

GPLUS EDUCATION

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CHEMISTRY

BIOMOLECULES

Single Correct Answer Type

- Identify the correct statement regarding enzymes
 - Enzymes are specific biological catalysts that can normally function at very high temperatures ($T \sim 1000$ K)
 - Enzymes are normally heterogeneous catalysts that are very specific in their action
 - Enzymes are specific biological catalysts that cannot be poisoned
 - Enzymes are specific biological catalysts that possess well defined active sites
- Which statement is not correct for an enzyme?
 - It acts as a biocatalyst
 - Its aqueous solution is colloidal
 - It can catalyse any chemical reaction
 - Its catalytic efficiency is temperature dependent
- The vector for genetic code is called
 - Messenger RNA
 - Transfer RNA
 - Ribosomal RNA
 - Viral DNA
- Vitamin A is also known as:
 - Xerophythol
 - Thiamine
 - Riboflavin
 - Pyridoxine
- Fructose is prepared commercially by...a polysaccharide which occurs in dahlia tubers and Jerusalem arthichokes.
 - Inulin
 - Cellulose
 - Lactose
 - None of these
- Sugars are characterized by the preparation of osazone derivatives. Which sugar have identical osazones?
 - Glucose and lactose
 - Glucose and fructose
 - Glucose and arabinose
 - Glucose and maltose
- Which one of the following is an example of a non-reducing sugar?
 - Sucrose
 - Lactose
 - Maltose
 - Cellobiose
- Epimers are pair of diastereoisomeric aldoses which differ only in configuration at position:
 - C₅
 - C₂
 - C₄
 - C₃
- Which one of the following compounds is not a vitamin?
 - Ascorbic acid
 - Thiamine
 - Testosterone
 - Riboflavin
- The presence or absence of hydroxyl group on which carbon atom of sugar differentiates RNA and DNA?
 - 1st
 - 2nd
 - 3rd
 - 4th
- Turpentine oil is obtained from:
 - Oak tree
 - Pine tree
 - Birch tree
 - Lemon tree
- Protein gives blue colour with
 - Benedict reagent
 - Iodine solution
 - Ninhydrin
 - Biurete
- The red colouring matter of blood which transport oxygen contains an element in a system of rings. The element is:
 - Iron
 - Magnesium
 - Cobalt
 - Calcium
- Proteins are
 - Polypeptides with low molecular weights
 - Polypeptides with high molecular weights
 - Polymers of amides
 - Polymers of secondary amines

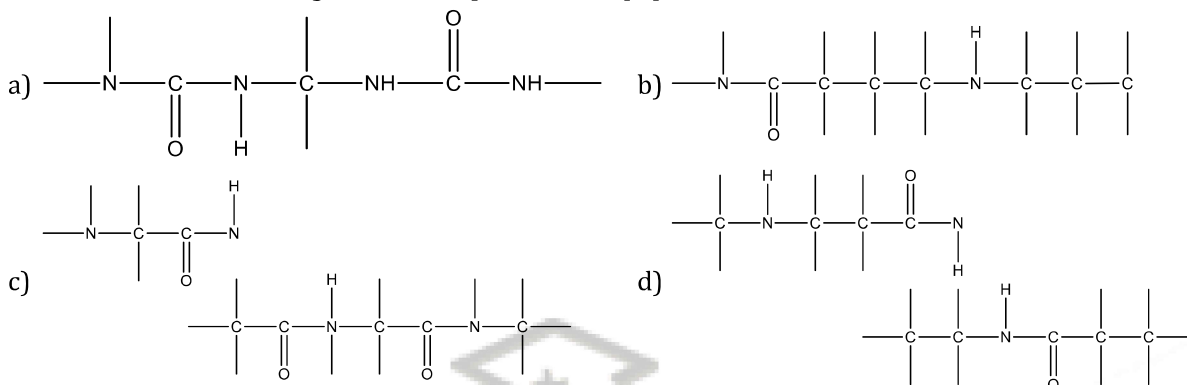
15. A substance forms Zwitter ion. It can functional groups
 a) $\text{—NH}_2, \text{—COOH}$ b) $\text{—NH}_2, \text{—SO}_3\text{H}$ c) Both (a) and (b) d) None of these
16. A chemical substance acts as the currency of energy metabolism in a cell. It is:
 a) Adenosine triphosphate
 b) Adenosine diphosphate
 c) Adenosine monophosphate
 d) Glucose
17. Artificial sweetner used in soft drinks is:
 a) Glucose b) Fructose c) Cellulose d) Asparatame
18. DNA multiplication is called
 a) Translation b) Transduction c) Transcription d) Replication
19. Which of the following is the first member of monosaccharides?
 a) $\begin{array}{c} \text{O} \\ || \\ \text{CH}_2\text{OH—C—CH}_2\text{OH} \end{array}$
 b) $\text{CH}_2\text{OH—CHOH—CHO}$
 c) $\text{CH}_2\text{OH—CHOH—CHOH—CHO}$
 d) $\begin{array}{c} \text{O} \\ || \\ \text{CH}_2\text{OH—CHOH—C—CH}_2\text{OH} \end{array}$
20. Which is not a reducing sugar?
 a) Glucose b) Fructose c) Mannose d) Sucrose
21. Fats and oils are formed from:
 a) Glycerol and long chain unsaturated acids only
 b) Glycerol and long chain saturated acids only
 c) Glycerol and long chain saturated and unsaturated acids
 d) Ethylene glycol and long chain saturated and unsaturated acids
22. A solution of D-glucose in water rotates the plane of polarized light
 a) To the left b) To the right c) To either side d) None of these
23. Ordinary soaps are defined as:
 a) Al salts of higher fatty acids
 b) Na salts of lower fatty acids
 c) Na salts of higher fatty acids
 d) Mg salts of lower fatty acids
24. Cellulose is a linear polymer of:
 a) α -glucose b) β -glucose c) α -fructose d) None of these
25. Cofactors (non-proteinic prosthetic groups) used to bond conjugated proteins are:
 a) Carbohydrates b) Phosphoric acid c) Iron pigments d) All are correct
26. 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
27. Acetone may be obtained from starch by the action of :
 a) Acid b) Bacteria c) Oxidizing agent d) None of these
28. Fat on hydrolysis gives which alcohol?
 a) Glycerol b) Propanol c) Butanol d) Ethanol
29. Which one of the following sets of monosaccharides forms sucrose?
 a) β -D-Glucopyranose and α -D-fructofuranose
 b) α -D-Glucopyranose and β -D-fructopyranose
 c) α -D-Galactopyranose and α -D-Glucopyranose
 d) α -D-Glucopyranose and β -D-fructofuranose
30. Simple proteins bonded with a non-proteinic prosthetic group (acting as cofactor) are called:

- a) Simple proteins b) Conjugated proteins c) Proteonic proteins d) None of these
31. Glucose is hydrolysed by zymase into
 a) Amino acids b) Alcohol c) Aromatic acids d) Dicarboxylic acid
32. A carbohydrate is treated with α -naphthol and conc. H_2SO_4 . What colour will be formed at the junction of two liquids?
 a) Blood-red b) Violet c) Brown d) Orange
33. Which of the following test is not used for testing of proteins?
 a) Millon's test b) Molish's test c) Biuret test d) Ninhydrin test
34. In biological systems, the RNA molecules direct the synthesis of specific proteins which are characteristics of each kinds of organism. This process is known as
 a) Transcription b) Mutation c) Replication d) Translation
35. Galactose is converted into glucose in
 a) Mouth b) Stomach c) Liver d) Intenstine
36. A sequence of how many nucleotides in messenger RNA makes a codon for an amino acid?
 a) Three b) Four c) One d) Two
37. The segment of DNA which acts as the instrumental manual for the synthesis of the protein is:
 a) Nucleoside b) Nucleotide c) Ribose d) Gene
38. Which vitamin contains N?
 a) Vitamin A b) Vitamin C c) Vitamin B d) Vitamin D
39. All protein are
 a) Simple b) Biocatalysts c) Useful d) Polymers
40. Iodine test is shown by
 a) Glucose b) Starch c) Glycogen d) Polypeptide
41. Glucose reacts with acetic anhydride to form:
 a) Monoacetate b) Tetra acetate c) Penta acetate d) Hexa acetate
42. Fats and oils belong to the class of:
 a) Alcohols b) Acids c) Esters d) Hydrocarbons
43. The function of DNA is:
 a) To synthesize RNA
 b) To synthesize the necessary proteins
 c) To carry the hereditary characteristics from generation to generation
 d) All are correct
44. The enzyme present in saliva is:
 a) Pepsin b) Peptidase c) Lipase d) Ptyalin
45. On heating with conc. H_2SO_4 sucrose gives:
 a) CO and CO_2 b) CO and SO_2 c) CO, CO_2 and SO_2 d) None of these
46. DNA has deoxyribose, base and the third compound is:
 a) Phosphoric acid b) Ribose c) Adenine d) Thymine
47. To which of the following classes of organic compounds soap belongs?
 a) Esters b) Amines c) Salts of organic acids d) Aldehydes
48. An organic compound consumes 4 moles of periodic acid to form following compounds, per mole of the starting compounds $HCHO$, $3HCOOH$ and $CHOCOOH$. The organic compound is
 a) Glucose b) Fructose c) Gluconic acid d) Sorbitol
49. Which does not contain carbohydrate?
 a) Cellulose b) Wax c) Starch d) Wheat flour
50. Waxes are esters of
 a) Glycerol b) Long chain alcohols
 c) Glycerol and fatty acid d) Long chain alcohols and long chain acids
51. Nucleic acids are:
 a) Polymers of nucleotides

- b) Polymers of nucleosides
 c) Polymers of purine bases through phosphate ester bonds
 d) Phosphate ester bonds
52. Lactose has the same molecular formula as:
 a) Glucose b) Maltose c) Sucrose d) Lactose
53. Which is an amino acid?
 a) Glycine b) Valine c) Lysine d) All of these
54. Glycogen on hydrolysis gives:
 a) Starch b) Amylopectin c) Amylose d) Glucose
55. An enzyme is formed by chemically bonding together
 a) Lipases b) Amino acids
 c) Carbohydrates d) Vitamins of B complex group
56. Glucose with excess of phenyl hydrazine forms:
 a) Fructosazone
 b) Glucose phenyl hydrazone
 c) Glucosazone
 d) Phenyl hydrazone of glucosazone
57. Animal starch is the name given for:
 a) Glycogens b) Lactogens c) Cellulose d) None of these
58. Fructose or ketohexose contains:
 a) 5 —OH groups
 b) 3 secondary alcoholic groups
 c) 2 primary alcoholic gps. And one keto gp.
 d) All of the above
59. A mixture of amylose and amylopectin is called
 a) Lactose b) Starch c) Cellulose d) Sucrose
60. Protein can be most easily removed by:
 a) Alkanes b) Alkenes c) Alkynes d) Benzene
61. Dextrins ($C_6H_{10}O_5$)_n are used in:
 a) Making adhesive b) Confectionary c) Sizing paper d) All of these
62. Aqueous solution of carbohydrate with 2 drops of alcoholic solution of α -naphthol and H_2SO_4 gives a ring at the junction. The colour of the ring is:
 a) Yellow b) Green c) Violet d) Red
63. The catalyst used in the hydrogenation of oils into fats is:
 a) V_2O_5 b) Fe c) Ni d) Pt
64. Which one is absent in protein?
 a) C b) N c) S d) P
65. The energy change produced by the combustion of foods is called the 'calorific value'. The best calorific value is given by:
 a) Proteins b) Fats c) Carbohydrates d) Vitamins
66. Which of the following is not a classification of proteins?
 a) Enzymes b) Antibiotics c) Antigens d) Hormones
67. Commercial detergents contain mainly:
 a) $RONa$ b) $RCOONa$ c) $ROSO_3Na$ d) $ROCH_2CHORCH_2OR$
68. Monosaccharides usually contain:
 a) 3 to 8 carbon atoms b) 5 to 8 carbon atoms c) 2 to 10 carbon atoms d) 6 to 10 carbon atoms
69. In aqueous solution glucose remains as
 a) Only in open chain form b) Only in pyranose form
 c) Only in furanose forms d) In all three forms in equilibrium
70. Glucose forms many derivatives. The derivative which will help to prove the furanose structure is:

