RAVI MATHS TUITION CENTRE , WHATSAPP - 8056206308

Time : 1 Mins **BIOMOLECULES' 1** **Marks : 893**

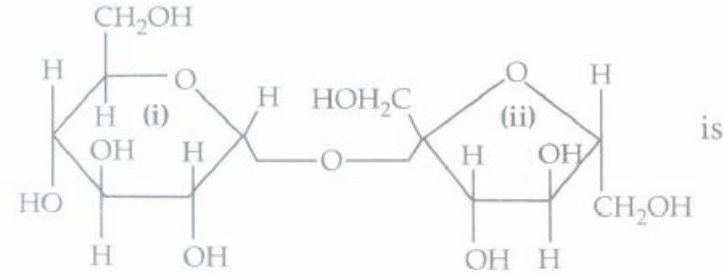
1. In cellulose, D-glucose units are joined by:
   a) α-1, 4 glycosidic linkage b) β-1, 6 glycosidic linkage c) β-1, 4 glycosidic linkage
   d) peptide linkage.
2. The correct statement regarding RNA and DNA respectively is _____.
   a)
   The sugar component in RNA is arabinose and the sugar component in DNA is 2'-deoxyribose.
   b)
   The sugar component in RNA is ribose and the sugar component in DNA is 2'-deoxyribose.
   c) The sugar component in RNA is arabinose.
   d)
   The sugar component in RNA is 2'-deoxyribose and the sugar component in DNA is arabinose.
3. **Assertion:** Maltose and lactose are examples of reducing sugars.
   Reason : Maltose and lactose reduce Fehling's solution and Tollens' reagent.
   a) If both assertion and reason are true and reason is the correct explanation of assertion.
   b)
   If both assertion and reason are true but reason is not the correct explanation of assertion.
   c) If assertion is true but reason is false. d) If both assertion and reason are false.
4. Which is the correct statement?
   a) Starch is a polymer of α-glucose
   b) In cyclic structure of fructose, there are four carbons and one oxygen atom
   c) Amylose is a component of cellulose
   d) Proteins are composed of only one type of amino acids
5. During the process of digestion, the proteins present in food materials are hydrolysed to amino acids. The two enzymes involved in the process

   $$\text{Proteins} \xrightarrow{enzyme\ (A)} \text{Polypeptide} \xrightarrow{enzyme\ (B)} \text{Amino acids, are respectively :}$$

   a) invertase and zymase b) amylase and maltase c) diastase and lipase
   d) pepsin and trypsin

6. **Assertion:** Glucose forms hydrogen sulphite addition product with $NaHSO_3$
   Reason: Glucose gives all the reactions of aldehydic group.
   a) If both assertion and reason are true and reason is the correct explanation of assertion.
   b)
   If both assertion and reason are true but reason is not the correct explanation of assertion.
   c) If assertion is true but reason is false. d) If both assertion and reason are false.
7. Aspirin is an acetylation product of _____.
   a) o-hydroxy benzole acid b) o-hydroxybenzene c) z-hydroxy benzoic acid
   d) p-dihydroxybenzene
8. α-D-glucose and β-D-glucose are :
   a) epimers b) anomers c) enantiomers d) diastereomers
9. The glycosidic linkage involved in linking the glucose units in amylose part of starch is
   a) C_1 -C_4 β-linkage b) C_1 -C_6 β-linkage c) C_1 -C_6 α-linkage d) C_1 -C_4 α-linkage
10. A sequence of how many nucleotides n messenger RNA makes a codon for a amino acid?
    a) Three b) Four c) One d) Two
11. The letter 'D' in carbohydrates signifies
    a) dextrorotatory b) configuration c) diamagnetic nature d) mode of synthesis.
12. Sucrose in water is dextrorotatory $[\alpha]_D$ = + 66.4^o when boiled with dil. HCl, the solution becomes laevorotatory $[\alpha]_D$ = -39.9^o. In this process the sucrose breaks into _____.
    a) L-glucose + D-fructose b) L-glucose + L-fructose c) D-glucose + D-fructose
    d) D-glucose + L-fructose
13. Vitamin B_{12} contains _____.
    a) Ca(II) b) Fe(II) c) Co(III) d) Zn(II)
14. What is the basic formula for starch?
    a) $(C_6H_{12}O_6)_n$ b) $(C_6H_{10}O_5)_n$ c) $C_{12}H_{22}O_{11}$ d) $(C_6H_{12}O_4)_n$
15. Mark the incorrect example
    a) Keratin and myosin - Fibrous proteins b) Insulin and albumins - Globular proteins
    c) Glycylalanine - Dipeptide d) Enzymes and haemoglobin - Derived proteins
16. Which is a fat soluble vitamin?
    a) Vitamin A b) Vitamin B_6 c) Vitamin C d) Vitamin B_2
17. Fructose reduces Tollen's reagent due to _____.
    a) enolisation of fructose followed by conversion to aldehyde by base
    b) asymmetric carbons c) primary alcoholic group d) secondary alcoholic group
18. Chemically considering digestion is basically :
    a) anabolism b) hydrogenation c) hydrolysis d) dehydrogenation

19. The correct statement about the following disaccharide



is

a) ring (i) is pyranose with α-glycosidic link b) ring (i) is furanose with α-glycosidic link
c) ring (ii) is pyranose with α-glycosidic link d) ring (ii) is pyranose with β-glycosidic link.

20. **Assertion:** All naturally occurring a- amino acids are optically active.
Reason: Most naturally occuring amino acids have D-configuration.
a) If both assertion and reason are true and reason is the correct explanation of assertion.
b)
If both assertion and reason are true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false. d) If both assertion and reason are false.

21. Which of the following protein destroy the antigen when it enters in body cell?
a) Antibodies b) Insulin c) Chromoprotein d) phosphoprotein

22. Which of the following is responsible for preparing the uterus for implantation of fertilised egg?
a) Testosterone b) Glucocorticoids c) Progesterone d) Estradiol

23. In a protein molecule, various amino acids are linked together by _____.
a) α-glycosidic bond b) β-glycosidic bond c) peptide bond d) dative bond

24. Bases common to RNA and DNA are
a) adenine, guanine, cytosine b) adenine, uracil, cytosine c) adenine, guanine, thymine
d) guanine, uracil, thymine.

25. Maximum amount of RNA is found in
a) nucleolus b) chloroplast c) ribosomes d) cytoplasm

26. How many C-atoms are there in a pyranose ring?
a) 3 b) 5 c) 6 d) 7

27. Which of the following statements about enzymes are true?
a) Enzymes catalyse chemical reactions by increasing the activation energy
b)
Enzymes are highly specific both in binding chiral substrates and in catalyzing their reactions
c) Enzymes lack in nucleophilic groups d) Pepsin is proteolytic enzyme

28. Hereditary characteristic are passed on from parents to children through:
a) gametes b) genes c) mutants d) enzymes

29. Enzymes take part in a reaction and :
a) decrease the rate of a chemical reaction b) increase the rate of a chemical reaction
c) both (a) and (b) d) none of these

30. Which of the following reactions of glucose can be explained only by its cyclic structure?
a) Glucose forms pentaacetate. b) Glucose reacts with hydroxylamine to form an oxime.
c) Pentaacetate of glucose does not react with hydroxylamine.

d) Glucose is oxidised by nitric acid to gluconic acid

31. Which of the following B-group vitamins can be stored in our body?
    a) Vitamin B_1 b) Vitamin B_2 c) Vitamin B_6 d) Vitamin B_{12}

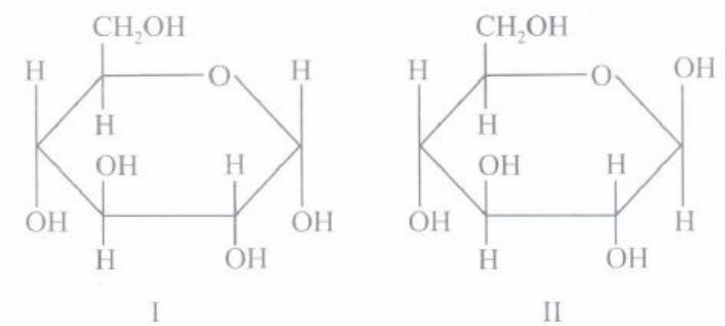
32. Which of the following statements is not correct?
    a) Only α-amino acids are obtained on hydrolysis of proteins.

    b)
    The amino acids which are synthesised in the body are known as non-essential amino acids.

    c) There are 20 essential amino acids.

    d) L-amino acids are represented by writing the NH_2 group on the left side.

33. Study the structures of α-D-(+) glucopyranose and β-D-(+) glucopyranose and mark the correct statement.



    a) Structures I and II are enantiomers. b) Structures I and II are anomers.
    c) The two structures I and II differ in the configuration of C, and C4.
    d) Both the structures I and II give 2, 4-DNP test.

