



BIOLOGY

BOOKS - MBD BIOLOGY (ODIA ENGLISH)

BIOMOLECULES

Question Bank

1. The protein present in wheat grain is

A. Glutenin

B. Albumin

C. Globulin

D. Tubulin

Answer: A



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2. Antiparallel strands of a DNA molecule means that

A. One strand turns clockwise

B. One strand turns anticlockwise

C. The phosphate groups of two DNA strands, at their ends, share the same position

D. The phosphate groups at the start of two DNA strands are in opposite position (pole)

Answer: C



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3. A steroid hormone which regulates glucose metabolism is:

A. Cortisone

B. Cortisol

C. Corticosterone

D. 1,1-deoxycorticosterone

Answer: B



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4. Amino acid sequence in protein synthesis is decided by the sequence of

A. rRNA

B. tRNA

C. mRNA

D. cDNA

Answer: C



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5. Which one of the following is not a second messenger in hormone action?

A. cAMP

B. cGMP

C. Calcium

D. Sodium

Answer: D



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6. A steroid hormone which regulates glucose metabolism is:

A. Cortisone

B. Cortisol

C. Corticosterone

D. 11-deoxycorticosterone

Answer: B



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7. One turn of helix of a B-DNA is approximately:

A. 2nm

B. 20nm

C. 0.34nm

D. 3.4nm

Answer: D



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8. In the synthesis of which of the following the DNA molecule is not directly involved

A. mRNA molecule

B. Protein molecule

C. Another DNA molecule

D. tRNA molecule

Answer: B



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9. What is the common point of similarity between DNA and RNA

- A. Both are double stranded
- B. Both have identical sugar molecules
- C. Both have identical pyrimidine bases
- D. Both are polymers of nucleotides

Answer: D



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10. A sequential expression of a set of human genes occurs when a steroid molecule bind to the

A. Messenger RNA

B. DNA sequence

C. Ribosome

D. Transfer RNA

Answer: B



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11. Which one of the following is a fat soluble vitamin and its related deficiency disease?

A. Retinol-xerophthalmia

B. Cobalamine-beri beri

C. Calciferol-pellagra

D. Ascorbic acid-Scurvy

Answer: A



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12. The two polynucleotide chains- in DNA are

A. Discontinuous

B. Antiparallel

C. Semiconservative

D. Parallel

Answer: B



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13. Which of the following is true for vitamin C?

A. Also called as ascorbic acid

B. Also called as fumaric acid

C. Obtained from citrus fruit

D. Both (a) & (c)

Answer: D



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14. Which one is the sweetest sugar ?

A. Glucose

B. fructose

C. Sucrose

D. Maltose

Answer: B



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15. Which of the following is not a disaccharide?

A. Maltose

B. Starch

C. Sucrose

D. Lactose

Answer: D



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16. If a length of DNA has 45,000 base pairs how many complete turns will the DNA molecule take ?

A. 4500

B. 45000

C. 45

D. 450

Answer: A



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17. Two strands of double helix model of DNA are held together by H-bonds between

- A. Nitrogen bases
- B. Phosphoric acid
- C. Sugar and phosphate
- D. Nitrogen and sugar

Answer: A



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18. Sucrose is an example of

- A. Disaccharide
- B. Polysaccharide
- C. Monosaccharide
- D. Both (b) and (c)

Answer: A



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19. Which of the following is a protein hormone?

A. Cortisol

B. Thyroxine

C. Vitamin D

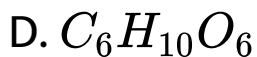
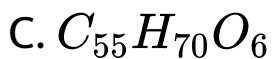
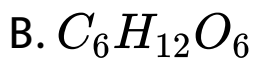
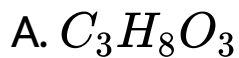
D. Estrogen

Answer: B



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20. What is the structure of glucose ?



Answer: C



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21. Carbohydrates are commonly found as starch in plant storage organ . Which of the following five properties of starch (i-v) make it useful as a storage material ? (i) easily translocated (ii) chemically non-reactive (iii)easily digested by animals (iv) osmotically inactive (v) synthesized during photosynthesis

The useful properties-are:

A. (i), (iii) and (v)

B. (i) and (v)

C. (ii) and(iii)

D. (ii) and (iv)

Answer: D



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22. Which one-of the following pairs of nitrogenous bases of nucleic acids, is wrongly matched with the category mentioned against it?