- a) Osazone b) Benzoyl c) Acetyl d) Isopropylidene
71. An example of a sulphur containing amino acid is
a) Lysine b) Serine c) Cysteine d) Tyrosine
72. What happens when drying oils are exposed to light and moist air?
a) Polymerization b) Fermentation c) Hardening d) Isomerization
73. Which one is not a protein?
a) Actin b) Collagen c) Albumin d) Haematin
74. Which of the following hormones helps in the conversion of glucose into glycogen in the body?
a) Insulin b) Cortisone c) Thyroxin d) Oxytocin
75. Formation of amylose ring in glucose is an indication that ring in glucose is at:
a) C₁ and C₅ b) C₂ and C₅ c) C₃ and C₆ d) C₂ and C₄
76. Oils are:
a) Phospholipids b) Liquid fats c) Steroids d) All of these
77. Glucose contains in addition to aldehyde group
a) One secondary OH and four primary OH group
b) One primary OH and four secondary OH group
c) Two primary OH and three secondary OH group
d) Three primary OH and two secondary OH group
78. The total number of C-atoms in β-D fructofuranose are:
a) 6 b) 5 c) 4 d) 7
79. Bleeding gums are caused by deficiency of:
a) Thiamine b) Ascorbic acid c) Folic acid d) Vitamin E
80. Which is false
a) Glucose is a disaccharide b) Starch is a polysaccharide
c) Glucose and fructose are not anomers d) Invert sugar consists of glucose and fructose
81. Vitamin B₆ is known as
a) Pyridoxin b) Thiamine c) Tocopherol d) Riboflavin
82. Which is insoluble in water?
a) Glucose b) Cellulose c) Fructose d) Sucrose
83. The antibodies necessary to protect new born babies from infection are derived from:
a) Cow's milk b) Pasteurised milk c) Mother's milk d) Honey
84. The element present in traces in insulin is:
a) Iron b) Cobalt c) Zinc d) Magnesium
85. Adenosine is an example of:
a) Nucleotide b) Nucleoside c) Purine base d) Pyrimidine base
86. Which of the following statements is incorrect?
a) Two polynucleotide chains pointing in opposite directions are coiled to form a double helix
b) Both helixes are right handed
c) The helixes have ten nucleotides in each turn
d) The two chains are not complementary to each other
87. The chemical messengers produced in ductless glands are:
a) Vitamins b) lipids c) Antibiotics d) Hormones
88. The tripeptide hormone present in most living cells is
a) Glutathione b) Glutamine c) Oxytocin d) Ptyalin
89. The chemical change in DNA molecule that could lead to synthesis of protein with an altered amino acid sequence is called
a) Replication b) Lipid formation c) Cellular membrane d) Mutation
90. Calciferol is
a) Vitamin b) Antibiotic c) Hormone d) Antipyretic
91. Keratin, a structural protein is present in:

- a) Hair b) Skin c) Wool d) All of these
92. The letter 'D' in carbohydrates represents:
 a) Its direct synthesis b) Its dextrorotation c) Its mutarotation d) Its configuration
93. The reason for double helical structure of DNA is operation of
 a) Van der Waals' forces b) Dipole -dipole interaction
 c) Hydrogen bonding d) Electrostatic attractions
94. The two functional group present in a typical carbohydrate are
 a) —OH and — COOH b) —CHO and —COOH c) >C= O and —OH d) —OH and —CHO
95. The compound, which give a positive ninhydrin test and a negative Benedict's solution test, is
 a) A monosaccharide b) A disaccharide c) A lipid d) A protein
96. The change in the optical rotation of freshly prepared solution of glucose is known as
 a) Tautomerism b) Racemization c) Specific rotation d) Mutarotation
97. Which one of the following structure represents the peptide chain?



98. Water insoluble component of starch is
 a) Amylopectin b) Amylose c) Cellulose d) None of these
99. Which one of the given proteins transports oxygen in the blood stream?
 a) Myoglobin b) Insulin c) Albumin d) Haemoglobin
100. Oxygen, necessary for life on earth was formed in atmosphere as a result of:
 a) Eradication of ozone
 b) Photosynthesis
 c) Electric discharge on water
 d) None of the above
101. Which of the following is ketohexose?
 a) Glucose b) Sucrose c) Fructose d) Ribose
102. Which of the following enzymes hydrolysis starch to glucose?
 a) Amylase b) Invertase c) Lactase d) Maltase
103. Which one is a phospholipid?
 a) Lecithin b) Cephalin c) Kephalin d) All of these
104. Hydrolysis of fats and oils yield:
 a) Dihydride alcohol b) Trihydric alcohol c) Esters d) Unsaturated acids
105. RNA contains
 a) Ribose sugar and thymine b) Ribose sugar and uracil
 c) Deoxyribose sugar and uracil d) Deoxyribose sugar and thymine
106. Starch is changed into disaccharides in presence of:
 a) Diastase b) Maltase c) Lactase d) zymase
107. Cane sugar on hydrolysis yields:
 a) Glucose and maltose b) Glucose and lactose c) Glucose and fructose d) Only glucose
108. The colour of the precipitate formed when a reducing sugar is heated with Fehling's solution is:
 a) Brown b) Red c) Blue d) Green
109. Invert sugar is:

- a) Chemically inactive form of sugar
 b) Equimolecular mixture of glucose and fructose
 c) Mixture of glucose and sucrose
 d) A variety of cane sugar
110. Consider the following reagents
 I. Br₂ water II. Tollen's reagent
 III. Fehling's solution
 Which can be used to make distinction between an aldose and a ketose?
 a) I, II and III b) II and III c) I only d) II only
111. Which one of the following vitamins contains a metal atom?
 a) Riboflavin b) Vitamin B₁₂ c) Vitamin A d) Vitamin B₆
112. Carbohydrate contains:
 a) -OH gp. b) -CHO gp c) >CO=O gp. d) All of these
113. Which is used for making rayon (artificial silk)?
 a) Starch b) Cellulose c) Terephthalic acid d) Adipic acid
114. Which carbohydrate is as important as steel and is employed in manufacture of many articles in daily use as well as most abundant in nature?
 a) Cellulose b) Glucose c) Starch d) Sucrose
115. Glucose gives silver mirror with ammoniacal silver nitrate because it has
 a) Aldehyde group b) Ester group
 c) Ketone group d) Alcoholic silver nitrate
116. Aleurone grains are
 a) Starch b) Glycogen c) Lipid d) Protein
117. The number of disulphide linkage present in insulin are
 a) 1 b) 2 c) 3 d) 4
118. Which are not the essential constituents of balanced diet?
 a) Carbohydrates b) Fats c) Proteins d) Hormones
119. Starch can be used as an indicator for the detection of the traces of:
 a) Glucose in aqueous solution
 b) Proteins in blood
 c) Iodine in aqueous solution
 d) Urea in blood
120. The number of milligram of KOH required to neutralise 1 g of the oil or fat is called:
 a) Saponification value b) Iodine value c) Acetyl value d) Acid value
121. The destruction of the biological nature and activity of proteins by heat or chemical agent is called:
 a) Dehydration b) Denaturation c) Denitrogenation d) Deamination
122. Glucose and mannose are
 a) Epimers b) Anomers c) Ketoheptoses d) Disaccharides
123. The hormone thyroxine:
 a) Is secreted by pancreas
 b) Is secreted by thyroid
 c) Decreases blood sugar
 d) Does not stimulate metabolism
124. Although D-galactose rotates plane-polarised light, its oxidation product, galactaric acid, due to HNO₃, does not. It is due to
 a) Galactaric acid is racemic mixture of D- and L-isomer b) Galactaric acid is a *meso* compound
 c) Both are correct d) None of the above is correct
125. Which of the following vitamins is present in cod-liver oil?
 a) A b) B₁₂ c) B₁ d) C

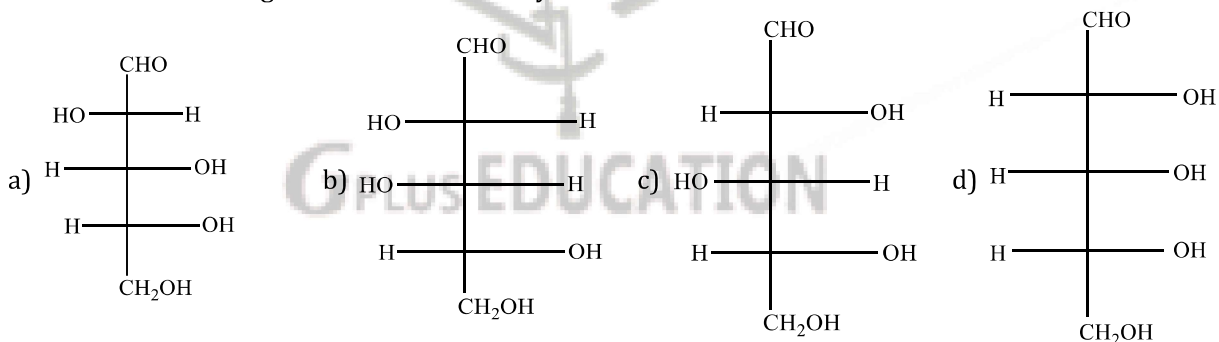
126. Glucose molecule reacts with 'X' number of molecules of phenyl hydrazine to yield osazone. The value of 'X' is
 a) Four b) One c) Two d) Three
127. Diabetes is detected, using for testing urine of patients.
 a) Fehling 's solution b) Tollen's reagent c) Benedict's solution d) Baeyer's reagent
128. A nanopeptide contains peptide linkages.
 a) 10 b) 8 c) 9 d) 18
129. The pH value of a solution in which a polar amino acid does not migrate under the influence of electric field is called:
 a) Isoelectronic point b) Isoelectric point c) Neutralization point d) None of these
130. Cellophane is made from:
 a) Cellulose b) Phenol c) Gum d) Petroleum
131. The letter 'D' in D-glucose signifies
 a) Configuration at all chiral carbons b) Dextrorotatory
 c) That it is a monosaccharide d) Configuration at a particular chiral carbon
132. The number of asymmetric carbon atoms in fructose are:
 a) 2 b) 3 c) 4 d) 5
133. Which of the following compounds can be detected by Molisch's test?
 a) Sugars b) Amines c) Primary alcohols d) Nitro compounds
134. Vitamin which is believed to cure common cold is:
 a) A b) C c) K d) E
135. The store house for all biological information is:
 a) RNA b) m-RNA c) DNA d) None of these
136. Which of the following compounds is known as the antisterility factor?
 a) α -tocopherol b) Retinol c) Calciferol d) Pyridoxine
137. Which amino acid has imidazole ring?
 a) Alanine b) Leucine c) Tyrosine d) Histidine
138. DNA molecule consists of units of:
 a) Base-sugar
 b) Base-sugar-phosphate
 c) Base-phosphate
 d) None of these
139. On fermentation, glucose yields
 a) Ethanol b) Ethanal c) Acetic acid d) Fructose
140. In DNA, the complementary bases are,
 a) Adenine and thymine; guanine and cytosine
 b) Uracil and adenine; cytosine and guanine
 c) Adenine and guanine; thymine and cytosine
 d) Adenine and thymine; guanine and uracil
141. Iodised salt prevents
 a) TB b) Anaemia c) Goiter d) Beri-beri
142. Nucleotide pairs present in one turn of DNA helix
 a) 4 b) 10 c) 8 d) 9
143. Which of the following is not an amino acid?
 a) Glycine b) Alanine c) Histidine d) Benzidine
144. Proteins mainly contain:
 a) C, H, O and N b) Only C and H c) C, H and O d) N and H
145. The two forms of D-glucopyranose obtained from the solution of D-glucose are called
 a) Isomer b) Anomer c) Epimer d) Enantiomer
146. Raffinose is