34. Chargaffs rule states that in an organism _____.
    a) Amounts of all bases are equal
    b)
    Amount of adenine (A) is equal to that of thymine (T) and the amount of guanine (G) is equal to that of cytosine (C)
    c)
    Amount of adenine (A) is equal to that of guanine (G) and the amount of thymine (T) is equal to that of cytosine (C)
    d)
    Amount of adenine (A) is equal to that of cytosine (C) and the amount of thymine (T) is equal to that of guanine (G)

35. Which of the following acids is a vitamin?
    a) Aspartic acid b) Ascorbic acid c) Adipic acid d) Saccharic acid

36. Starch is composed of two polysaccharides which are
    a) amylopectin and glycogen b) amylose and glycogen c) amylose and amylopectin
    d) cellulose and glycogen.

37. The secondary structure of a protein refers to :

a) regular folding patterns of continuous portions of the polypeptide chain

b)

three-dimensional structure, specially the bond between amino acid residues that are distant from each other in the polypeptide drain

c) mainly denatured proteins and structures of prosthetic groups.

d) linear sequence of amino acid residues in the polypeptide chain.

38. **Assertion:** Glucose gets oxidised to gluconic acid on reaction with mild oxidising agent like bromine water.

Reason: Glucose contains a keto group.

a) If both assertion and reason are true and reason is the correct explanation of assertion.

b)

If both assertion and reason are true but reason is not the correct explanation of assertion.

c) If assertion is true but reason is false. d) If both assertion and reason are false.

39. Genetic code determines

a) sequence of amino acids in a peptide chain

b) sequence of variable amino acids in a protein chain c) structure of human cells

d) morphology of traits.

40. Amino acids are classified as acidic, basic or neutral depending upon the relative number of amino and carboxyl groups in their molecule. Which of the following are acidic?

(i) $\left(CH_3\right)_2CH-\underset{\displaystyle NH_2}{\underset{|}{CH}}-COOH$

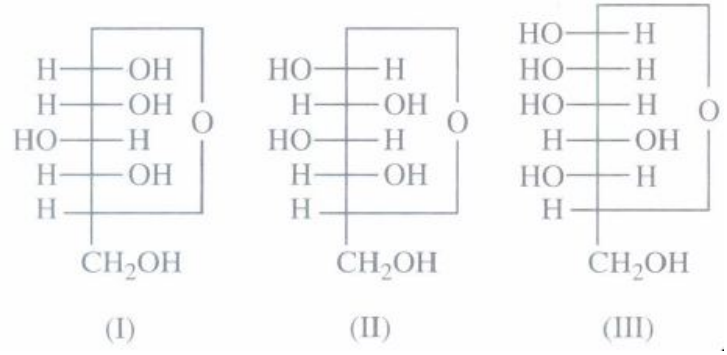
(ii) $HOOC-CH_2-CH_2-\underset{\displaystyle NH_2}{\underset{|}{CH}}-COOH$

(iii) $H_2N-CH_2-CH_2-CH_2-COOH$

(iv) $HOOC-CH_2-\underset{\displaystyle NH_2}{\underset{|}{CH}}-COOH$

a) (ii) and (iv) b) (iii) and (iv) c) (i) and (ii) d) (ii) and (iii)

41. Three cyclic structures of monosaccharides are given below. Which of these are anomers?



a) I and II b) II and III c) I and III d) III is anomer of I and II

42. Glucocorticoids

a) control the carbohydrate metabolism b) modulate inflammatory reactions

c) are involved in the reactions to stress d) all of these

43. Haemoglobin is _____.

a) an enzyme b) a globular protein c) a vitamin d) a carbohydrate

44. Which of the following is the correct statement?

a) Starch is a polymer of α -glucose b) Amylose is not a component of starch.

c) Proteins are composed of only one type of amino acid.

d) In cyclic structure of fructose, there are five carbon and one oxygen atoms.

45. DNA and RNA contain four bases each. Which of the following bases is not present in RNA?
a) Adenine b) Uracil c) Thymine d) Cytosine

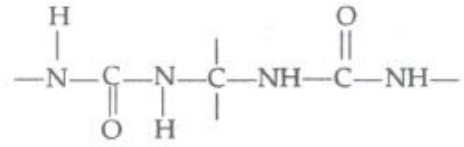
46. The melting points of amino acids are higher than the corresponding halo-acids because:
a) amino acids exist as zwitter ions resulting in strong dipole - dipole attraction

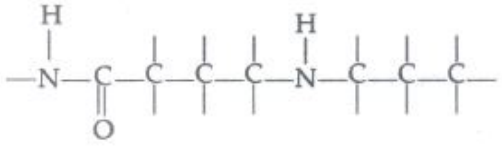
b) amino acids are optically active

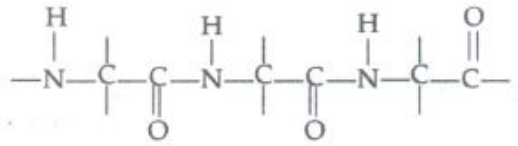
c) due to higher molecular mass of $-NH_2$ group molecular mass of amino acids is higher

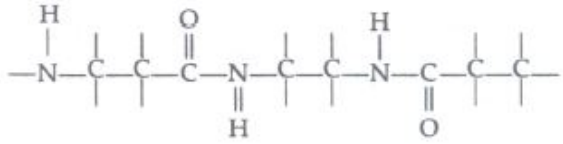
d) they interact with water more than halo-acids and have salt like structure.

47. Which of the following structures represents the peptide chain?

a) 

b) 

c) 

d) 

48. On hydrolysis of starch, we finally get _____.
a) glucose b) fructose c) both (a) and (b) d) sucrose

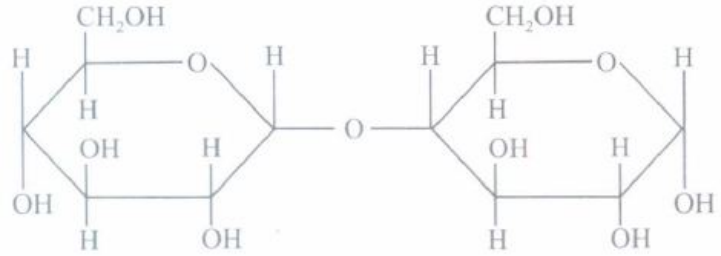
49. When adenine is attached to ribose sugar, it is called adenosine. To make a nucleotide from it, would require
a) oxygenation b) addition of a base c) addition of phosphate d) hydrogenation

50. Within the list shown below, the correct pair of structures of alanine in pH ranges 2-4 and 9-11 is
I. $H_3N^+CH(CH_3)CO_2H$
II. $H_2NCH(CH_3)CO^-_2$
III. $H_3N^+CH(CH_3)CO^-_2$
IV $H_2NCH(CH_3)CO_2H$
a) I, II b) I, III c) II, III d) III, IV

51. Which of the following is a basic amino acid?
a) Lysine b) Serine c) Alanine d) Tyrosine

52. The couplings between base units of DNA is through :
a) hydrogen bonding b) electrostatic bonding c) covalent bonding
d) vander Waal's forces.

53. Study the structure of maltose and mark the incorrect statement.



a) Maltose is composed of two a-D-glucose units.
b) C-1 of one glucose is linked to C-4 of other unit. c) It is a non-reducing sugar.
d) It is a disaccharide.

54. Which of the following is correct about H-bonding in nucleotide?
a) A - T, G - C b) A - G, T - C c) G - T, A - C d) A - A, T - T

55. A compound which contains both..... and ..... is called amino acid. The amino acids in polypeptide chain are joined by..... bonds.
a) amino, carboxylic group, ester b) amino, carboxylic group, peptide
c) nitrogen, carbon, glycosidic d) hydroxy, carboxylic group, peptide

56. Keratin, a structural protein is present in
a) hair b) wool c) silk d) all of these.

57. Which of the following is an acidic amino acid?
a) Glycine b) Valine c) Leucine d) Glutamic acid

58. which of the following is an example of an aldopentose?
a) D-Ribose b) Glyceraldehyde c) Fructose d) Erythrose

59. RNA is a
a) single helix strand b) double helix strand c) right hand twisted double helix strand
d) triple helix strand.

60. Pick up the incorrect statement from the following
a) Glucose exists in two different crystalline forms, α-D-glucose and β-D-glucose.
b) Cyclic structure of α-D-glucose and β-D-glucose is called pyranose structure
c) α - glucose an β - D-glucoseare enantiomers.
d) Cellulose is a straight chain polysaccharide made up of only β-glucose units

61. Each polypeptide in a protein has amino acids linked with each other in a specific sequence. This sequence of amino acids is said to be_____.
a) primary structure of proteins b) secondary structure of proteins
c) tertiary structure of proteins d) quaternary structure of proteins

62. A diabetic person carries a packet of glucose with him always, because
a) glucose increases the blood sugar level slowly b) glucose reduces the blood sugar level
c) glucose increases the blood sugar level almost instantaneously
d) glucose reduces the blood sugar level slowly.