A. Guanine, Adenine - Purines

B. Adenine, Thymine - Purines

C. Thymine, Uracil-Pyrimidines

D. Uracil, Cytosine -Pyrimidines

Answer: B



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23. Cholesterol is a

A. Phospholipid

B. Wax

C. Steroid

D. Triglyceride

Answer: C



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24. Protein denaturation takes place by the activity of

A. Water

B. Heat

C. Enzyme

D. Pressure

Answer: B



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25. Benedicts reagent test is conducted to

Confirm the presence of

A. Polysaccharides like starch

B. Lipids

C. Reducing agent

D. Proteins

Answer: C



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26. Which of the following carbohydrates is not a disaccharide?

A. Maltose

B. Lactose

C. Sucrose

D. Galactose

Answer: D



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27. The "repeating unit" of glycogen is

A. Fructose

B. Mannose

C. Glucose

D. Galactose

Answer: C



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28. DNA nucleotides are attached by

A. Hydrogen bond

B. Covalent bond

C. Vander Waals bond

D. Electrovalent bond

Answer: A



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29. Among the nitrogenous bases involved in DNA and RNA formation, the double ring base is

A. Uracil

B. Guanine

C. Thymine

D. Cytosine

Answer: B



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30. Inulin, a lower molecular weight polysaccharide is obtained from roots of

A. Dahlia

B. Raphanus

C. Tapioca

D. Colchicum

Answer: A



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31. The part of DNA molecule that varies among DNA molecule

A. Phosphate molecule

B. Nitrogenous bases

C. Sugar molecule

D. All of these

Answer: B



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32. In DNA of certain organisms, guanine constitutes 20% of the bases. What percentage of the bases would be adenine ?

A. 0 %

B. 10 %

C. 0.2%

D. 30 %

Answer: D



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33. Ribose sugar is present in

- A. RNA polymerase and ATP
- B. RNA and ATP
- C. RNA polymerase, RNA and ATP
- D. RNA only

Answer: B



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34. Which of the following is structural subunit of DNA?

A. Protein

B. Carbohydrate

C. RNA

D. Nucleotides

Answer: D



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35. Purines possess nitrogen at

A. 1, 2, 4 and 6 position

B. 1, 3, 5 and 7 position

C. 1, 3, 7 and 9 position

D. 1, 2, 6 and 8 position

Answer: C



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36. The sugar present in milk is

A. Fructose

B. Sucrose

C. Glucose

D. Lactose

Answer: D



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37. If the total amount of adenine and thymine in a double-stranded DNA is 45%, the amount of guanine in this DNA will be

A. 22.5 %

B. 27.5 %

C. 45 %

D. 55. %

Answer: B



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38. Chitin is a

A. Polysaccharide

B. Nitrogenous polysaccharide

C. Lipoprotein

D. Protein

Answer: B



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39. In a DNA molecule distance between two bases is _

A. 2nm/20'Å'

B. 0.2nm/2'Å'

C. 3.4nm/A0

D. 0.34nm/3.4'Å'

Answer: D



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40. A nucleoside differs from a nucleotide in not having

A. Sugar

B. Glucose

C. Nitrogen base

D. Phospahte Group

Answer: D



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41. In a disaccharide two monosaccharides are linked by a:

- A. Hydrogen
- B. Disulphide
- C. Glycosidic
- D. Ionic

Answer: C



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42. The energy content in kcal/g of carbohydrate: protein: triglycerol respectively is approximately in the ratio of

A. 1:2:2

B. 1:1:2

C. 1:1:1

D. 2:2:1

Answer: B



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43. Essential: non-essential amino acid is

A. Lysine: leucine

B. Methionine: threonine

C. Valine: tyrosine

D. Alanine: cysteine

Answer: C



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44. Histones are rich in

A. Alanine and glycine

B. Lysine and arginine

C. Histidine

D. Cysteine and tyrosine

Answer: B



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45. In a double stranded DNA, the sequence of nucleotides in one strand is 3' ATTGCTAT 5'.

What will be the complementary sequence on the other strand ?