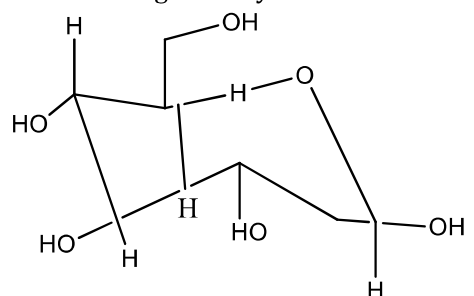
- a) Trisaccharide b) Disaccharide c) Monosaccharide d) Polysaccharide
147. A saturated fatty acid found in oils and fats is:
 a) Palmitic acid b) Linolenic acid c) Oleic acid d) Linoleic acid
148. The enzyme that hydrolyses casein of milk into par casein is:
 a) Renoline b) Rennin c) Replication d) Renil
149. Which of the following is a fat soluble vitamin?
 a) Vitamin A b) Riboflavin c) Pyridoxine d) Thiamine
150. The enzyme pepsin hydrolyses
 a) Proteins to amino acids b) Fats to fatty acids
 c) Glucose to ethyl alcohol d) Polysaccharides to monosaccharides
151. Hydrolysis of fats and oils in the body produces:
 a) A fatty acid b) Carbon dioxide c) A lipase d) An ester
152. Deoxyribonucleic acid (DNA) is a polymer of units called:
 a) Sugars b) Ribose c) Amino acids d) Nucleotides
153. Scurvy is caused due to deficiency of :
 a) Vitamin B₁ b) Vitamin B₂ c) Ascorbic acid d) Glutamic acid
154. Glycogen and amylopectin have:
 a) Same structure
 b) Similar structure but differ in branching of glucose chain
 c) Similar structure but differ in their solubility in water
 d) Same structure but they are stored in different parts of the body
155. Lactose on hydrolysis yields:
 a) Two glucose molecules
 b) Two galactose molecules
 c) A galactose and fructose molecule
 d) A galactose and a glucose molecule
156. Glycogen is:
 a) Monosaccharide b) Disaccharide c) Trisaccharide d) Polysaccharide
157. Ribose sugar is a component of:
 a) DNA b) RNA c) Glucose d) Wax
158. Which one of the following is a non-steroidal hormone?
 a) Estradiol b) Prostaglandin c) Progesterone d) Estrone
159. It is best to carry out reactions with sugars in neutral or acid medium not in alkaline medium. This is because in alkaline medium sugar undergoes one of the following changes:
 a) Decomposition b) Inversion c) Rearrangement d) Racemization
160. Which is not characteristic of soap?
 a) They are colourless when pure
 b) They are lighter than water
 c) They are immiscible with organic solvents
 d) They form emulsions with water
161. Which of the following vitamins contains isoprene unit?
 a) A b) C c) B₂ d) D
162. Give the pOH range for the isoelectric point of the amphoteric ion of an amino acid
 a) 5.5 to 6.3 b) 2.5 to 5.0 c) 7.7 to 8.5 d) 9.0 to 10.7
163. Wool-wax contains:
 a) Fatty acid ester b) Paraffin wax c) Cholesterol ester d) None of these
164. Which one is the complimentary base of adenine in one strand to that in the other strand of DNA?
 a) Cytosine b) Guanine c) Uracil d) Thymine
165. The helical structure of protein is stabilized by
 a) Dipeptide bonds b) Hydrogen bonds c) Ether bonds d) Peptide bonds

166. The sweetest carbohydrate is
a) Sucrose b) Glucose c) Fructose d) Lactose
167. Cane sugar is made of:
a) 5 membered glucose ring and 5 membered fructose ring
b) 6 membered glucose ring and 6 membered fructose ring
c) 6 membered glucose ring and 5 membered fructose ring
d) 6 membered glucose ring and 6 membered fructose ring
168. Blood protein is:
a) Albumin b) Haemoglobin c) Both (a) and (b) d) None of these
169. Casein contained in milk as a
a) Carbohydrate b) Lipid c) Protein d) Important molecule
170. Which of the following statement (s) is/are true?
(i) All amino acids contain one chiral centre
(ii) Some amino acids contain one, while some contain more chiral centre or even no chiral centre
(iii) All amino acids in protein have L-configuration
(iv) All amino acids found in proteins have 1° amino group
a) (ii), (iii) and (iv) b) (ii) and (iii) c) (i), (iii) and (iv) d) (i) and (iv)
171. Which is not a member of vitamin B complex group?
a) Retinol b) Thiamine c) Riboflavin d) Pyridoxine
172. How many hydrogen bonds are present between pair of thymine and adenine in DNA?
a) 1-hydrogen bond b) 2- hydrogen bond c) 3-hydrogen bond d) No bonds occur
173. The term LABS abbreviates as:
a) Laboratory
b) Lauryl acidic benzene sulphate
c) Linear alkyl benzene sulphonate
d) None of the above
174. Glucose cannot be classified as:
a) A hexose b) A carbohydrate c) An oligosaccharide d) An aldose
175. The organic compounds of high physiological importance which are essential in small amounts for the well being of all human beings are:
a) Proteins b) Vitamins c) Mineral salts d) Enzymes
176. Protein is an important constituent of our diet. It functions mainly as:
a) A sources of energy b) Construction material c) Shock absorber d) Reserve food
177. Which statement about ribose is incorrect?
a) A polyhydroxy compound
b) An aldehyde sugar
c) Has six carbon atoms
d) Exhibits optical activity
178. During hydrogenation of oils, higher melting point 'vegetable ghee' is formed because:
a) Hydrogen is dissolved in the oil
b) Hydrogen combines with oxygen of the oil
c) Esters of unsaturated fatty acids are reduced to those of saturated acids
d) Hydrogen drives off the impurities from the oil
179. Phospholipids are esters of glycerol with
a) One carboxylic acid residue and two phosphate groups
b) Three phosphate groups
c) Three carboxylic acid residues
d) Two carboxylic acid residues and one phosphate groups
180. The structure of RNA molecule consists of:
a) Double helix b) Single helix c) Single strand d) Branched chain

181. One mole of glucose on respiration produces:
a) 36 mole of ATP b) 34 mole of ATP c) 40 mole of ATP d) 38 mole of ATP
182. Number of possible isomers of glucose is:
a) 10 b) 14 c) 16 d) 20
183. When glucose reacts with bromine water, the major product is:
a) Gluconic acid b) Saccharic acid c) Sorbitol d) Galactose
184. Starch is made up of:
a) Glucose and fructose
b) Amylose and amylopectin
c) Amylose and glycogen
d) Amylopectin and glycogen
185. Glucose gives many reactions of aldehyde because:
a) It is hydrolysed to acetaldehyde
b) It is a polyhydroxy ketone
c) It is a cyclic aldehyde
d) It is a hemiacetal in equilibrium with its aldehyde form in solution
186. Which of the following is not an essential amino acid for man?
a) Tyrosine b) Leucine c) Lysine d) Valine
187. Which is not essential oil?
a) Turpentine oil b) Clove oil c) Paraffin oil d) Khus oil
188. Which of the following is laevorotatory?
a) Glucose b) Fructose c) Sucrose d) None of these
189. The number of asymmetric carbon atoms in the glucose molecule is:
a) 1 b) 2 c) 4 d) 6
190. Which of the following exists as Zwitter ion?
a) *p*-aminophenol b) Salicylic acid
c) Sulphanilic acid d) Ethanolamine
191. Glucose is hydrolysed by zymase into:
a) Dicarboxylic acid b) Alcohol c) Amino acids d) Aromatic acids
192. Which statement about protein is wrong?
a) Proteins occur in all living cells
b) Proteins invariably contain N, O, C and H
c) Proteins are synthesized by plant kingdom only
d) Proteins are also synthesized in laboratory
193. Which of the following compound shows aromatic properties?
a) Valine b) Leucine c) Serine d) Tyrosine
194. Bees wax is:
a) Tripalmitin b) Cetyl palmitate c) Myricyl palmitate d) Myricyl ceorate
195. Which of the following is a protein?
a) Pepsin b) Adrenaline c) ATP d) Glutamine
196. Which vitamin is closely involved in the formation of collagen-a protein present in connective tissues and bones?
a) Riboflavin b) Ascorbic acid c) Niacin d) Cyanocobalamine
197. Raffinose on hydrolysis forms:
a) Glucose b) Fructose c) Galactose d) All of these
198. Nucleic acid is a polymer of
a) Nucleotides b) α -amino acids c) Nucleosides d) Glucose
199. Linseed oil is:
a) Used in soap formation
b) Drying oil

- c) Acts as carrier for paints
d) All of the above
200. Glucose and cane sugar can be distinguished by:
a) Fehling's solution b) Baeyer's reagent c) Molisch test d) Iodine solution
201. Spermaceti is commonly used in:
a) Fermentation of cane sugar
b) Preparation of acetic acid
c) Birth control
d) Cosmetics and soaps
202. Metal lauryl sulphate acts as:
a) Soap b) Disinfectant c) Antiseptic d) Detergent
203. The process used in conversion of triolein to tristearin is
a) Hydrolysis b) Hydration c) Hydrogenation d) Dehydrogenation
204. When glucose reacts with bromine water the main product is
a) Gluconic acid b) Glyceraldehyde
c) Sorbitol d) Saccharic acid
205. Which of the following carbohydrates is synthesized by nature on the largest scale?
a) Glucose b) Fructose c) Lactose d) Cellulose
206. The main structural feature of protein is
a) Ester linkage b) Ether linkage c) Peptide linkage d) All of these
207. Which of the following hormones contains iodine?
a) Thyroxine b) Insulin c) Testosterone d) Adrenaline
208. Which of the following is the structure of D-xylose?



209. The following carbohydrate is

- a) A ketohexose b) An aldohexose c) An α -furanose d) An α -pyranose
210. Which molecule possess the general formula of carbohydrates, but is not a carbohydrate?
a) Glyceraldehyde b) Arabinose c) Acetic acid d) All of these
211. Deficiency of vitamin E causes:
a) Sterility b) Rickets c) Beri-beri d) Scurvy
212. Which is polysaccharide?
a) Nylon b) Polyethylene c) Glucose d) Cellulose
213. Sanger's method is used to identify
a) C-terminal amino acid b) N-terminal amino acid

- c) Side chain
d) Molecular weight of protein
214. The carbon chain in fructose is identified by converting it into:
a) α -methyl hexane b) cyclohexane c) *n*-hexane d) α -methyl caproic acid
215. Progesterone is secreted by
a) Thyroid b) Ovaries c) Adrenal d) Testes
216. Which of the following is a heterocyclic amino acid?
a) Glycine b) Alanine c) Phenylalanine d) Tryptophan
217. Which one is not a constituent of nucleic acid?
a) Uracil b) Guanidine c) Phosphoric acid d) Ribose sugar
218. Which is used to identify glucose?
a) Neutral ferric chloride
b) $\text{CHCl}_3 + \text{KOH}(\text{alc.})$
c) Ammoniacal AgNO_3
d) $\text{C}_2\text{H}_5\text{ONa}$
219. Which of the following is non-reducing sugar?
a) Ribose b) Lactose c) Sucrose d) Maltose
220. Hexoses and pentoses are
a) Disaccharides b) Monosaccharides c) Polysaccharides d) Oligosaccharides
221. The sugar present in honey is:
a) Sucrose b) Glucose c) Fructose d) Maltose
222. Which one of the following is not a protein?
a) Wool b) Nail c) Hair d) DNA
223. The deficiency of vitamin B_1 causes
a) Beri-bei b) dermatitis c) Scurvy d) rickets
224. The following carbohydrate is:
-
- a) A ketohexose b) An aldohexose c) An α -furanose d) An α -pyranose
225. The ultimate products of oxidation of most of hydrogen and carbon in food-stuffs are:
a) H_2O alone b) CO_2 alone c) H_2O and CO_2 d) None of these
226. The sources of fats and oils are:
a) Milk b) Butter c) Cheese d) All of these
227. The lye is:
a) 10% solution of NaOH
b) 10% solution of KOH
c) 10% solution of NaCl
d) 10% solution of Na_2CO_3
228. The two forms of D-glucopyranose obtained from the solution of D-glucose are called
a) Isomer b) Anomer c) Epimer d) Enantiomer
229. Glucose and fructose are:
a) Chain isomers b) Position isomers c) Functional isomers d) Optical isomers
230. Initiation of polypeptide chain is through
a) Lysine b) Glycine c) Lencine d) Methionine
231. Nucleic acids contain:
a) 4 purine bases