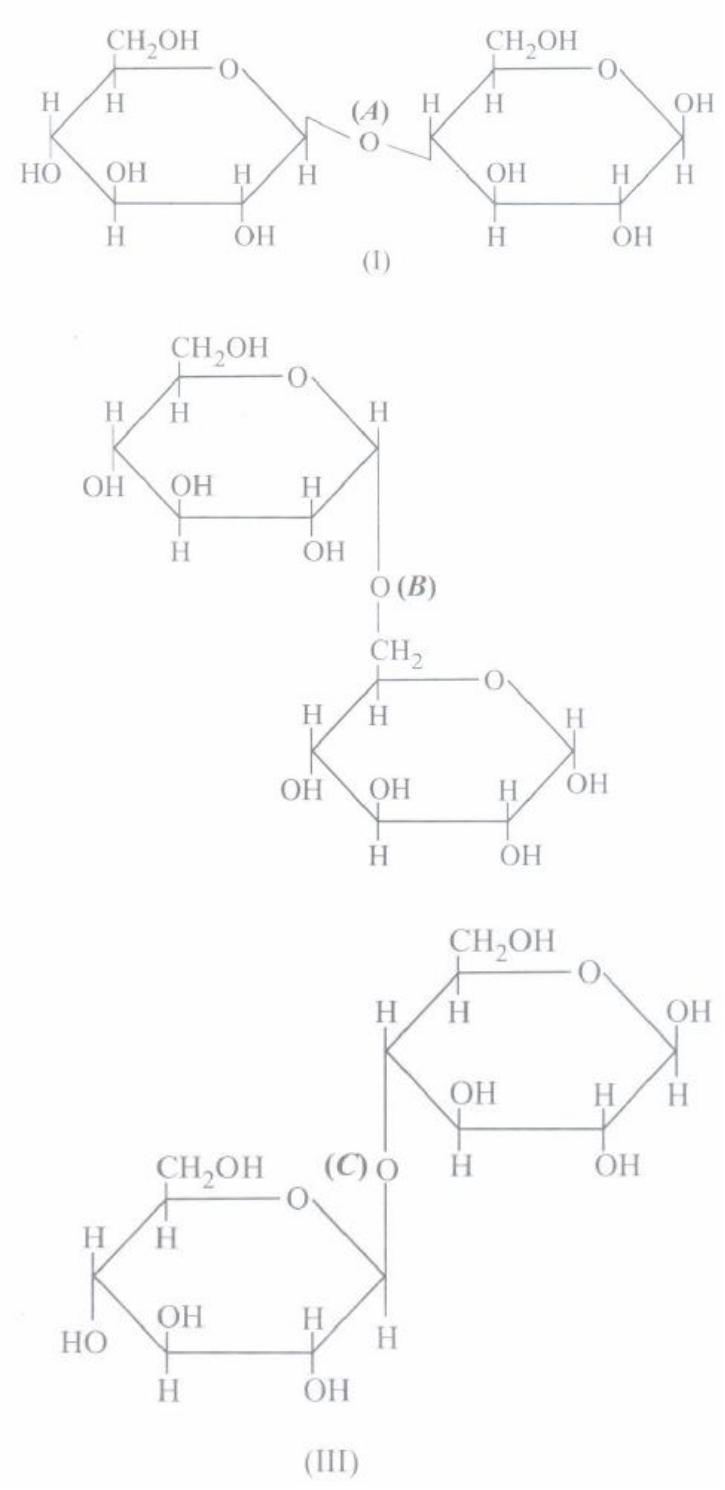
63. **Assertion:** Polysaccharides are called non-sugars.
Reason: Carbohydrates which yield a large number of monosaccharide units on hydrolysis are called polysaccharides.

a) If both assertion and reason are true and reason is the correct explanation of assertion.

b)
If both assertion and reason are true but reason is not the correct explanation of assertion.

c) If assertion is true but reason is false. d) If both assertion and reason are false.

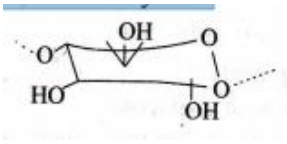
64. Three structures are given below in which two glucose units are linked. Which of these linkages between glucose units are between C-I and C-4 and which linkages are between C-I and C-6?

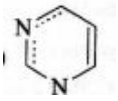


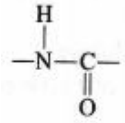
a) (A) is between C-I and C-4, (B) and (C) are between C-I and C-6.
b) (A) and (B) are between C-I and C-4, (C) is between C-I and C-6.
c) (A) and (C) are between C-I and C-4, (B) is between C-I and C-6.
d) (A) and (C) are between C-I and C-6, (B) is between C-I and C-4.

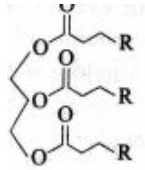
65. Secondary structure of protein refers to
    a) sequence of amino acids in polypeptide chain
    b) bonds between alternate polypeptide chains c) folding patterns of polypeptide chain
    d) bonding between NH^+_3 and COO^- of two peptides.

66. Which one of the following chemical units is certainly to be found in enzyme?

a) 

b) 

c) 

d) 

67. The correct statement in respect of protein haemoglobin is that it _____.
    a) acts as an oxygen carrier in the blood
    b) forms antibodies and offers resistance to diseases
    c) functions as a catalyst for biological reactions d) maintains blood sugar level

68. Guanine is an example of
    a) a nitrogenous base b) a nucleoside c) a nucleotide d) phosphate.

69. Glucose $\xrightarrow{HCN} X \xrightarrow{\text{Hydrolysis}} Y \xrightarrow[\text{Heat}]{HI} Z$ Identify Z.
    a) 2-Iodoheptane b) Heptane-2-ol c) 2-Iodohexane d) Heptanoic acid

70. **Assertion :** Vitamin D cannot be stored in our body.
    Reason : Vitamin D is fat soluble vitamin and is excreted out of the body with urine.
    a) If both assertion and reason are true and reason is the correct explanation of assertion.
    b)
    If both assertion and reason are true but reason is not the correct explanation of assertion.
    c) If assertion is true but reason is false. d) If both assertion and reason are false.

71. Which of the following statements is not correct?
    a) Proteins are polyamides formed from amino acids.
    b) Except glycine, all other amino acids show optical activity.
    c) Natural proteins are commonly made up of L-isomer of amino acids.
    d) In α-amino acids, -NH_2 and - COOH groups are attached to different carbon atoms.

72. In aqueous solutions, amino acids mostly exist as
    a) NH_2 - CHR - COOH b) NH_2 - CHR - COO^- c) $\overset{+}{N}H_3CHRCOOH$ d) $\overset{+}{H_3}NCHRCOO^-$

73. Match the column I with column II and mark the appropriate choice.

	Column - I		**Column -II**
(A)	Pentose sugar in DNA	(i)	Ascorbic acid
(B)	Nucleic acid	(ii)	Uracil
(C)	RNA	(iii)	Genetic material
(D)	Vitamin	(iv)	Furanose structure

    a) (A) → (iv), (B) → (iii), (C) → (ii), (D) → (i)
    b) (A) → (iii), (B) → (ii), (C) → (iv), (D) → (i)
    c) (A) → (ii), (B) → (iii), (C) → (iv), (D) → (i)
    d) (A) → (i), (B) → (ii), (C) → (iii), (D) → (iv)

74. RNA and DNA are chiral molecules, their chirality is due to :

a) chiral bases b) chiral phosphate ester units c) D-sugar component
d) L-sugar component

75. The α-amino acid which contains the aromatic side chain is
a) proline b) tyrosine c) valine d) serine

76. Which of the following is correct about H-bonding in nucleotide?
a) A--A and T--T b) G---T and A---C c) A--G and T--C d) A--T and G--C

77. Which of the following vitamins is water-soluble?
a) Vitamin E b) Vitamin K c) Vitamin A d) Vitamin B

78. Match the column I with column II and mark the appropriate choice.

Column - I		**Column - II**	
(A)	Nucleoside	(i)	Sugar +base + phosphoric acid group
(B)	Nucleotide	(ii)	Cytosine + uracil
(C)	DNA	(iii)	Sugar + base
(D)	RNA	(iv)	Cytosine + thymine

a) (A) → (iii), (B) → (i), (C) → (iv), (D) → (ii)
b) (A) → (i), (B) → (iv), (C) → (iii), (D) → (ii)
c) (A) → (ii), (B) → (iii), (C) → (i), (D) → (iv)
d) (A) → (iv), (B) → (ii), (C) → (i), (D) → (iii)

79. Which one of the following is not correct?
a) D(-) Fructose exists in furanose structure. b) D(+) Glucose exists in pyranose structure.
c) In sucrose the two monosaccharides are held together by peptide linkage.
d) Maltose is a reducing sugar.

