....

.

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35. Enzymes participate in..... .

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36. Which of the following is not a macromolecule?

(A) Nucleic acid
(B) Monosaccharide
(C) Protein
(D) DNA

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37. Which of the following group is not found in carbohydrates?

(A) $-OH$
(B) $-CHO$
(C) $C=O$
(D) None of these

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38. The carbohydrate will crystalline form is/are..... .

(A) Monosaccharide (B) Disaccharide
(C) Polysaccharide (D) Both a and b

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39. .....is made up of a fructose and glucose molecule.

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40. The difference between typical protein and carbohydrate is presence of.....atom.

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41. Folded protein structure of many polypetides is held and maintained by..... .

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42. the term "protein" was coined by..... .

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43. Keratin from hair is an example of..... .

(A) structural protein (B) enzyme
(C) hormones (D) contractile protein

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44. Which of the following is a transport protein?

(A) Insulin
(B) Haemoglobin
(C) Keratin
(D) Immunoglobulin

A. Insuline

B. Haemoglobin

C. Keratin

D. Immunoglobulin

Answer:

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45. The term lipid was coined by..... .

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46. Pick the odd man out..... .

(A) Steroid
(B) Insulin
(C) Waxes
(D) Fats

A. Steroid

B. Insulin

C. Fats

D. Waxes

Answer:

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47. The fatty acid is..... .

A. Long chain of carbon atoms

B. Long chain of carbon atoms with carboxyl group at the end

C. Long chain of carbon atoms with amine group at the end

D. three carbons with alcohol

Answer:

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48. Saturation of fatty acids is in relation to the number of..... .

A. Carbon atoms

B. Hydrogen atoms

C. Oxygen atoms

D. Phosphorous atoms

Answer:

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49. .....[lipids] have rings of carbon atoms.

A. Steroids

B. Carotene

C. Phospholipids

D. both a and b

Answer:

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50. Lipids are..... .

A. Hormones

B. Constituents of cell membrane

C. Photosynthetic pigments

D. all of these

Answer:

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51. Nucleic acid were first discovered by..... .

A. waston and crick

B. Fredrick Meischer

C. Jacob and monod

D. Rosalind franklin

Answer:

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52. Which enzyme was first crystallized?

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53. .....are parts of ribosomes.

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54. Collection of various types of molecules in a cell is called..... .

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55. Maltose, a disaccharide, has two subunits..... .

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56. .....is example of heteropolysaccharide.

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57. Proteins are polymers of..... .

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58. General structure of an amino acid has/have.....group/s.

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59. Which of the following is not an amino acid?

A. Adenine

B. Asparagine

C. Glutamine

D. Hisditine

Answer:

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60. When carbohydrate with same number of carbon atoms as the lipid molecule are compared, the lipid molecule has..... .

A. less oxygen and more hydrogen

B. more oxygen and less hydrogen

C. more oxygen and more hydrogen

D. less oxygen and equal hydrogen

Answer:

61. The glycerol is..... .

A. long chain of carbon atoms

B. long chain of carbon atoms with carboxyl group at the end

C. long chain of carbon atoms with amine group at the end

D. three carbon atoms with alcohol

Answer:

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62. Which of the following is found in neutral fats?

A. Monoglycerides

B. diglycerides

C. Triglycerides

D. Tetraglycerides

Answer:

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63. Which of the following is true about lipids?

A. They are a storage compound for reverse food

B. they provide insullation

C. cheak transpiration rate

D. All of these

Answer:

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