- b) 4 pyrimidine bases
 c) 2 purine bases and 3 pyrimidine bases
 d) 4 pyrimidine bases and one purine base
232. Antibiotic inhibiting translation in eukaryotes is
 a) Tetracyclin b) Penicillin c) Puromycin d) Chloromycetin
233. The term anomers of glucose refers to
 a) Isomers of glucose that differ in configurations at carbons one and four (C-1 and C-4)
 b) A mixture of (D)-glucose and (L)-glucose
 c) Enantiomers of glucose
 d) Isomers of glucose that differ in configuration at carbon one (C-1)
234. Sucrose is made up of:
 a) Glucopyranose and fructopyranose
 b) A glucopyranose and a fructofuranose
 c) A glycofuranose and a fructofuranose
 d) A glucofuranose and fructopyranose
235. Fats, on alkaline hydrolysis, gives
 a) Oils b) Soaps c) Detergents d) Glycol+ acid
236. Lipids are
 a) Nucleic acids occurring in plants b) Proteins occurring in animals
 c) Carbohydrates occurring in plants d) Fats of natural origin
237. Which one of the following statements is correct?
 a) All amino acids are optically active.
 b) All amino acids except glycine are optically active.
 c) All amino acids except glutamic acid are optically active.
 d) All amino acids except lysine are optically active.
238. Vitamin D is also known as:
 a) Growth vitamin b) Ascorbic acid c) Reproductive vitamin d) Sunshine vitamin
239. Which one of the following statement is not true regarding (+) Lactose?
 a) (+) Lactose, $C_{12}H_{22}O_{11}$ contains 8-OH groups
 b) On hydrolysis (+) Lactose gives equal amount of D(+) glucose and D(+) galactose
 c) (+) Lactose is a β -glycoside formed by the union of a molecule of D(+) glucose and a molecule of D(+) galactose
 d) (+) Lactose is a reducing sugar and does not exhibit mutarotation
240. The α -amino acid which doesn't give purple colour in the ninhydrin test is
 a) Proline b) Glycine c) Lysine d) Aspartic acid
241. How can you say that glucose is cyclic compound?
 a) Glucose undergoes Tollen's reaction
 b) Glucose reacts with phenyl hydrazine
 c) Glucose fails to react with sodium hydrogen sulphite
 d) Glucose reacts with nitric acid
242. An unsaturated acid found in natural oils and fats is:
 a) Palmitic acid b) Myristic acid c) Linoleic acid d) Lauric acid
243. Which of the following elements is responsible for oxidation of water to O_2 in biological processes?
 a) Fe b) Mn c) Cu d) Mo
244. A tripeptide is composed equally of L-valine, L-tryosine and L-alanine (one molecule of each). How many isomeric tripeptide of this kind may exist?
 a) 3 b) 4 c) 6 d) 8
245. Which of the following is an example of conjugated protein?
 a) Albumin b) Globulin c) Glutelin d) Glycoprotein
246. Which of the following is used in our body as a fuel for muscles and nerves and to build and repair body

- tissue?
- a) Cane sugar b) Fructose c) Proteins d) Glucose
247. Pick out the one which doesn't belong to the family?
a) Pepsin b) Cellulose c) Ptyalin d) Lipase
248. Cellulose, starch and glycogen are the polysaccharides having.....monosaccharide unit:
a) Glucose b) Ribose c) Fructose d) Pentose
249. Which one is a test for proteins?
a) Beilstein test b) Biuret test c) Benedict's test d) Molisch test
250. Hydrolysis of oils and fats gives glycerol and long chain fatty acids containing:
a) Even number of carbon atoms
b) Odd number of carbon atoms
c) Both (a) and (b)
d) None of the above
251. Cell membranes are mainly compose of :
a) Phospholipids b) Fats c) Proteins d) Carbohydrates
252. Which one of the following is not present in RNA?
a) Uracil b) Thymine c) Ribose d) Phosphate
253. In blood, the transport of oxygen from lungs to tissues is carried out by:
a) White blood cells(leukocytes)
b) Red blood cells (erythrocytes)
c) Fibrinogen
d) Globulins
254. Glycogen is :
a) A polysaccharide found in both animals and plants
b) A polysaccharide found in plants
c) A polysaccharide found in animals
d) A polysaccharide found in honey
255. Which enzyme hydrolyses triglyceride to fatty acids and glycerol?
a) Amylase b) Maltase c) Lipase d) Pepsin
256. Citrus fruits are an important source of vitamin:
a) B b) C c) D d) K
257. Glucose reacts with acetyl chloride to form penta acetyl glucose, it indicates presence of:
a) Five primary alcoholic groups
b) Five secondary alcoholic groups
c) Aldehyde as well as alcoholic group
d) Five —OH groups
258. Night-blindness may be caused by the deficiency of vitamin
a) A b) B c) D d) C
259. Zwitter ion is formed by
a) Aniline b) Acetanilide c) Benzoic acid d) Glycine
260. In human body enzymes hydrolyse protein into:
a) A ketonic acid like CH_3COCOOH
b) A hydroxyl acid like $\text{CH}_3\text{CHOHCOOH}$
c) Dicarboxylic acid like HOOC—COOH
d) Amino acid like $\text{CH}_2\text{NH}_2\text{COOH}$
261. Starch on hydrolysis by a dilute inorganic mineral acid gives:
a) Sucrose b) Glucose c) Fructose d) maltose
262. Oleic, stearic and palmitic acids are:
a) Nucleic acids b) Amino acids c) Fatty acids d) None of these
263. Oils contain a higher percentage of :

- a) Stearin b) Butyrin c) Olein d) Palmitin
264. Which of the following pairs give positive Tollen's test?
 a) Glucose, sucrose b) Glucose, fructose
 c) Hexanal, acetophenone d) Fructose, sucrose
265. The total number of basic groups in the following form of lysine is
- $$\text{H}_3\text{N}^{\oplus}-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{CH}_2-\underset{\text{H}_2\text{N}}{\text{CH}}-\overset{\text{O}}{\parallel}{\text{C}}-\text{O}^{\ominus}$$
- a) 1 b) 2 c) 3 d) 4
266. Glucose or aldohexose contains:
 a) One $-\text{CHO}$ group
 b) Five $-\text{OH}$ groups
 c) One primary alcoholic group and four secondary alcoholic groups
 d) All are correct
267. The monosaccharides having anomeric carbon atom are
 a) Geometrical isomers b) α -and β -optical isomers
 c) Having symmetrical carbon atoms d) None of the above
268. The charring product formed when $\text{C}_6\text{H}_{12}\text{O}_6$ is heated with conc. H_2SO_4 is due to:
 a) Oxidation b) Reduction c) Dehydration d) Dehydrogenation
269. The unused fat present in the body is:
 a) Converted into carbohydrates
 b) Removed as waste from the body
 c) Reconverted into animal fat and stored in different parts of the body
 d) Easily destroyed by certain enzymes present in the body
270. Which amino acid have more than one stereogenic centre?
 a) Aspartic acid b) Lysine c) Arginine d) Histidine
271. Ligase is an enzyme required for
 a) Renaturation of DNA b) Proof-reading c) Joining DNA bits d) Breaking of DNA
272. Surfactants and detergents have the same common property of.....in them.
 a) Detergency b) Surface activity c) Viscosity d) None of these
273. Vitamin B_6 is known as
 a) Pyridoxin b) Thiamine c) Tocopherol d) Riboflavin
274. Sucrose on hydrolysis gives
 a) Glucose and maltose b) Glucose and lactose c) Glucose and fructose d) Only glucose
275. Detergents are better cleansing agent than soaps because:
 a) They wash clothes better
 b) Absorb the hardness of water
 c) They are less affected by hard water
 d) They are less soapy
276. The molecular formula of a monobasic saturated fatty acid is:
 a) $\text{C}_n\text{H}_{2n}\text{O}_2$ b) $\text{C}_n\text{H}_{2n-1}\text{O}_2$ c) $\text{C}_n\text{H}_{2n+2}\text{O}_2$ d) $\text{C}_n\text{H}_{2n+1}\text{O}_3$
277. The reason for double helical structure of DNA is operation of
 a) Van der Waals' forces b) Dipole-dipole interaction
 c) Hydrogen bonding d) Electrostatic attractions
278. Beri-Beri is caused due to:
 a) Vitamin A b) Vitamin B_1 c) Vitamin C d) Vitamin D
279. Which of the following is not present in a nucleotide?
 a) Cytosine b) Guanine c) Adenine d) Tyrosine
280. At $\text{pH}=4$, glycine exists as

- a) $\text{H}_3\text{N}^+ - \text{CH}_2 - \text{COO}^-$ b) $\text{H}_3\text{N}^+ - \text{CH}_2 - \text{COOH}$ c) $\text{H}_2\text{N} - \text{CH}_2 - \text{COOH}$ d) $\text{H}_2\text{N} - \text{CH}_2 - \text{COO}^-$
281. Sodium dodecyl benzene sulphonate is used as a:
 a) Pesticide b) Soap c) Fertilizer d) Detergent
282. The reaction of glucose with red P + HI is called:
 a) Sandmeyer's reaction
 b) Reformatsky reaction
 c) Gattermann's reaction
 d) Reduction
283. Which base is present in RNA but not in DNA?
 a) Uracil b) Cytosine c) Guanine d) Thymine
284. What is not a hexose?
 a) Glucose b) Ribose c) Fructose d) Galactose
285. Which functional group participates in disulphide bond formation in proteins?
 a) Thiolacetone b) Thiol c) Thioether d) Thioester
286. Washing soap can be prepared by saponification with alkali and:
 a) Rose oil b) Paraffin oil c) Groundnut oil d) Kerosene oil
287. Deoxyribonucleic acid (DNA) consists of the following units:
 a) Peptides b) Glucosides c) Nucleotides d) Deoxyribose
288. Fatty acid is to fat as glucose is to
 a) Cellulose b) Glycogen c) Starch d) All of these
289. Which one of the following statements is true?
 a) Saponification of oil yields a diol
 b) Drying of oil involves hydrolysis
 c) Addition of antioxidant to oil minimizes rancidity
 d) Refining of oil involves hydrogenation
290. In aqueous solution, amino acids mostly exist as
 a) $\text{NH}_2 - \text{CHR} - \text{COOH}$ b) $\text{NH}_2 - \text{CHR} - \text{COO}^-$
 c) $\text{N}^+ \text{H}_3 - \text{CHR} - \text{COO}^-$ d) $\text{N}^+ \text{H}_3 - \text{CHR} - \text{COO}^-$
291. In both DNA and RNA, heterocyclic base and phosphate ester linkages are at
 a) C'_5 and C'_1 respectively of the sugar molecule
 b) C'_1 and C'_5 respectively of the sugar molecule
 c) C'_2 and C'_5 respectively of the sugar molecule
 d) C'_5 and C'_2 respectively of the sugar molecule
292. The chemical name of vitamin C is
 a) Nicotinic acid b) Folic acid c) Tartaric acid d) Ascorbic acid
293. Mutarotation doesn't occur in
 a) Sucrose b) D-glucose c) L-glucose d) None of these
294. Deficiency of vitamin B₁ causes the disease:
 a) Cheilosis b) Sterility c) Convulsions d) Beri-Beri
295. What is not true for carbohydrates?
 a) General formula is $\text{C}_n\text{H}_{2n}\text{O}_n$
 b) Glucose is the most common monomer of carbohydrates
 c) Fructose is the sweetest of all sugars
 d) Do not conjugate with lipids
296. Main constituent of plants is
 a) Cellulose b) Starch c) Fructose d) Lipids
297. Paraffin wax is not used:
 a) In making candles
 b) As a coating on paper
 c) In greases