80. The hormone that helps in the conversion of glucose to glycogen is _____.
a) Cortisone b) Bileacids c) Adrenaline d) Insulin

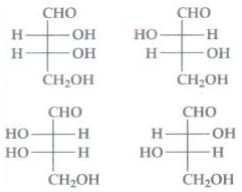
81. RNA molecules are of three types which are based on their different functions. These are
a) messenger RNA, translational RNA, structural RNA
b) cytosine RNA, nucleoside RNA, nucleotide RNA
c) messenger RNA, ribosomal RNA, transfer RNA
d) primary RNA, secondary RNA, tertiary RNA.

82. Vegetable oils like wheat germ oil, sunflower oil, etc. are the good source of
a) vitamin K b) vitamin E c) vitamin D d) vitamin A.

83. The segment of DNA which acts as the instrumental manual for the synthesis of the protein is: _____.
a) ribose b) gene c) nucleoside d) nucleotide

84. Primary structure of a protein is
a) sequence in which a-amino acids are linked to one another
b) sequence in which amino acids of one polypeptide chain are joined to other chain
c) the folding patterns of polypeptide chains
d) the pattern in which the polypeptide chains are arranged.

85. The correct corresponding order of four aldoses with configuration given below :



Respectively, is :

a) L-erythrose, L-threose, L-erythrose, D-threose

b) D-threose, D-erythrose, L-threose, L-erythrose

c) L-erythrose, L-threose, D-erythrose, D-threose

d) D-erythrose, D-threose, L-erythrose, L-threose.

86. Which of the following represents a peptide chain?

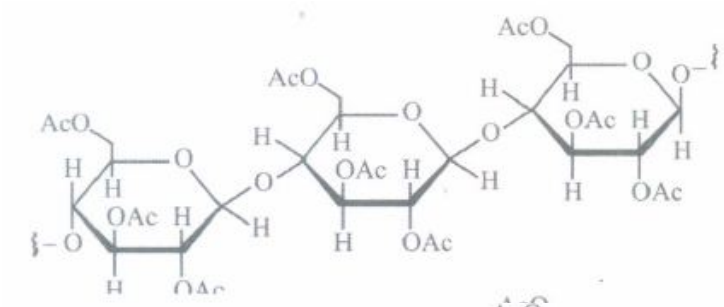
a) $-NH-\overset{\overset{O}{\|}}{C}-NH-\overset{\overset{|}{}}{C}-NH-\overset{\overset{O}{\|}}{C}-NH-$ b) $-NH-\overset{\overset{O}{\|}}{C}-CH_2-CH_2CH_2-NH-CH_2CH_2-C-\overset{\overset{O}{\|}}{O}$

c) $-NH-CH_2-C-\overset{\overset{O}{\|}}{O}NH-CH_2-C-\overset{\overset{O}{\|}}{O}NH-CH_2$

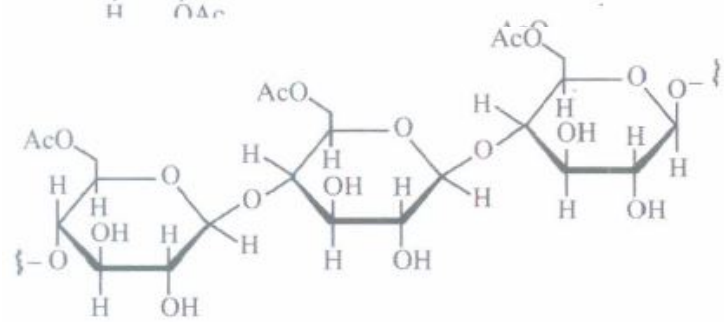
d) $-NH-CH_2CH_2-C-\overset{\overset{O}{\|}}{O}NH-NH-CH_2-C-\overset{\overset{O}{\|}}{O}CH_2$

87. Cellulose upon acetylation with excess acetic anhydride/H_2SO_4 (catalytic) gives cellulose triacetate whose structure is

a)



b)



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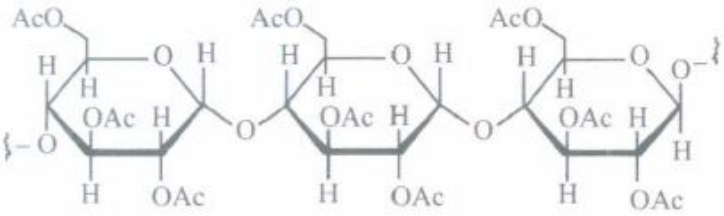

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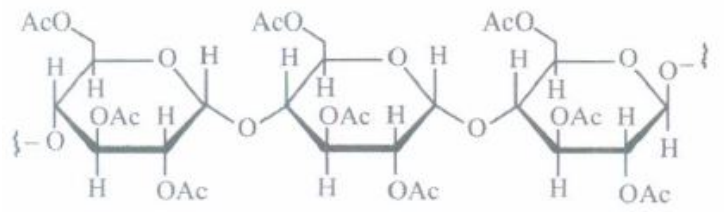


88. Nucleic acids are

a) small molecules b) dipeptides c) long chain polymers of nucleotides d) polypeptides

89. Match the name of vitamins in column I with their sources in column II and mark the appropriate choice.

Column -I		Column - II	
(A)	Vitamin B_1	(i)	Milk, yeast, cereals
(B)	Vitamin B_{12}	(ii)	Meat, fish, egg
(C)	Vitamin A	(iii)	Carrots, butter, papaya
(D)	Vitamin C	(iv)	Citrus fruits, amla, green leafy vegetables

a) (A) → (iii), (B) → (iv), (C) → (i), (D) → (ii)
b) (A) → (ii), (B) → (iii), (C) → (iv), (D) → (i)
c) (A) → (iv), (B) → (iii), (C) → (ii), (D) → (i)
d) (A) → (i), (B) → (ii), (C) → (iii), (D) → (iv)

90. Which of the following compounds is found abundantly in nature?
a) Fructose b) Starch c) Glucose d) Cellulose

91. Which one of the following sets of monosaccharides forms sucrose?
a) α-D-galactopyranose and α-D glucopyranose
b) α-D-glucopyranose and β-D-fructofuranose
c) β-D-galactopyranose and α-D glucopyranose
d) α-D-galactopyranose and β-D glucopyranose

92. Which one of the following is an amine hormone?
a) Thyroxine b) Oxypurin c) Insulin d) Progesterone

93. The general formula of carbohydrates is
a) $C_nH_{2n+1}O$ b) $CnH_{2n}O$ c) $C_n(H_2O)_n$ d) $C_n(H_2O)_{2n}$

94. Proteins are found to have two different types of secondary structures viz. α-helix and β-pleated sheet structure. α-helix structure of protein is stabilised by
a) peptide bonds b) van der Waals forces c) hydrogen bonds
d) dipole-dipole interactions

95. Which of the following hormones contains iodine?
a) Testosterone b) Adrenaline c) Thyroxine d) Insulin

96. The double strand helix structure of DNA was proposed by
a) Har Gobind Khorana b) Watson and Crick c) A.R. Todd d) G.w. Kenner.

97. Which one of the following does not exhibit the phenomenon of mutarotation?
a) (+) Sucrose b) (+) Lactose c) (+) Maltose d) (-) Fructose

98. Sucrose (cane sugar) is a disaccharide. One molecule of sucrose on hydrolysis gives _____.
a) 2 molecules of glucose b) 2 molecules of glucose + 1 molecule of fructose
c) 1 molecule of glucose + 1 molecule of fructose d) 2 molecules of fructose

99. Glucose molecule reacts with 'X' number of molecules of phenylhydrazine to yield osazone. The value of 'X' is _____.
a) four b) one c) two d) three

100. Which of the following gives positive Fehling solution test?
a) Protein b) Sucrose c) Glucose d) Fats

101. Which one is responsible for production of energy in bin-reaction?

a) Thyroxine b) Adrenaline c) Oestrogen d) Progesterone

102. Which of the following is correct?
a) Cycloheptane is an aromatic compound b) Diastase is an enzyme
c) Acetophenone is an ether d) All of these

103. Chemically considering digestion is _____.
a) anabolism b) hydrogenation c) hydrolysis d) dehydrogenation

104. Deficiency of vitamin E causes
a) rickets b) scurvy c) muscular weakness d) beri beri

105. **Assertion :** The two strands of DNA are complementary to each other.
Reason: Adenine specifically forms hydrogen bonds with guanine whereas cytosine forms hydrogen bonds with thymine.
a) If both assertion and reason are true and reason is the correct explanation of assertion.
b)
If both assertion and reason are true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false. d) If both assertion and reason are false.