A. 3' TAAGCGATA 5'

B. 5" TAAGCGATA 3'

C. 5' ATICGCTAT 3'

D. 5' TAAGCGTIA 3'

Answer: B



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46. The single turn of DNA has ____ base pairs.

A. 8

B. 10

C. 6

D. 100

Answer: B



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47. Example of a typical homopolysaccharide is

A. Lignin

B. Suberin

C. Inulin

D. Starch

Answer: D



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48. Inulin is a polymer of

A. Glucose

B. Galactose

C. Fructose

D. Arabinose

Answer: C



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49. Which is not a protein ?

A. Alpha amylase

B. Ribozyme

C. Histidine kinase

D. Nitrogenase

Answer: B



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50. Enzymes are

A. Vitamins

B. Hormones

C. Proteins

D. None of these

Answer: C



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51. A competitive inhibitor of succinic dehydrogenase is:

A. alpha ketoglutarate

B. Malate

C. Malonate

D. Oxaloacetate

Answer: C



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52. Protein part of a holoenzyme is called

- A. Exoenzyme
- B. Endoenzyme
- C. Coenzyme
- D. Apoenzyme

Answer: D



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53. The "lock and key" model of enzyme action illustrates a particular enzyme molecule

A. May be destroyed and resynthesised several times

B. Interacts with a specific type of substrate molecule

C. Reacts at identical rates under all conditions

D. Forms a permanent enzyme-substrate complex

Answer: B



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54. Feedback inhibition of enzymes is affected by which of the following ?

A. Enzyme

B. Substrate

C. End products

D. Intermediate end products

Answer: C



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55. Three of the following statements about enzymes are correct and one is wrong. Which one is wrong ?

A. Enzymes require optimum pH for maximal activity

B. Enzymes are denatured at high temperature but in certain exceptional organism they are effective even at temperature $80^{\circ} - 90^{\circ}$

C. Enzymes are highly specific.

D. Most enzymes are proteins but some are lipids.

Answer: D



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56. A particular enzyme molecule interacts with a specific substrate molecule is: explained by

- A. Enzyme-substrate concept
- B. Activation energy concept
- C. Destroyed and re-synthesised concept
- D. Lock and key concept

Answer: D



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57. Holoenzyme consists of

- A. Enzyme protein and coenzyme
- B. Only protein parts
- C. Nucleic acid and enzymes
- D. Only coenzyme

Answer: A



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58. "All enzymes are proteins." s statement is now modified because an apparent exception to this biological truth is

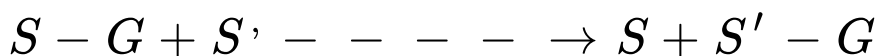
- A. Arylsulphatase
- B. Dehydrogenase
- C. Ribozyme
- D. Nitroreductase

Answer: C



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59. Select the type of enzyme involved in the following reaction:



A. Dehydrogenase

B. Transferase

C. Hydrolase

D. Lyase

Answer: B



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60. with reference to enzymes, which one of the following statements is true ?

A. Apoenzyme =Holoenzyme + Coenzyme

B. Holoenzyme=Apoenzyme+coenzyme

C. Coenzyme=Apoenzyme+Holoenzyme

D. Holoenzyme=Coenzyme-Apoenzyme

Answer: B



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61. The tightly bound non proteinaceous organic compound is:

A. Prosthetic group

B. Cofactor

C. Apoenzyme

D. Holoenzyme

Answer: A



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62. Which are essential amino acids ?

- A. Tryptophan and lysine
- B. Lysine and phenylalanine
- C. Phenylalanine and glycine
- D. Valine and histidine

Answer: B



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63. The bond present between two nucleotides of a polynucleotide is

A. Hydrogen bond

B. Covalent bond

C. Peptide bond

D. phosphodiester bond

Answer: D



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64. Unusual nitrogenous bases are common in

:

A. mRNA

B. rRna

C. tRna

D. DNA

Answer: C



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65. Enzymes are mostly which type of protein ?

A. Primary

B. Secondary

C. Tertiary

D. Tertiary-Quaternary

Answer: D



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66. Inulin found in plant cell is a

A. polysaccharides

B. Monosaccharides

C. Lipid

D. Protein

Answer: A



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67. Which process is not associated with DNA?