d) As a stiffening agent in cosmetic creams

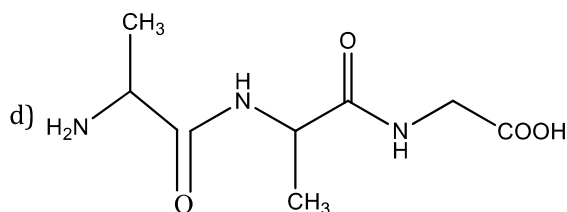
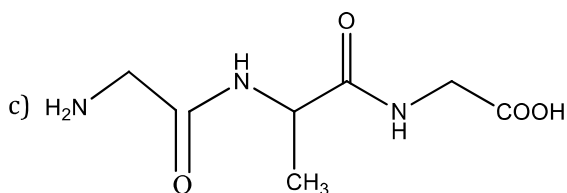
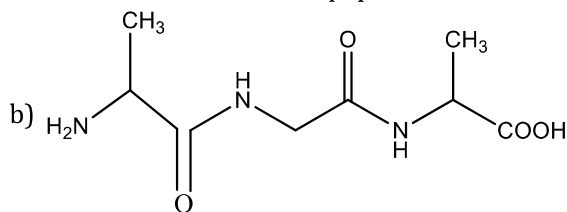
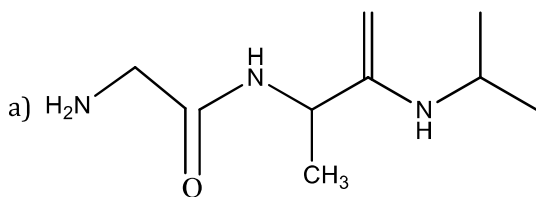
298. Pancreatic juice contains the enzyme:

- a) Zymase b) Invertase c) Diastase d) lipase

299. Reverse transcription was discovered by

- a) Watson and Crick b) Khorana c) Temin and Baltimore d) Beadle and Tatum

300. A tripeptide is written as glycine-alanine-glycine. The correct structure of the tripeptide is



301. Glucose and fructose differ in:

- a) Taste
b) Action of heat
c) Action of Tollens' reagent
d) Direction of optical rotation

302. Digestion of fat in intestine is aided by:

- a) Diffusion b) Protection c) Peptization d) Emulsification

303. Tributyrin is a fat present in butter. It is formed by combination of butyric acid with:

- a) Glycerol b) Oleic acid c) Stearic acid d) Chloroform

304. The nucleic acid base having two possible binding sites is

- a) Thymine b) Cytocine c) Guanine d) Adenine

305. An achiral amino acid

- a) Alanine b) Valine c) Leucine d) Glycine

306. Insulin regulates the metabolism of

- a) Minerals b) Amino acids c) Glucose d) Vitamins

307. In glycine, the basic group is

- a) $-\text{COO}^-$ b) $-\text{COOH}$ c) $-\text{NH}_2$ d) $-\text{NH}_3^+$

308. Rice has deficiency of the essential amino acid:

- a) Alanine b) Glycine c) Lysine d) Leucine

309. Mammal's fats are hydrolysed to relase fatty acids by

- a) Amylase b) Lactase c) Lipase d) Insulin

310. Which of the following has an imino ($>\text{NH}$) group instead of amino group ($-\text{NH}_2$)?

- a) Proline b) Isosleucine c) Tryptophan d) Serine

311. Molecular weight of a protein is:

- a) 10,000 b) 1,000-10,000 c) 100-1,000 d) $>10,000$

312. Fehling's solution and benedict's solution are reduced by glucose to form:

- a) CuO b) Cu_2O c) $\text{Cu}(\text{OH})_2$ d) Cu

313. The product formed in the reaction of glycine with benzoyl chloride +aq. NaOH is

- a) $\text{PhCOCH}_2\text{NH}_2$ b) PhCH_2NH_2 c) PhCONHCH_3 d) $\text{PhCONHCH}_2\text{CO}_2\text{H}$

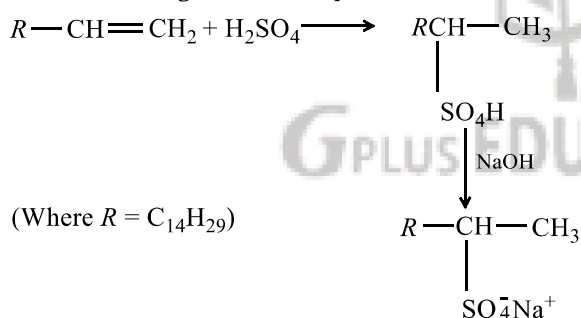
314. Proteins when heated with conc. HNO_3 give a yellow colour. This is

- a) Hoppe's test b) Acid-base test c) Biuret's test d) Xanthoprotic test

315. Detergents are usually made from products obtained by cracking of petroleum like:

- a) Chloroalkanes
 b) Sulphur compounds of benzene
 c) H₂S
 d) Polyethylene derivatives
316. Night-blindness may be caused by the deficiency of vitamin
 a) A b) B c) C d) D
317. Which of the following sugars is present in genetic factor DNA molecule?
 a) Glucose b) Maltose c) Ribose d) Deoxyribose
318. Point out the wrong statement about proteins.
 a) They are nitrogenous organic compounds of high molecular mass
 b) They on hydrolysis by enzymes give amino acids
 c) Many of them are enzymes
 d) They do not contain polypeptide linkages
319. Gums are:
 a) Polysaccharides of more than one type of monosaccharides
 b) Used as thickening agent
 c) Used for improvement of texture in food industry
 d) All of the above
320. Which of the following are all disaccharides?
 a) Maltose, sucrose, lactose
 b) Maltose, lactose, glucose
 c) Glycogen, lactose, sucrose
 d) Starch, maltose, lactose

321. In the following reaction sequence,



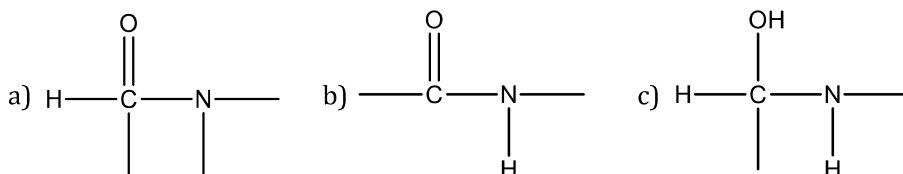
The end product would be useful as:

- a) A soap b) A fertilizer c) An explosive d) A detergent
322. Carbohydrates are:
 a) Hydrates of carbon
 b) Polyhydroxy aldehydes or ketones
 c) Polyhydroxy acids
 d) None of the above
323. A metal present in vitamin B₁₂ is
 a) Aluminium b) Zinc c) Iron d) Cobalt
324. The general formula of carbohydrate is:
 a) C_nH_{2n+1}O
 b) C_nH_{2n}O
 c) C_n(H₂O)_n or C_x(H₂O)_y
 d) C_n(H₂O)_{2n}
325. Soap molecule has two parts, a polar part and a non-polar part. When soap is added to water:
 a) Both parts dissolve in water
 b) Non-polar part dissolves in water

- c) Polar part dissolves in water
d) Both parts remain undissolved in water and form a hydrocarbon layer
326. Proteins are polymers of amino acids. Which of the following is not a protein?
a) Wool b) Nails c) Hair d) DNA
327. Metallic soaps are:
a) Salts of fatty acids with other metals except Na, K
b) Not used for cleaning purposes
c) Used as lubricant, driers, adhesives, etc
d) Possess all these
328. Glucose and fructose are readily distinguished by using:
a) Molisch test b) Salivanoff test c) Tollens' reagent d) None of these
329. With one of the pollutant gases in air haemoglobin of blood undergoes irreversible chemical combination thus, causing death. The gas is:
a) Carbon monoxide b) Carbon dioxide c) Sulphur dioxide d) Ozone
330. Milk sugar is (a disaccharide) :
a) Sucrose b) Lactose c) Fructose d) Glucose
331. The carbohydrates are important constituent of our diet; they function as:
a) Biofuels to provide energy
b) Shock absorbing pad
c) Heat insulator
d) None of the above
332. The number of amino acids in insulin is
a) 21 b) 574 c) 51 d) 5733
333. Candles contain a mixture of:
a) Bees wax and paraffin wax
b) Bees wax and stearic acid
c) Paraffin wax and stearic acid
d) Higher fatty acids
334. The prosthetic group haemoglobin is
a) Porphin b) Globulin c) Haem d) Gelatin
335. To become a carbohydrate, a compound must contain atleast:
a) 6 carbons b) 3 carbons c) 4 carbons d) 2 carbons
336. Amino acids have peptide linkage which is
a) —CO—NH— b) —C—NH_2 c) SO—NH— d) —CO—N—
337. Hydrogenation of oils involves:
a) Saturation of unsaturated fatty acids
b) Reaction with oxygen
c) Conversion into fatty acids
d) Driving of the impurities in oil by hydrogen gas
338. Which of the following hexoses will form the same osazone when treated with excess phenyl hydrazine?
a) D-glucose , D-fructose and D-galactose b) D-glucose , D-fructose and D-mannose
c) D-glucose , D-mannose and D-galactose d) D-fructose, D-mannose and D-galactose
339. Energy is stored in our body in the form of
a) ATP b) ADP c) Fats d) Carbohydrates
340. Which of the following contains the highest percentage of protein?
a) Groundnut b) Cow's milk c) Egg d) Wheat
341. Lipids are:
a) Long chain fatty acid esters
b) Long chain sulphonic acid esters
c) Polymeric hydrocarbons

- d) Polymeric aldehydes
342. The colorific values of fats, carbohydrates and proteins vary in the order:
- Fats > carbohydrates > proteins
 - Fats > proteins > carbohydrates
 - Carbohydrates > proteins > fats
 - Proteins > carbohydrates > fats
343. Nucleotides and nucleosides mainly differ from each other in:
- Presence of phosphate units
 - Presence of base units
 - Presence of nucleic acids
 - None of the above
344. Which of the following is an ester?
- Coconut oil
 - Kerosene
 - Soap
 - Glycerine
345. Which of the following statements about enzymes is incorrect?
- The catalytic action of an enzyme is not specific
 - An enzymatic reaction is highly sensitive to temperature
 - The catalytic action of enzymes is due to their capacity to lower the energy of activation of a particular reaction
 - None of the above
346. Which of the following is not an α -amino acid?
- Cysteine
 - Proline
 - Trypsin
 - Serine
347. Which of the following is true?
- Nucleoside + phosphoester bond = nucleotide
 - DNA's are nucleotide and RNA's are nucleoside
 - Nucleotide + phosphoester bond = nucleoside
 - None of the above
348. The anti-sterility or anti-reproductory vitamin is:
- B
 - C
 - D
 - E
349. Which statement about fats and oils is correct?
- They may be edible as well as inedible
 - Vegetable oils are different than essential oils
 - Soyabean oil, corn oil, olive oil, etc., are edible oils
 - All of the above
350. The hormone used as an oral contraceptive is:
- Aldosterone
 - Cortisone
 - Progesterone
 - Testosterone
351. If α -D-glucopyranose is reacted with acetic anhydride at 373 K, the major products is the β - isomer of the pentaacetate. It is attributed to
- Isomerisation of α -D into β -D-glucose at 373 K
 - Opening of glucopyranose ring
 - Both the statements are correct
 - None of the statement is correct
352. A decapeptide (mol. wt. 796) on complete hydrolysis gives glycine (mol. wt. 75), alanine and phenylalanine. Glycine contributes 47% to the total weight of the hydrolysed products. The number of glycine units present in the decapeptide is
- 3
 - 4
 - 5
 - 6
353. Vegetable oils are:
- Essential oils obtained from plants
 - Unsaturated acids
 - Glycerides of saturated fatty acids
 - Glycerides of unsaturated fatty acids
354. Which of the following compounds is found abundantly in nature?
- Fructose
 - Starch
 - Glucose
 - Cellulose
355. Which one is the correct representation of peptide bond?