106. An example of biopolymer is _____.
a) Teflon b) neoprene c) nylon-66 d) DNA

107. Which of the statements about "Denaturation", given below are correct?
(1) Denaturation of protein causes loss of secondary and tertiary structures of the protein.
(2) Denaturation affects primary structure which gets distorted.
a) (2) and (3) b) (1) and (3) c) (1) and (2) d) (1), (2) and (3)

108. Among the following, the narrow-spectrum antibiotic is _____.
a) Ampicillin b) Amoxycillin c) Chloramphenicol d) Penicillin G

109. Which one given below is a non-reducing sugar?
a) Maltose b) Lactose c) Glucose d) Sucrose

110. Which of the following is water-soluble?
a) Vitamin E b) Vitamin K c) Vitamin A d) Vitamin B

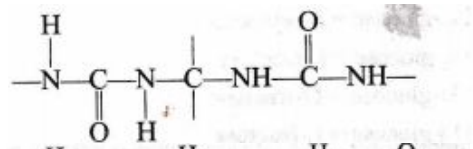
111. Which compound can exist in a dipolar (zwitter ion) structure?
a) $C_6H_5CH_2CH(N=CH_2)COOH$ b) $\left(CH_3\right)_2CHCH(NH_2)COOH$ c) $C_6H_5CONHCH_2COOH$
d) $HOOCCH_2CH_2COCOOH$

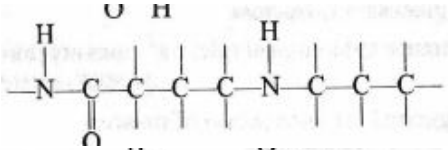
112. Which one of the following bases is not present in DNA?
a) Adenine b) Thymine c) Cytosine d) Uracil

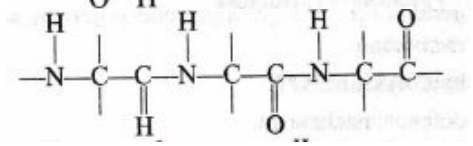
113. Which one given below is a non-reducing sugar?
a) Glucose b) Sucrose c) Maltose d) Lactose

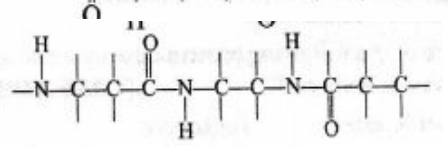
114. Dinucleotide is obtained by joining two nucleotides together by phospho diester linkage. Between which carbon atoms of pentose sugars of nucleotides are these linkages present?
a) 5' and 3' b) 1' and 5' c) 5' and 5' d) 3' and 3'

115. Which one of the following structures represents the peptide chain?

a) 

b) 

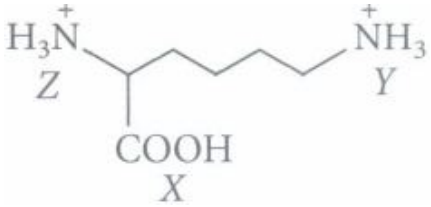
c) 

d) 

116. Which one of the following statements is not true regarding (+) lactose?
a) On hydrolysis (+) lactose gives equal amount of D(+) glucose and D(+) galactose.
b)
(+) Lactose is a β-glucoside formed by the union of a molecule of D(+) glucose and a molecule of D(+) galactose
c) (+) Lactose is a reducing sugar and does not exhibit mutarotation.
d) (+) Lactose, $C_{12}H_{22}O_{11}$ contains 8-OH groups

117. Which is not true statement?
a) a-carbon of a-amino acid is asymmetric b) All proteins are found in L-form.
c) Human body can synthesize all proteins they need.
d) At pH=7 both amino and carboxylic groups exist in ionized form.

118. The two main differences between RNA and DNA are
a) ribose sugar and thymine in RNA b) deoxyribose sugar and uracil in DNA
c) ribose sugar and uracil in RNA d) deoxyribose sugar and guanine in DNA.

119. Consider the compound 

and arrange X, Y, Z in order of increasing acid strengths.
a) X > Z > Y b) Z < X < Y c) X > Y > Z d) Z > X > Y

120. The function of enzymes in the living system is to _____.
a) transport oxygen b) provide immunity c) catalyse biochemical reactions
d) provide energy

121. The α- and β-forms of glucose are:
a) isomers of D(+) glucose and L(-) glucose respectively b) diastereomers of glucose
c) anomers of glucose d) isomers which differ in the configuration of C-2.

122. Thymine is
a) 5-methyluracil b) 4-methyluracil c) 3-methyluracil d) 1-methyluracil

123. Proteins are condensation polymers of
a) α- amino acids b) β - amino acids c) α - hydroxy acids d) β - amino acids

124. Which of the following diseases is not correctly matched with the vitamins mentioned with it?
a) Vitamin B_2 - Cracking of lips b) Vitamin C -Bone deformities
c) Vitamin D -Osteomalacia d) Vitamin A -Night blindness

125. —C—NH—(peptide bond).
Which statement is incorrect about peptide bond?

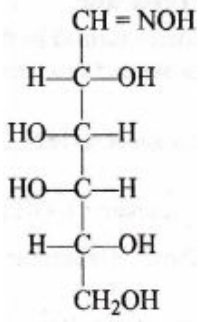
a) C—N bond length in proteins is longer than usual bond length of N—C bond structure
b) Spectroscopic analysis shows planar of
c) C—N bond length in proteins is smaller than usual bond length of C—N bond.
d) None of the above.

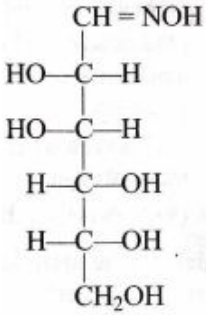
126. Which one of the following is a peptide hormone?
a) Adrenaline b) Glucagon c) Testosterone d) Thyroxine

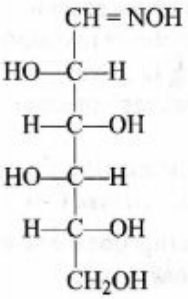
127. Number of chiral carbons in β-(D)-(+) glucose is :
a) five b) six c) three d) four

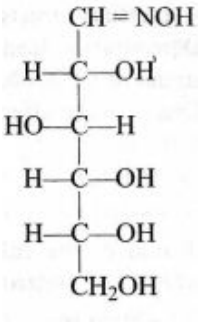
128. Which of the following statements is true for proteins?
a) They act as antibodies. b) They act as hormones.
c) They catalyse the biochemical reactions. d) All of these.

129. D(+) glucose reacts with hydroxylamine and yields an oxime. The structure of the oxime would be _____.

a) 

b) 

c) 

d) 

130. Which of the following compounds can form a zwitter ion?
a) Benzoic acid b) Acetanilide c) Aniline d) Glycine

131. On boiling the egg, what structural changes are taking place in the egg white?
a) The colour of the egg changes from colourless to white.
b) 2° and 3° structures are destroyed but 1° structure remains intact.
c) 1°, 2° and 3° structures of egg are destroyed
d) A reversible change takes place which can be reversed by decreasing the temperature.

132. During the process of digestion, the proteins present in food materials are hydrolysed to amino acids. The two enzymes involved in the process

$$\text{Proteins} \xrightarrow{\text{Enzyme (A)}} \text{Polypeptides} \xrightarrow{\text{Enzyme (o)}} \text{Amino acids}$$ are respectively.

a) Diastase and Lipasa b) Pepsin and Trypsin c) Invertase and Zymase
d) Amylase and Maltase

133. Match the vitamins given in column I with the deficiency diseases caused by it given in column II and mark the appropriate choice.

Column - I		**Column - II**	
(A)	Vitamin B_1	(i)	Convulsions
(B)	Vitamin B_2	(ii)	Pernicious anemia
(C)	Vitamin B_{12}	(iii)	Beri beri
(D)	Vitamin B_6	(iv)	Cheilosis

a) (A) → (iv), (B) → (iii), (C) → (i), (D) → (ii)
b) (A) → (i), (B) → (iv), (C) → (iii), (D) → (ii)

c) (A) → (ii), (B) → (i), (C) → (iv), (D) → (iii)
d) (A) → (iii), (B) → (iv), (C) → (ii), (D) → (i)

134. The couplings between base units of DNA is through _____.
a) hydrogen bonding b) electrostatic bonding c) covalent bonding
d) van der Waals, forces

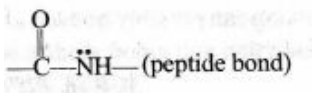
135. Invert sugar is
a) a type of cane sugar b) optically inactive form of sugar
c) mixture of glucose and galactose
d) mixture of glucose and fructose in equimolar quantities

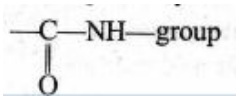
136. Vitamin A is present in
a) fish liver oil b) milk c) butter d) all of these.

137. Which of the statement about "Denaturation" given below are correct?
(i) Denaturation of proteins causes loss of secondary and tertiary structures of the protein
(ii) Denaturation leads to the conversion of double strand of DNA into single strand
(iii) Denaturation affects primary structure which gets distorted
a) (ii) and (iii) b) (i) and (iii) c) (i) and (ii) d) (i), (ii) and (iii)

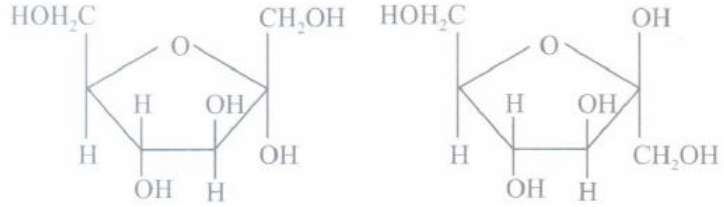
138. Which of the following is not produced by human body?
a) Enzymes b) Vitamins c) Proteins d) Nucleic acid

139. Cellulose present in plants and as a food for cattle but not for human beings because
a) human body does not contain cellulase hence cellulose cannot be broken into D-glucose
b) human saliva cannot break down plant cellulose in small pieces
c) bile juice present in cattle helps them to digest cellulose
d) human beings have a smaller stomach than cattle.