A. Denaturation

B. Renaturation

C. Transcription

D. Translation

Answer: D



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68. DNA and RNA differ in:

A. sugar only

B. sugar and phosphate

C. sugar and purine

D. sugar and pyrimidine

Answer: D



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69. Protein found in hair and nail is:

A. Collagen

B. Tubulin

C. Keratin

D. Myosin

Answer: C



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70. Polarity of DNA is determined by:

A. Sugar

B. phosphate

C. purine

D. pyrimidine

Answer: A



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71. The bond between two amino acid is _____ bond.



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72. DNA differs from RNA in having thymine in place of _____



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73. _____ is composed of two molecules of glucose.



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74. alpha helix exhibits _____ structure of protein.



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75. Number of nitrogen atoms present in a purine is _____



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76. Differences in amino acids is due to their _____ group.



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77. One turn of helix of a B-DNA is approximately:



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78. Condensation of two amino acids forms a _____



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79. Starch and _____ are storage polysaccharides.



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80. Three fatty acids join by condensation with glycerol to form a _____.



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81. Deficiency of vitamin B1 cause the disease_____



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82. _____acts as second messenger in the cell.



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83. Steroids have a nucleus consisting of 3 cyclohexane rings and one _____ ring.



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84. Apoenzyme and cofactor together constitute_____.



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85. The non protein part closely associated with the enzyme is called_____.



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86. Cleavage of a molecule into smaller molecules in presence of water.



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87. A polymer of identical mono-saccharides.



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88. In a disaccharide two monosaccharides are linked by a:





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89. A compound formed by one molecule each of pentose sugar, phosphate and nitrogenous base.



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90. The animal starch.



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91. Group of chemical signals act like hormones by coordinating between individuals of same species.



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92. Protein part of a holoenzyme is called



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93. Metal ion part of enzyme.



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94. Inactive precursor form of enzyme.



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95. The prosthetic group which is a complex organic molecule.



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96. The molecules found in the cell are called.



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97. What type of bond is formed between H and O in water molecule?



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98. Name two main mineral crystals found in plant cell.



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99. Give two examples of homopolysaccharides



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100. The sugar present in milk is



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101. Sweetening power of sugars is expressed as.



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102. Fats and oils are esters derived from which compound?



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103. Double bonds are present in which fatty acids?



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104. Give two examples of essential amino acids.



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105. What are the two forms of secondary protein?



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106. Give one example of quaternary protein.



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107. What are two purine nucleosides?



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108. What are different forms of DNA?



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109. The three free bases on Rna recongnition site of tRNA constitute.



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110. What are two broad categories of vitamins?



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111. What is the chemical name of vitaminC?



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112. Which vitamin is responsible for blood clotting?



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113. The cells on which hormones act are called.



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114. Which compounds act as first messenger for the cells?



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115. _____ acts as second messenger in the cell.



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116. Group of chemical signals act like hormones by coordinating between

individuals of same species.



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117. Name two sex hormone.



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118. Who coined the term enzyme?



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119. Inactive precursor form of enzyme.



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120. Enzymes are mostly which type of protein ?



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121. In holoenzymes ,vitamins function as.



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122. Give an example of non -protein enzyme.



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123. Who proposed Lock and Key mechanism of enzyme action?



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124. Who proposed induced fit mechanism of enzyme action?



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125. Which is fastest acting enzyme?



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126. Feedback inhibition is also called.



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127. Write short note on RNA



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128. Write short note on Amino acid



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129. Write short note on m-RNA



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130. Write short note on ATP



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131. Write short note on ATP



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132. Write short note on peptide bond



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133. Write short note on Nucleic acid



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134. Write short note on Nitrogenous bases



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135. Write short note on DNA



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136. Write short note on Protein



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137. Write short note on Primary protein



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138. Write short note on Secondary protein



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139. Write short note on Tertiary protein



[Watch Video Solution](#)

140. Write short note on Lipids



[Watch Video Solution](#)

141. Write short note on Fatty acids



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142. Write short note on Enzyme



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143. Write short note on activation energy.



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144. Distinguish between Amino acid and nucleic acid



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145. Distinguish between DNA and RNA



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146. Distinguish between Saturated and unsaturated Fatty acids



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147. Distinguish between Enzyme and hormone



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148. Write the properties and chemical nature of enzymes.



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149. what is enzyme? Describe briefly the mode of enzyme action.



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