d) None of these



356. The proteins are hydrolysed with acids, alkalies or enzymes finally to:

- a) Amino acids b) Ethers c) Esters d) Cycloparaffins

357. Which of the following is protein?

- a) Terry cotton b) Natural silk c) Nylon d) Rayon

358. Which of the following indicates open chain structure of glucose?

- a) Pentaacetyl derivative of glucose b) Cyanohydrins formation with HCN
c) Reaction with Fehling solution d) Reaction with Tollen's reagent

359. A distinctive and characteristics functional group of fats is

- a) A peptide group b) An ester group c) An alcoholic group d) A ketonic group

360. In an amino acid, the carboxyl group ionizes at $pK_{a_1} = 2.34$ and ammonium ion at $pK_{a_2} = 9.6$. The isoelectric point of the amino acid is at pH

- a) 5.97 b) 2.34 c) 9.60 d) 6.97

361. The primary structure of protein is based upon the

- a) Hydrogen bonding b) Van der Waals' attraction
c) Ionic bonding d) Covalent bonding

362. A good example of an unsaturated acid got by the hydrolysis of an oil is:

- a) Palmitic acid b) Stearic acid c) Oleic acid d) Lauric acid

363. The epimer of glucose is:

- a) Galactose b) Fructose c) Mannose d) Arabinose

364. Enzymes, in the living systems

- a) Provide energy b) Provide immunity
c) Transport oxygen d) Catalyse biochemical processes

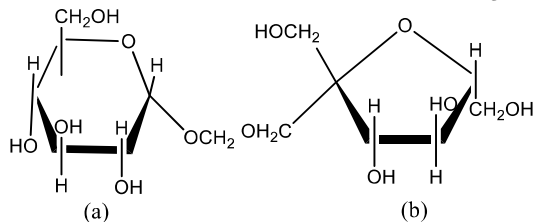
365. Antibodies are:

- a) Carbohydrates b) proteins c) phospholipids d) lipids

366. Point out the correct statement about proteins?

- a) They are nitrogenous organic compounds of high molecular weights
b) They on hydrolysis by enzyme give amino acids
c) Many of them are enzymes
d) All of the above

367. The correct statement about the following disaccharide is



- a) Ring (a) is pyranose with α -glycosidic link b) Ring (a) is furanose with α -glycosidic link
c) Ring (b) is furanose with α -glycosidic link d) Ring (b) is pyranose with α -glycosidic link

368. There are 20 naturally occurring amino acids. The maximum number of tripeptides that can be obtained is

- a) 8000 b) 6470 c) 7465 d) 5360

369. Number of chiral carbon atoms in β -D-(+)- glucose is

- a) Five b) Six c) Three d) Four

370. Glucose on oxidation gives the acid containing the C-chiral atoms equal to

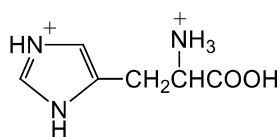
- a) 2 b) 3 c) 4 d) 5

371. The synthesis of carbohydrates in plants is mainly due to:

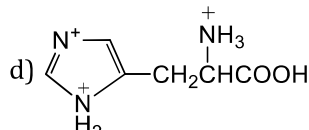
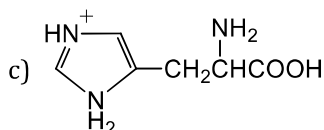
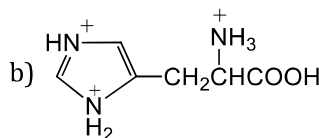
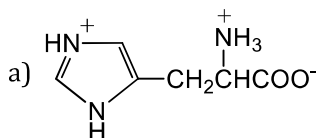
- a) Double decomposition
 b) Photosynthesis
 c) Hydrolysis of ingredients taken from soil
 d) Nitrifying bacteria
372. The correct statement in respect of protein haemoglobin is that it
 a) Functions as a catalyst for biological reactions
 b) Maintains blood sugar level
 c) Act as an oxygen carrier in the blood
 d) Forms antibodies and offers resistance to diseases
373. From the following statements
 (A) Albumin is a simple protein
 (B) Amino acid alanine contains an acidic side chain
 (C) Insulin is a hormone
 (D) Muscles contain the protein keratin
 Choose the wrong statements
 a) A, B b) C, D c) A, C d) B, D
374. The reagent used in Ruff degradation is:
 a) Baeyer's reagent b) Tollens' reagent c) Fenton's reagent d) Benedict's reagent
375. Glucose when treated with CH_3OH in presence of dry HCl gas, gives α - and β -methylglucosides because it contains
 a) An aldehydic group b) a $-\text{CH}_2\text{OH}$ group c) A ring structure d) Five $-\text{OH}$ group
376. Iodine value related to
 a) Fats and oils b) Alcohols c) Esters d) Hydrocarbons
377. Complete hydrolysis of cellulose gives
 a) D-fructose b) D-ribose c) D-glucose d) L-glucose
378. Dihydroxy acetone ($\text{CH}_2\text{OH} \cdot \text{CO} \cdot \text{CH}_2\text{OH}$) has the general formula of carbohydrate but not included in this class because:
 a) It does not contain polyhydroxy gp.
 b) It does not contain aldehyde gp.
 c) It is not optically active
 d) All of the above
379. Fats contain higher percentage of :
 a) Unsaturated fatty acids
 b) Saturated fatty acids
 c) Free fatty acids
 d) Glycerol
380. All monosaccharides Tollen's reagent.
 a) Oxidises
 b) Condense with
 c) Reduces
 d) Add to
381. Which one of the following is a conjugated protein?
 a) Phosphoprotein
 b) Glycoprotein
 c) Chromoprotein
 d) All of these
382. Glucose reacts with methyl alcohol to give:
 a) α -methyl glucoside b) β -methyl glucoside c) Both (a) and (b) d) None of these
383. Proteins give a white precipitate with Million's reagent, which is:
 a) Mercurous and mercuric nitrate in HNO_3

- b) Mercurous and mercuric chloride in HCl
 c) Mercurous and mercuric chloride in HNO_3
 d) None of the above
384. In fermentation by zymase, alcohol and CO_2 , are obtained from:
 a) Glucose b) Invert sugar c) Fructose d) All of these
385. A certain compound gives negative test with ninhydrin and positive test with Benedict's solution. The compound is
 a) A protein b) A monosaccharide c) A lipid d) An amino acid
386. The function of fat in the body is to act:
 a) As reserve food
 b) As thermal insulator and to protect the body from loss of heat
 c) To absorb and carrying vitamin A and D in the body
 d) All of the above
387. The hormone which maintains blood sugar level is:
 a) Oxytocin b) Haemoglobin c) Insulin d) ptylin
388. Which one of the following is not a protein?
 a) Wool b) Nail c) Hair d) DNA
389. Osazone formation involves only 2 carbon atoms of glucose because of:
 a) Chelation b) Oxidation c) Reduction d) Hydrolysis
390. Protein which acts as hormone is:
 a) Casein b) Oxytocin c) Trypsin d) Keratin
391. The only vitamin with metal atom in it
 a) Vitamin A b) Vitamin K c) Vitamin B_{12} d) Vitamin E
392. If two moles of glucose are oxidized in the body through respiration, the number of moles of ATP produced are
 a) 19 b) 38 c) 57 d) 76
393. Which is not a poison for enzymes?
 a) CN^- b) Fe^{3+} c) Pb^{2+} d) AsO_4^{3-}
394. Which of the following is the sweetest sugar?
 a) Glucose b) Fructose c) Lactose d) Sucrose
395. Kwashiorkor is caused by the deficiency of:
 a) Vitamins b) hormones c) Amino acids d) Essential amino acids
396. The main role of oils and fats as constituents in our food is to:
 a) Act as stored source of energy
 b) To meet immediate energy needs of the body
 c) To catalyse biochemical process
 d) Form the structural material of tissues
397. Acrolein test is positive for
 a) Polysaccharides b) Proteins c) Oils and fats d) Reducing sugars
398. An electric current is passed through an aqueous solution of a mixture of alanine (isoelectric point 6.0) glutamic acid (3.2) and arginine (10.7) buffered at pH6. What is the fate of the three acids?
 a) Glutamic acid migrates of anode at pH6. Arginine present as a cation and migrates to the cathode.
 Alanine in a dipolar ion remains uniformly distributed in solution.
 b) Glutamic acid migrates to cathode and others remain uniformly distributed in solution.
 c) All three remain uniformly distributed in solution.
 d) All three move to cathode.
399. The non-proteinous substances which certain enzymes require for their activity are called:
 a) Catalysts b) Inhibitors c) Co-enzymes d) Epimers
400. Soaps do not form froths easily from hard water because:
 a) Of formation of insoluble salts

- b) Of formation of complex salts
 c) Of lower solubility of soaps in hard water
 d) None of the above
401. Human digestive system does not hydrolyse:
 a) Starch b) Maltose c) Glycogen d) Cellulose
402. Soft soaps are:
 a) Sodium salts of fatty acids
 b) Potassium salts of fatty acids containing excess of free alkali
 c) Potassium salts of fatty acids containing no free alkali
 d) Calcium salts of fatty acids
403. A protein that controls the metabolism of glucose is:
 a) Oxytocin b) Insulin c) Haemoglobin d) keratin
404. Biological catalyst (enzymes) belong to:
 a) Polysaccharides
 b) Synthetic polymers
 c) Polypeptides
 d) Poly nitrogen heterocycles
405. Fibrous proteins are present in:
 a) Wool b) Silk c) Nails d) All of these
406. Which one of the following is an amine hormone?
 a) Oxypurin
 b) Insulin
 c) Progesterone
 d) Thyroxine
407. Gene is a segment of
 a) DNA b) Protein c) *m*-RNA d) *t*-RNA
408. When glucose is heated with nitric acid, the product is:
 a) Gluconic acid b) Glucaric acid c) Glycolic acid d) Oxalic acid
409. Pick out the unsaturated fatty acid from the following
 a) Stearic acid b) Lauric acid c) Oleic acid d) Palmitic acid
410. An organic compound answers Molisch's test as well as Benedict's test. But it doesn't answer Sclivanoff's test. Most probably, it is
 a) Sucrose b) Protein c) Fructose d) Maltose
411. Rice is deficient in
 a) Lysine b) Alanine c) Glycine d) Leucine
412. *Escherichia coli* with completely radioactive DNA was allowed to replicate in non-radioactive medium for two generations. Percentage of bacteria with radioactive DNA is
 a) 100% b) 12.55% c) 50% d) 25%
413. Which one of the following does not exhibit the phenomenon of mutarotation?
 a) (+) Sucrose b) (+) Lactose c) (+) Maltose d) (-) Fructose
414. Redness of blood is because of the presence of:
 a) Iron in haeme pigment
 b) Haemoglobin
 c) Copper in haeme pigment
 d) All of the above
415. Which of the following is not a pyrimidine base?
 a) Thymine b) Guanine c) Cytosine d) Uracil
416. Histidine, a heterocyclic amino acid has following structure at pH < 1.82



At pH > 1.82, it should have which structure?