140. For 

Which statement is incorrect about peptide bond?
a) C-N bond length in proteins is longer than usual bond length of the C-N bond
b) Spectroscopic analysis shows planar structure of the 

c) C-N bond length in proteins is smaller than usual bond length of the C-N bond.
d) None of the above

141. Five-membered ring structures of fructose are given below. Mark the incorrect statement.


a) The five-membered ring structures are named as furanose structures.
b) The cyclic structures represent two anomers of fructose.
c) Five-membered ring structures are named as pyranose structures.
d) These are also called Haworth structures.

142. **Assertion:** Purine bases present in DNA are adenine and guanine.
Reason: The base thymine is present in RNA while base uracil is present in DNA.
a) If both assertion and reason are true and reason is the correct explanation of assertion.
b)
If both assertion and reason are true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false. d) If both assertion and reason are false.

143. The enzymes which hydrolysis triglycerides to fatty acids and glycerol is called _____.
a) Maltase b) Lipase c) Zymase d) Pepsin

144. The number of amino acids found in proteins that a human body can synthesise is
a) 20 b) 25 c) 10 d) 100

145. A sequence of how many nucleotides in messenger RNA makes a codon for an amnion acid?
a) Three b) Four c) One d) Two

146. The number of molecules of ATP produced in the lipid metabolism of a molecule of palmitic acid is _____.
a) 130 b) 36 c) 56 d) 86

147. Which of the following is not true about amino acids?
a) They are constituents of all proteins.
b) Alanine having one amino and one carboxylic group.
c) Most naturally occurring amino acids have D- configuration.
d) Glycine is the only naturally occurring amino acid which is optically inactive.

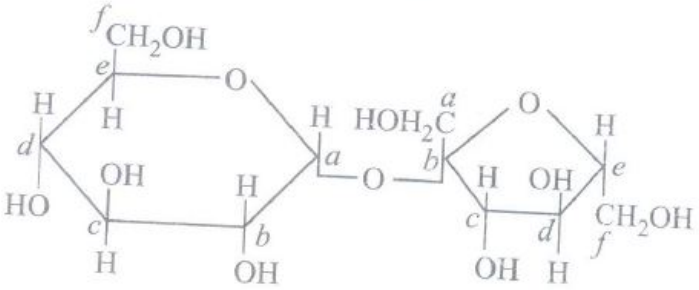
148. Deficiency of vitamin B, causes the disease?
a) Convulsions b) Beri-Beri c) Cheilosis d) Sterility

149. **Assertion:** D-glucose is dextrorotatory whereas I-glucose is laevorotatory.
Reason : D-compounds are always dextro andI-compounds are always laevorotatory.
a) If both assertion and reason are true and reason is the correct explanation of assertion.
b)
If both assertion and reason are true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false. d) If both assertion and reason are false.

150. In DNA, the complimentary bases are _____
a) Adenine and thymine; guanine and cytosine b) Adenine and thymine; guanine and uracil
c) Adenine and guanine; thymine and cytosine
d) Uracil and adenine; cytosine and guanine

151. Which of the following hormones is produced under the conditions of stress which stimulate glycogenolysis in the liver of human beings?
a) Thyroxin b) Insulin c) Adrenaline d) Estradiol

152. Stucture of a disaccharide formed by glucose and fructose is given below. Identify anomeric carbon atoms in monosaccharide units.



a) 'a' carbon of glucose and 'a' carbon of fructose
b) 'a' carbon of glucose and 'e' carbon of fructose
c) 'a' carbon of glucose and 'b' carbon of fructose
d) 'f' carbon of glucose and 'f' carbon of fructose

153. Artificial sweetener which is stable under cold conditions only is _____.
a) Saccharine b) Sucralose c) Aspartame d) Alitame

154. Which of the following in an amine hormone?
a) Insulin b) Progesterone c) Thyroxine d) Oxypurin

155. Denaturation of protein leads to loss of its biological activity by
a) formation of amino acids b) loss of primary structure
c) loss of both primary and secondary structure
d) loss of both secondary and tertiary structures.

156. Which of the following statements is not true about glucose?
a) It is an aldohexose. b) On heating with HI it forms n-hexane.
c) It is present in furanose form. d) It does not give 2, 4-DNP test.

157. Among the naturally occurring carbohydrates, furanose ring is found in the
a) glucose unit of cane sugar b) glucose unit of cellulose c) fructose unit of cane sugar
d) galactose unit of lactose

158. **Assertion:** Sucrose is a non reducing sugar.
Reason: Sucrose is a disaccharide formed by glycosidic linkage between C-1 of α-glucose and C-2 of β-fructose.
a) If both assertion and reason are true and reason is the correct explanation of assertion.
b)
If both assertion and reason are true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false. d) If both assertion and reason are false.

159. The human body does not produce _____.
a) Vitamins b) Hormones c) Enzymes d) DNA

160. During acetylation of glucose it needs x moles of acetic anhydride. The value of x would be
a) 3 b) 5 c) 4 d) 1

161. A unit in nucleic acid which contains 'base-sugar phosphate' unit is called
a) nucleotide b) nucleoside c) phosphotide d) polypeptide.

162. Which one of the following statements is not true regarding (+) lactose?

a) On hydrolysis (+) Lactose gives equal amount of D(+) glucose and D(+) galactose.

b)

(+) Lactose is a B-glycoside formed by the union of a molecule of D(+) glucose and a molecule of D(+) galactose.

c) (+) Lactose is a reducing sugar and does not exhibit mutarotation.

d) (+) Lactose, $C_{12}H_{22}O_{11}$ contains 8-OH groups.

163. Which one of the amino acids can be synthesised in the body?

a) Alanine b) Lysine c) Valine d) Histidine

164. Glycogen is a branched chain polymer of a-D-glucose units in which chain is formed by C-1 - C-4 glycosidic linkage whereas branching occurs by the formation of C-1- C-6 glycosidic linkage. Structure of glycogen is similar to_____.

a) amylose b) amylopectin c) cellulose d) glucose

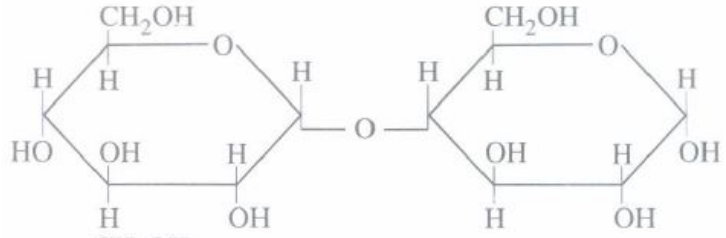
165. Enzymes are made up of _____.

a) Edible proteins b) Proteins with specific structure

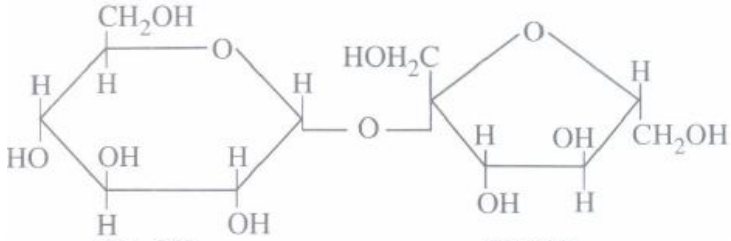
c) Nitrogen-containing carbohydrates d) Carbohydrates

166. In disaccharides, if the reducing groups of monosaccharides i.e. aldehydic or ketonic groups are bonded, these are non-reducing sugars. Which of the following disaccharide is a non-reducing sugar?

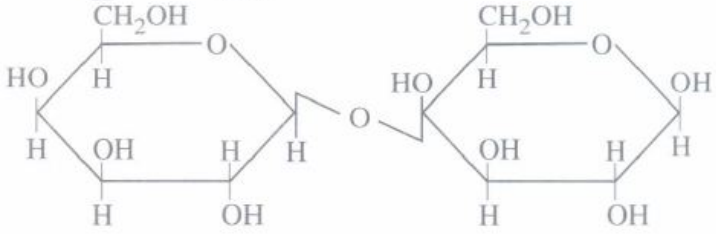
a)



b)



c)



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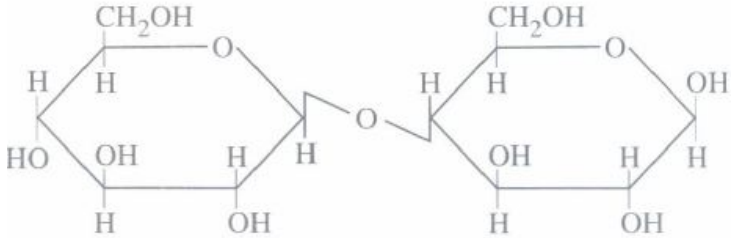


167. The hydrogen bonding for the bases pairs of DNA are between

a) amide carbonyl and -NH_2 only b) amide N - H and cyclic amine nitrogen only

c) alcohols and carbonyls only d) both (a) and (b).