417. Fats are ester of
 a) Sugar b) Glycerol c) Tributyrine d) Polypeptide
418. Amylose is a polymer of :
 a) α -D glucopyranose b) Fructose c) β -fructose d) β -D fructose
419. Which one of the following vitamin deficiency causes rickets?
 a) Vitamin A b) Vitamin B c) Vitamin C d) Vitamin D
420. Hydrolysis of sucrose with dilute aqueous sulphuric acid yields
 a) 1 : 1D-(+)-glucose; D-(-)-fructose b) 1 : 2D-(+)-glucose; D-(-)-fructose
 c) 1 : 1D-(-)-glucose; D-(+)-fructose d) 1 : 2D-(-)-glucose ; D-(+)-fructose
421. Which is fat soluble vitamin?
 a) Vitamin A b) Pyridoxin c) Riboflavin d) Thiamine
422. Denaturation of proteins 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 structures d) Loss of both secondary and tertiary structures
423. The simple prokaryotic cells evolved when life began on earth. Which of the following nutrients used for evolving more complex eukaryotes cells?
 a) CO₂ b) N₂ c) CO₂ and N₂ d) O₂
424. An aldose is converted into its next higher homologue by:
 a) Ruff 's method
 b) Amadori rearrangement
 c) Kiliani's synthesis
 d) None of the above
425. When fat is heated with NaOH the substances formed are:
 a) Oil and Na₂CO₃
 b) Soap and glycerol
 c) Soap and oil
 d) Soapless detergent and water
426. Paraffin waxes are:
 a) Higher alkanes b) Higher alkenes c) Higher alkynes d) None of these
427. The enzymes which have control site in addition to active site are called
 a) Holozymes b) Coenzymes c) Apoenzymes d) Allosteric enzymes
428. The intermediate compound in the conversion of starch to glucose is:
 a) Lactose b) Maltose c) Fructose d) Sucrose
429. Lactose gives on hydrolysis
 a) Glucose b) Glucose and galactose c) Fructose d) Glucose and fructose
430. When glucose reacts with bromine water the main product is
 a) Acetic acid b) Saccharic acid c) Glyceraldehydes d) Gluconic acid

431. The vitamin that is most readily manufactured in our bodies is:
 a) Vitamin A b) Vitamin B c) Vitamin C d) Vitamin D
432. Maximum amount of RNA is found in
 a) Nucleolus b) Chloroplast c) Ribosomes d) Cytoplasm
433. The function(s) of DNA is/are:
 a) Protein synthesis
 b) Self replication
 c) Store of hereditary information
 d) All of the above
434. Drying oils are used:
 a) In the manufacture of paints
 b) In the manufacture of varnishes
 c) In the manufacture of linoleum products
 d) All of the above
435. An example of disaccharide made up of two units of the same monosaccharides is:
 a) maltose b) Maltose c) Sucrose d) Lactose
436. Glucose molecules reacts with X number of molecules of phenylhydrazine to yield osazone. The value of X is
 a) Three b) Two c) One d) Four
437. A solution of D-glucose in water rotates the plane polarised light:
 a) To the right b) To the left c) To either side d) None of these
438. Which is not an unsaturated acid?
 a) Oleic acid b) Linoleic acid c) Linolenic acid d) Myristic acid
439.
$$\begin{array}{c} \text{COOH} \\ | \\ \text{H}_2\text{N}-\text{C}-\text{H} \\ | \\ \text{R} \end{array}$$
 is acylated using Ac_2O
 a) Its configuration is retained b) Its configuration is inverted
 c) It becomes unstable d) No reaction takes place
440. Increased blood pressure may be caused by excess secretion of:
 a) Thyroxin b) Testosterone c) Estradiol d) Adrenaline
441. Essential oils are:
 a) Mixture of various hydrocarbons
 b) Pleasant smelling liquids occurring in plants
 c) Mixture of higher fatty acids
 d) None of the above
442. Insulin, a protein acts as:
 a) An antibody b) A hormone c) An enzyme d) A transport agent
443. The change in optical rotation with time of freshly prepared solution of reducing sugar is known as
 a) Inversion b) Specific rotation c) Rotatory motion d) Mutarotation
444. The number of atoms in the ring structure of pyranoses are:
 Carbon Oxygen
 a) 5 1 b) 4 2 c) 4 1 d) 3 2
445. Which of the following compounds, when heated at 483 K turns to caramel?
 a) Glucose b) Sucrose c) Fructose d) Lactose
446. If one strand of DNA has the sequence ATCGTATG, the sequence in the complementary strand would be
 a) TAGCTTAC b) TCACATAC c) TAGCATAC d) TACGATAC
447. The detergency of a substance can be increased by addition of :
 a) Another detergent
 b) Builders like sodium tripoly phosphate
 c) Presence of other additive

- d) All of the above
448. Purity of butter is determined in terms of:
 a) Saponification value b) Iodine value c) Acetyl value d) Reichert-Meissl value
449. Which of the following is protein hormones?
 a) Insulin b) Oxytocin c) Both (a) and (b) d) None of these
450. Which amino acid has pyhenyl —OH group?
 a) Lysine b) Arginine c) Proline d) Tyrosine
451. Hydrolytic reaction of fats with caustic soda is known as:
 a) Esterification b) Saponification c) Acetylation d) Carboxylation
452. The enzyme that is used to dissolve blood clot is
 a) Trypsin b) Renin c) Streptokinase d) Tyrosinase
453. Secondary structure of proteins refers to:
 a) Mainly denaturated proteins and structure of prosthetic group
 b) Three dimensional structure specially the bond between amino acid residues that are distant from each other in polypeptide chain
 c) Linear sequence of amino acid residue in the polypeptide chain
 d) Regular folding patterns of continuous portion of the polypeptide chain
454. Hard soaps are:
 a) Sodium salts of higher fatty acids
 b) Potassium salts of higher fatty acids
 c) Calcium salts of higher fatty acids
 d) Magnesium salts of higher fatty acids
455. Which of the following body parts is not composed of structural proteins?
 a) Muscle b) Nails c) Bones d) Skin and bone matrix
456. In an alkaline medium, Glycine predominantly exists as/in a/an
 a) Cation b) Anion c) Zwitter ion d) Covalent form
457. An antigen develops antibodies which protect the body from their harmful effects. The antibodies are:
 a) Immunoglobulins b) Phospholipids c) Albumins d) Lymphocytes
458. The process of respiration in absence of oxygen is called:
 a) Metabolic b) Aerobic c) Anaerobic d) Glycolysis
459. Globular proteins are present in:
 a) Blood b) Eggs c) Milk d) All of these
460. Polypeptides having, molecular weights, above 10000 are known as
 a) Amino acids b) Hormones c) Proteins d) Terminal amino acids
461. At intermediate pH values of about 6.0, an amino acid behaves as a dipolar ion or Zwitter ion. On decreasing and increasing the pH values, the amino acid becomes
 a) Basic and acidic respectively
 b) Acidic and basic respectively
 c) Remains in the state of a neutral molecule
 d) Loses its optical activity with the exception of glycine
462. Fructose reduces Tollens' reagent due to:
 a) Asymmetric carbons
 b) Primary alcoholic group
 c) Secondary alcoholic group
 d) Enolisation of fructose followed by conversion to aldehyde by base
463. Glucose on reduction with Na/Hg and water gives:
 a) Sorbitol b) Fructose c) Saccharic acid d) Gluconic acid
464. The hormone insulin is a secretion of the organ:
 a) Ovary b) Testes c) Adrenal cortex d) Pancreas
465. Vitamin C is:

- a) Alcohol b) Amide c) Amine d) Lactose
466. In an electric field, if an amino acid migrates towards cathode, the pH of the solution is said to be
a) Less than pI b) More than pI
c) Equal to pI d) 7
467. When sucrose is heated with concentrated nitric acid the product is:
a) Saccharic acid b) Oxalic acid c) Formic acid d) Invert sugar
468. Which enzyme convert glucose into alcohol?
a) Invertase b) Zymase c) Maltase d) Diastase
469. Waxes are along chain compounds belonging to the class of:
a) Acids b) Alcohols c) Esters d) Ethers
470. Proteins give:
a) A violet colour with alkaline CuSO_4 solution
b) Form a purple colour on boiling with dilute ninhydrin solution
c) Yellow colour on boiling with HNO_3
d) All of the above
471. Which compounds is obtained, when glucose reacts with excess $\text{C}_6\text{H}_5\text{—NH} \cdot \text{NH}_2$?
a) Glucosazone b) Gluconic acid
c) Glucose phenyl hydrazone d) Saccharic acid
472. Carbohydrates are used by body mainly
a) For obtaining vitamins b) As source of energy
c) For all its developmental needs d) For building muscles
473. The enzyme carbonic anhydrase catalyses the change:
a) Carbonic acid to H_2O and CO_2
b) Lactose to glucose and galactose
c) Maltose to glucose
d) None of the above
474. Which of the following pairs give positive Tollen's test?
a) Glucose, sucrose b) Glucose, fructose
c) Hexanal, acetophenone d) Fructose, sucrose
475. The end product of protein digestion is:
a) Amino acid b) Glucose c) Glycerol d) Oxalic acid
476. Glucose is a/an
a) Polyhydroxy ketone b) Alcohol
c) Hydrate of carbon d) Pentahydroxy aldehyde
477. Experimental material in the study of DNA replication has been
a) *Escherichia coli* b) *Drosophila melanogasc* c) *Pneumococcus* d) *Neurospora crassa*
478. Enzymes are made up of
a) Edible proteins b) Proteins with specific structure
c) Nitrogen containing carbohydrates d) Carbohydrates
479. Which are called biomolecules?
a) Carbohydrate b) Protein c) Lipids d) All of these
480. The metal present in vitamin B_{12} is
a) Iron b) Manganese c) Cobalt d) Mercury
481. When adenine is attached to ribose sugar, it is called adenosine. To make a nucleotide from it, it would require
a) Oxygenation b) Addition of a base
c) Addition of phosphate d) Hydrogenation
482. Complete hydrolysis of cellulose gives
a) D-fructose b) D-ribose c) D-glucose d) L-glucose
483. Drying oils are so called because they:

- a) Are volatile and so evaporate rapidly
- b) Are hygroscopic and so absorb moisture from the surroundings
- c) Are easily hydrolysed by atmospheric moisture to give solid products
- d) Are highly unsaturated and so undergo atmospheric oxidation to yield resinous residue and becomes hard solid

484. Cellulose is a:

- a) Monosaccharide
- b) Disaccharide
- c) Polysaccharide
- d) None of these

485. An essential constituent of plant is:

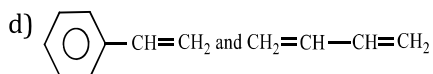
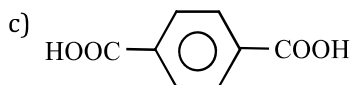
- a) Cellulose
- b) Glucose
- c) Sugar
- d) Raffinose

486. Maltose is made up of:

- a) α -D glucose
- b) α and β -D glucose
- c) Glucose and fructose
- d) Fructose only

487. Which one of the following sets forms the biodegradable polymer?

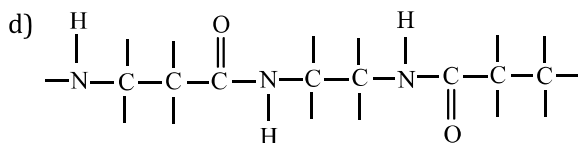
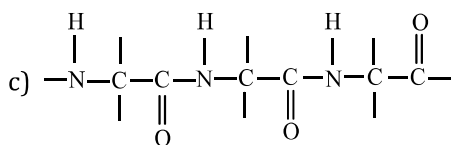
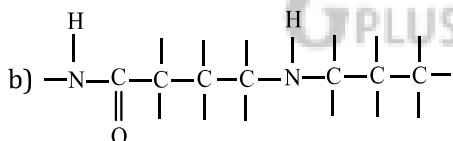
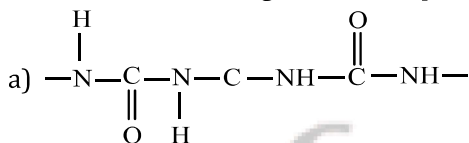
- a) $\text{CH}_2=\text{CH}-\text{CN}$ and $\text{CH}_2=\text{CH}-\text{CH}=\text{CH}_2$
- b) $\text{H}_2\text{N}-\text{CH}_2-\text{COOH}$ and $\text{H}_2\text{N}-(\text{CH}_2)_5-\text{COOH}$
- HO-CH₂-CH₂-OH and



488. The chemical name of vitamin B₁ is

- a) Ascorbic acid
- b) Riboflavin
- c) Pyridoxine
- d) Thiamine

489. Which of the following structure represents the peptide chain?



490. Pyranose structure of glucose is:

- a) Hexagonal
- b) Pentagonal
- c) Linear
- d) Tetrahedral

491. Oils and fats in our food not only provide us energy but also act as carriers of certain vitamins such as:

- a) A and B
- b) A and C
- c) B and C
- d) A and D

492. The aqueous solution of which vitamin is dark pink in colour:

- a) B₁
- b) B₂
- c) B₆
- d) B₁₂

493. Glucose gives the silver mirror test with ammoniacal solution of silver nitrate because it contains:

- a) Aldehydes gp.
- b) Ester gp.
- c) Ketone gp.
- d) Amide gp.