168. In fibrous proteins, polypeptide chains are held together by

a) van der Waals forces b) electrostatic forces of attraction c) hydrogen bonds

d) covalent bonds.

169. Which is the correct statement?
a) Starch is a polymer of α-glucose b) Amylose is a component of cellulose
c) Proteins are composed of only one type of amino acid.
d) In cyclic structure of fructose, there are four carbons and one oxygen atom.

170. Which is not a true statement?
a) α -Carbon of α-amino acid is asymmetric b) All proteins are found in L-form
c) Human body can synthesize all proteins they need
d) At PH =7 both amino and carboxylic groups exist in ionised form

171. Which of the following statements is not true?
a) Glucose and fructose both are monosaccharides

b) The natural glucose and fructose are D-forms.

c)
The solution having equal molecules of D-glucose and D-fructose is termed as invert sugar

d) Aldohexoses exist in 2^6 optical forms

172. Which of the following is the sweetest sugar?
a) Fructose b) Glucose c) Sucrose d) Maltose

173. Which of the following can possibly be used as analgesic without causing addiction and mood modification?
a) Morphine b) Diazepam c) Tetrahydrocational d) N-acetyl-para-aminophenol

174. Which functional group participates in disulphide bond formation in proteins?
a) Thioester b) Thioether c) Thiol d) Thiolactone

175. Most common types of secondary structures of proteins are
a) α- helix and β- helix structures b) α helix and β - pleated sheet structures

c) right and left hand twisted structures d) globular and fibrous structures.

176. Which of the following statements is not correct?
a) Ovalbumin is a simple food reserve in egg-white.
b) Blood proteins thrombin and fibrinogen are involved in blood clotting.
c) Denaturation makes the proteins more active.
d) Insulin maintains sugar level in the blood of a human body.

177. Which type of interactions are responsible for making the a-helix structure stable?
a) Peptide bonds between - NH_2 and CO groups of adjacent carbon chains.

b)
Hydrogen bonds between - NH of amino acid in one turn with - CO of amino acid to adjacent turn.

c) -OH group of one amino acid with -CO group of other amino acid on the turn.

d) Hydrogen bonds between adjacent amino acids.

178. The conversion of maltose into glucose is possible by the enzyme
a) zymase b) lactase c) maltase d) diastase

179. Mark the wrong statement about denaturation of proteins.
a) The primary structure of the protein does not change.
b) Globular proteins are converted into fibrous proteins.
c) Fibrous proteins are converted into globular proteins.
d) The biological activity of the protein is destroyed.

180. Glycolysis is _____.
a) conversion of glucose to haem b) oxidation of glucose of glutamate
c) conversion of pyruvate to citrate d) oxidation of glucose to pyruvate

181. Amino acids generally exist in the form of Zwitter ions. This means they contain
a) basic $-NH_2$ group and acidic -COOH group
b) the basic $-NH_3$ group and acidic $-COO^-$ group c) basic $-NH_2$ and acidic $-H^+$ group
d) basic $-COO^-$ group and acidic $-NH_3$ group.

182. Nucleic acids are the polymers of_____.
a) nucleosides b) nucleotides c) bases d) sugars

183. The cell membranes are mainly composed of _____.
a) fats b) proteins c) phospholipids d) carbohydrates

184. Which of the following is not a function of proteins?
a) Formation of hair, wool, skin and nails.
b) As a biological catalysts in the form of enzymes. c) As food in the form of meat, eggs.
d) As energy provider for metabolism.

185. Match the column I with column II and mark the appropriate choice.

Column -I		**Column - II**	
(A)	Peptide linkage	(i)	Inversion
(B)	Nucleic acid	(ii)	Polysaccharide
(C)	Hydrolysis of cane sugar	(iii)	Proteins
(D)	Starch	(iv)	Nucleotides

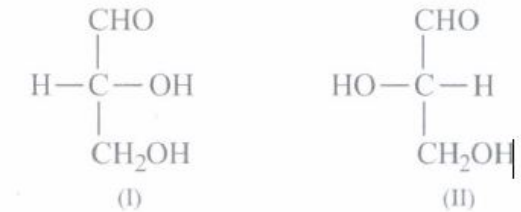
a) (A) → (ii), (B) → (i), (C) → (iii), (D) → (iv)
b) (A) → (iv), (B) → (i), (C) → (ii), (D) → (iii)
c) (A) → (iii), (B) → (iv), (C) → (i), (D) → (ii)
d) (A) → (i), (B) → (iii), (C) → (iv), (D) → (ii)

186. The difference between amylose and amylopectin is:
a) Amylopectin have 1 ⟶ 4 α-linkage and 1 ⟶ 6 β-linkage
b) Amylose have 1 ⟶ 4 α-linkage and 1 ⟶ 6 β-linkage
c) Amylopectin have 1 ⟶ 4 α-linkage and 1 ⟶ 6 α-linkage
d) Amylose is made up of glucose and galactose

187. Cellulose is a
a) hexapolysaccharide b) pentapolysaccharide c) tripolysaccharide d) none of these.

188. Deficiency of vitamin B_1 causes the disease :
a) convulsions b) beri-beri c) cheilosis d) sterility

189. The given structures (I) and (II) represent configuration of the simplest sugar glyceraldehyde. Which of the following statements is not correct for the structures?



a) (I) represents D-form while (II) represents L- form of glyceraldehyde.
b) The sugars having same configuration as D-glyceraldehyde are designated as D-sugars.
c) Natural glucose and fructose are D-forms.
d) D is dextrorotatory while L is laevorotatory enantiomer.

190. Glycosidic linkage is an
a) amide linkage b) ester linkage c) ether linkage d) acetyl linkage.

191. The hormone thyroxine
a) is secreted by pancreas b) is secreted by thyroid c) decreases blood sugar
d) does not stimulate metabolism

192. If one strand of DNA has the sequence ATGCTTGA, the sequence in the complimentary strand would be
a) TCCGAACT b) TACGTAGT c) TACGAATC d) TACGAACT

193. What are the hydrolysis products of sucrose?
a) Fructose + Fructose b) Glucose + Glucose c) Glucose + Galactose
d) Glucose + Fructose

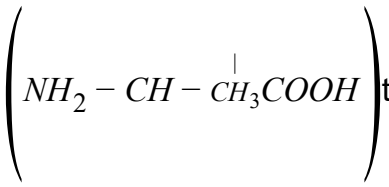
194. In reference to biological role, Ca^{2+} ions are important in _____.
a) triggering the contraction of muscles
b) generating the right electrode potential across cell membrane c) hydrolysis of ATP
d) defence mechanism

195. **Assertion :** Glucose is correctly named as D-(+)-glucose.
Reason: 'D' before the name of glucose represents its dextrorotatory nature.
a) If both assertion and reason are true and reason is the correct explanation of assertion.
b)
If both assertion and reason are true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false. d) If both assertion and reason are false.

196. **Assertion:** All enzymes found in cells are invariably proteins which catalyse biological reactions.
Reason : Enzymes act efficiently at a moderate temperature and pH.
a) If both assertion and reason are true and reason is the correct explanation of assertion.
b)
If both assertion and reason are true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false. d) If both assertion and reason are false.

197. Carbohydrates are stored in human body as the polysaccharide
a) starch b) glycogen c) cellulose d) amylose.

198. The peptide linkage formed between glycine (NH_2CH_2COOH) and alanine



to give glycylalanine can be shown as:

a) $NH_2 - CH_2 - NH - CH\overset{|}{C}H_3 - COOH$ b) $NH_2 - CH_2 - CONH - CH\overset{|}{C}H_3 - COOH$

c) $H_2NCOCH_2 - CH\overset{|}{C}H_3 - CONH_2$ d) $HOOC - CH_2 - NH - NH - CH\overset{|}{C}H_3 - COOH$

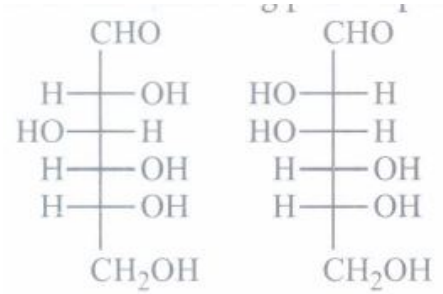
199. The oxidation of glucose is one of the most important reaction in a living cell. What is the number of ATP molecules generated in cells from one molecule of glucose :
a) 28 b) 38 c) 12 d) 18

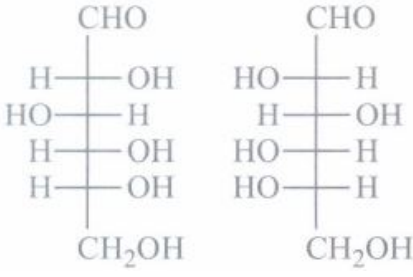
200. **Assertion:** Hydrolysis of sucrose brings about a change in sign of rotation from dextro to laevo.
Reason : Hydrolysis always changes the optical rotation of a compound.
a) If both assertion and reason are true and reason is the correct explanation of assertion.
b)
If both assertion and reason are true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false. d) If both assertion and reason are false.

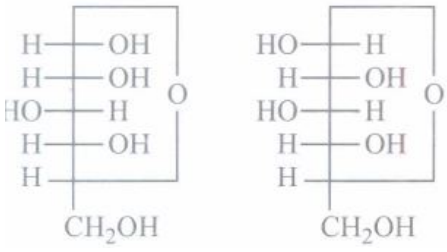
201. Which of the following is a non-reducing sugar?
a) Glucose b) Sucrose c) Maltose d) Lactose

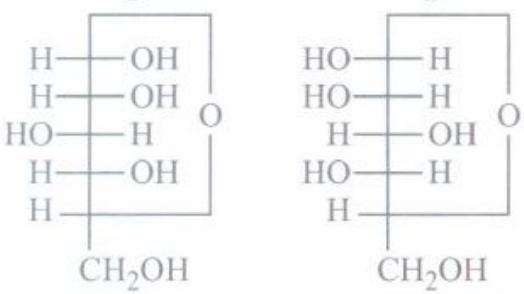
202. Sucrose on hydrolysis gives _____.
a) α - Fructose + β-Fructose b) β-Glucose + α-Fructose c) α -Glucose + β-Glucose
d) α-Glucose + β-Fructose

203. Which of the following pairs represents anomers?

a) 

b) 

c) 

d) 

204. A nucleoside on hydrolysis gives
a) an aldopentose and a nitrogenous base b) an aldopentose and phosphoric acid
c) an aldopentose, a nitrogenous base and phosphoric acid
d) a nitrogenous base and phosphoric acid.

205. Mg is present in :

a) chlorophyll b) haemoglobin c) vitamin-D d) vitamin-B

206. Match the sugars in column I with their types given in column IIand mark the appropriate choice.

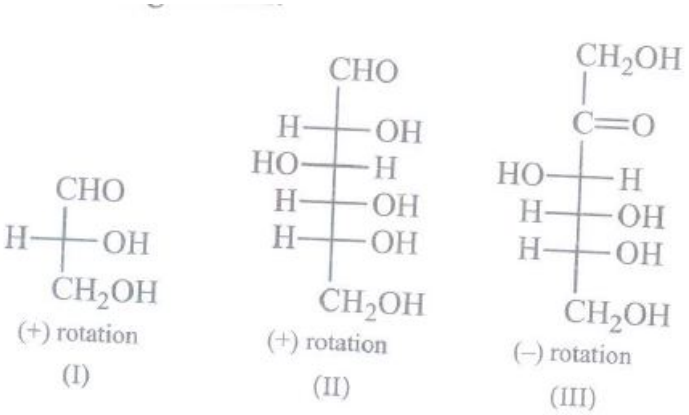
Column - I		**Column -II**	
(A)	Glucose	(i)	Ketohexose
(B)	Fructose	(ii)	Aldohexose
(C)	Ribose	(iii)	Aldotetrose
(D)	Erythrose	(iv)	Aldopentose

a) (A) → (iv), (B) → (i), (C) → (iii), (D) → (ii)
b) (A) → (iii), (B) → (iv), (C) → (i), (D) → (ii)
c) (A) → (i), (B) → (ii), (C) → (iii), (D) → (iv)
d) (A) → (ii), (B) → (i), (C) → (iv), (D) → (iii)

207. Phospholipids are esters of glycerol with _____.
a) Three phosphate groups b) Three carboxylic acid residues
c) Two carboxylic acid residues and one phosphate group
d) One carboxylic acid residue and two phosphate groups

208. The anomeric carbon in D(+) glucose is:
a) C-1 carbon b) C-2 carbon c) C-5 carbon d) C-6 carbon

209. Optical rotations of some compounds along with their structures are given below. Which of them have D-configuration?



a) I,II,III b) II,III c) I,II d) III

210. Which one of the following, statements is incorrect about enzymes catalysis
a) Enzymes are mostly proteinous in nature. b) Enzyme action is specific.
c) Enzymes are denatured by ultraviolet rays and at high temperature.
d) Enzymes are least reactive at optimum temperature.

211. The helical structure of protein is stabilized by _____.
a) dipeptide bonds b) hydrogen bonds c) ether bonds d) Peptide bonds

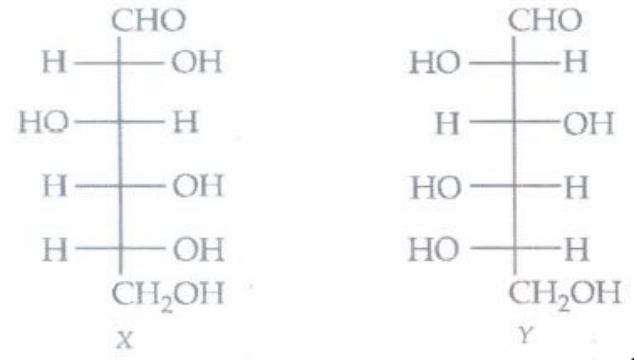
212. Vitamin C must be supplied regularly in diet because
a) it is water soluble hence excreted in urine and can't be stored in the body
b) it is fat soluble hence stored in the body and cannot be used on regular basis
c) it is required in a large amount by the body hence supplied regularly
d) it is water soluble hence used by the body on daily basis and is to be supplied regularly.

213. The central dogma of molecular genetics states that the genetic information flows from :

a) Amino acids ⟶ Proteins ⟶ DNA b) DNA ⟶ Carbohydrates ⟶ Proteins
c) DNA ⟶ RNA ⟶ Proteins d) DNA ⟶ RNA ⟶ Carbohydrates

214. The α-D-glucose and β-D-glucose differ from each other due to difference in carbon atom with respect to its :
a) number of OH groups b) size of hemiacetal ring c) conformation d) configuration

215. Among the following statements about the molecules X and Y, which is incorrect?



a) X and Y are diastereomers. b) X and Y are enantiomers.
c) X and Y are both aldohexoses d) X is a D-sugar and Y is an L-sugar

216. Hyperglycemia implies
a) high blood-sugar level b) low blood -sugar level c) high concentration of salt in blood
d) low concentration of salt in blood

217. Which of the following treatment will convert starch directly into glucose?
a) Heating with dilute H_2SO_4 b) Fermentation by diastase c) Fermentation by zymase
d) Heating with dilute NaOH

218. Maltose is made up of:
a) two α-D-glucose b) normal β-D-glucose c) α- and β-D-glucose d) fructose

219. Which of the following polymers is stored in the liver of animals?
a) Amylose b) Amylose c) Amylopectin d) Glycogen

220. The α-D-glucose and β-D-glucose differ from other due to difference in carbon atom with respect to its _____.
a) conformation b) configuration c) number of OH-groups d) size of hemiacetal ring

221. Amino acids are least soluble
a) at pH around 7 b) at pH 7 c) at their isoelectric points d) none of these.

222. RNA and DNA are chiral molecules, their chirality due to _____.
a) chiral bases b) chiral phosphate ester units c) D-sugar component
d) L-sugar component

223. **Assertion:** The two cyclic hemiacetal forms of glucose, α- form and β-form are called anomers.
Reason : Anomers differ only in the configurationof the hydroxyl group at C-1.
a) If both assertion and reason are true and reason is the correct explanation of assertion.
b)
If both assertion and reason are true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false. d) If both assertion and reason are false.

224. Globular proteins are present in
a) blood b) eggs c) milk d) all of these.

225. Cellulose is a polymer of _____.
a) Glucose b) Fructose c) Ribose d) Sucrose

226. In DNA the linkages between different nitrogenous bases are _____.
a) peptide linkage b) phosphate linkage c) H-bonding d) glycosidic linkage

227. **Assertion :** In presence of enzyme, substrate molecule can be attacked by the reagent effectively.
Reason: Active sites of enzymes hold the substrate molecule in a suitable position.
a) If both assertion and reason are true and reason is the correct explanation of assertion.
b)
If both assertion and reason are true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false. d) If both assertion and reason are false.

228. On oxidation with a mild oxidising agent like Br_2/H_2O, the glucose is oxidised to
a) saccharic acid b) glucaric acid c) gluconic acid d) valeric acid.

229. Vitamin B_2, a water soluble vitamin is also known as
a) ascorbic acid b) riboflavin c) thiamine d) pyridoxine

230. Which of the following is not a fat soluble vitamin?
a) Vitamin B complex b) Vitamin D c) Vitamin E d) Vitamin A