494. Which of the following statements is not true?

- a) Fats and oils are stored source of energy
- b) They provide more energy than proteins or carbohydrates

- c) They help in absorbing the vitamins A and D
d) Fats are soluble in water
495. Direct conversion of starch into glucose may be carried out by:
a) Fermentation with diastase
b) Fermentation with zymase
c) Heating it with dil. HCl
d) Fermentation with maltase
496. In alkaline medium, alanine exists predominantly as
a) Anion b) Zwitter ion c) Cation d) Covalent form
497. Double stranded DNA virus with 20,000 base pairs has nucleotides
a) 20,000 b) 10,000 c) 666 d) 40,000
498. A diabetic person carries a packet of glucose with him always because
a) Glucose reduces the blood sugar level slowly
b) Glucose increases the blood sugar level slowly
c) Glucose reduces the blood sugar level
d) Glucose increases the blood sugar level almost-instantaneously.
499. Ascorbic acid is:
a) Vitamin C b) Enzyme c) Protein d) Lipid
500. Which one is the complimentary base in RNA strand to the adenine base in DNA during protein synthesis?
a) Adenine b) Guanine c) Uracil d) Cytosine
501. The purine base present in RNA is
a) Guanine b) Thymine c) Cytosine d) Uracil
502. Which of the following is proteolytic enzyme?
a) Insulin b) Diastase c) Pepsin d) Adenine
503. The polymer formed with more than two monosaccharides units is known as:
a) Disaccharide b) Polysaccharide c) Both (a) and (B) d) None of these
504. Which lipid is not obtained by the hydrolysis of simple lipid and compound lipid from the following?
a) Cholesterol b) Neutral fats c) Carotenoid d) Terpenes
505. A soap can be obtained by the saponification of:
a) Liquid paraffin b) Coconut oil c) Lemongrass oil d) Sandal wood
506. Ribose is an example of
a) Ketohexose b) disaccharide c) Pentose d) Polysaccharide
507. Which of the following reagent used to identify fructose?
a) Neutral FeCl_3 b) CHCl_3 / alc KOH c) Ammoniacal AgNO_3 d) Iodine
508. Which of the following set consists only of essential amino acids?
a) Alanine, tyrosine, cysteine b) Leucine, lysine, tryptophane
c) Alanine, glutamine, lycine d) Leucine, proline, glycine
509. Which of the following is present in animals like cow, buffaloes etc. to digest compound like paper, cloth etc.?
a) Urease b) Cellulose c) Silicones d) Sucrose
510. Enzyme trypsin converts:
a) Amino acids into proteins
b) Glucose into glycogens
c) Starch into sugar
d) Proteins into amino acids
511. Many of the carbohydrates are sweet in taste because:
a) They give sugars on hydrolysis
b) Of covalent bonding
c) Of electrovalent bonding
d) Of coordinate bonding

512. The highest calorific value is found in
 a) Proteins b) Fats c) Vitamins d) Carbohydrates
513. Successive nucleotides are covalently linked through
 a) Hydrogen bonds b) Phosphodiester bonds
 c) Sulphide bonds d) Any type of bonds
514. Which differs from the rest?
 a) Glucose b) Maltose c) Sucrose d) Lactose
515. Milk changes after digestion into
 a) Cellulose b) Fructose c) Glucose d) Lactose
516. Which of the following monosaccharide is pentose?
 a) Glucose b) Fructose c) Arabinose d) Galactose
517. 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)
518. Which of the following is involved in formation of heme?
 a) Lysine b) Glycine c) Tyrosin d) Arginine
519. Cellulose trinitrate is used in preparation of:
 a) Food b) Explosives c) Rayon d) None of these
520. Sucrose molecule is made up of
 a) A gluco pyranose and a fructo pyranose b) A gluco pyranose and a fructo furanose
 c) A gluco furanose and a fructo pyranose d) A gluco furanose and a fructo furanose
521. Wax used in gramophone records is :
 a) Paraffin wax b) Bees wax c) Carnauba wax d) None of these
522. If one strand of DNA has the sequences T A T G A C T G , the sequence in the complimentary strand would be
 a) A T A C A C T C b) A C G T T G A C c) A T A C T G A C d) A T A C T G C A
523. Which of the following compounds is not of the lipid series?
 a) Fat b) Soap c) Oil d) Lard
524. Peptides are formed from
 a) Aliphatic amines b) Carbohydrates c) α –amino acids d) Aromatic amines
525. Which of the following biomolecules acts as specific catalysts in biological reaction?
 a) Carbohydrates b) Lipids c) Vitamins d) Enzymes
526. Wax is
 a) Alcohol b) Ester c) Ketone d) Acid
527. Amylopectin is a polymer of
 a) α -D glucose b) α -D fructose c) Lactose d) Amylose
528. After digestion, starch is converted into:
 a) Glucose b) Fructose c) Lactose d) sucrose
529. Which one of the following is a peptide hormone?
 a) Thyroxine b) Adrenaline c) Glucogen d) Testosterone
530. Which one of the following hormones contains iodine?
 a) Adrenalin b) Testosterone c) Thyroxine d) Insulin
531. α -D(+)- glucose and β –D-(+) – glucose are
 a) Conformers b) Epimers c) Anomers d) Enantiomers
532. The process of formation of RNA from DNA is known as:
 a) Translation b) Transcription c) Replication d) Mutation
533. α -glucose and β -glucose are:
 a) Isomers b) Anomers c) Epimers d) Tautomers
534. One gram of fat gives:
 a) Same amount of energy as one gram of carbohydrate

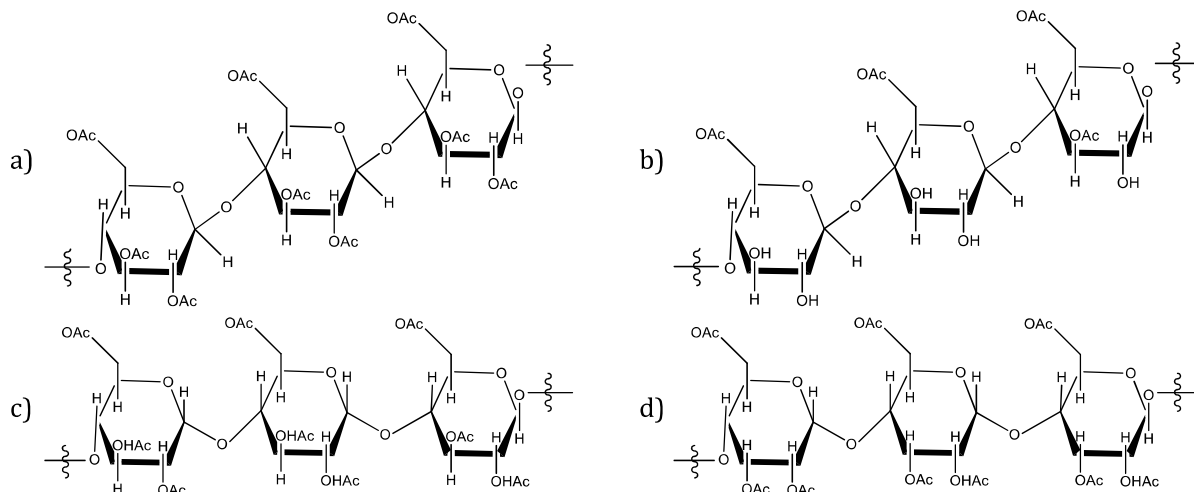
- b) Same amount of energy as one gram of protein
 c) More than twice the energy as one gram of carbohydrate or protein
 d) None of the above
535. Insulin production and its action in human body are responsible for the level of diabetes. This compound belongs to which of the following categories?
 a) A co-enzyme b) A hormone c) An enzyme d) An antibiotic
536. Cellulose is a polymer of
 a) Glucose b) Fructose c) Ribose d) Sucrose
537. Common table sugar is more formally described as:
 a) Glucose b) Lactose c) Maltose d) Sucrose
538. Glucose is used in:
 a) Manufacture of vitamin C
 b) As preservative
 c) In the manufacture of alcohol
 d) All of the above
539. Methyl α -D-glucoside and methyl- β -D-glucoside are
 a) Epimers b) Anomers
 c) Enantiomers d) Conformational diastereomers
540. Ring structure of glucose is due to formation of hemiacetal and ring formation between:
 a) C₁ and C₅ b) C₁ and C₄ c) C₁ and C₃ d) C₃ and C₄
541. Monomer of nucleic acid is
 a) Nucleotides b) Nucleoxides c) Aminoacids d) Carboxylic acid
542. An example of a protein which acts as a hormone is
 a) Casein b) Oxytocin c) Trypsin d) Keratin
543. An example for a saturated fatty acid, presents in nature is
 a) Oleic acid b) Linoleic acid c) Linolenic acid d) Palmitic acid
544. Charagaff's rule states that in an organism
 a) Amount of adenine (A) is equal to that of thymine (T) and amount of guanine (G) is equal to that of cytosine (C)
 b) Amount of adenine (A) is equal to that of guanine (G) and the amount of thymine (T) is equal to that of guanine (G)
 c) Amount of adenine (A) is equal to that of cytosine (C) and the amount of thymine (T) is equal to that of guanine (G)
 d) Amount of all bases are equal
545. Which of the following gives reddish brown precipitate with dilute solution of resorcinol in dilute HCl?
 a) Glucose b) Fructose c) Lactose d) Maltose
546. Washing soaps are potassium and sodium salts of:
 a) Formic , acetic, and maleic acid
 b) Oleic, palmitic and stearic acid
 c) Sulphur, chlorine and fluorine
 d) Acetone, ketone and quinones
547. Which of the following elements are necessary for maintaining fluid balance in the body?
 a) Calcium and magnesium
 b) Potassium and sodium
 c) Iron and magnesium
 d) None of the above
548. Vitamin A is present in:
 a) Liver b) Milk c) Green vegetables d) All of these
549. Molisch test is made for the detection of :
 a) Alkyl halide b) Carbohydrate c) Alkaloid d) Fat

550. The disease 'diabetes mellitus' is caused by the deficiency of:
 a) Iodine
 b) Insulin
 c) Phenyl alanine hydroxylase
 d) lysine
551. Starch is a polymer of
 a) Sucrose b) Maltose c) Glucose d) Hexose
552. Bases common to DNA and RNA are:
 a) Adenine, cytosine, uracil
 b) Guanine, adenine, cytosine
 c) Guanine, uracil, thymine
 d) Adenine, thymine, guanine
553. 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) Function as a catalyst for biological reactions d) Maintains blood sugar level
554. A compound of non-sugar and glucose which yields glucose on hydrolysis found in plants, is called:
 a) Alkoxide b) Glucoside c) Glycoside d) None of these
555. The enzyme which facilitates internal rearrangement in 3-phosphoglyceric acid to form 2-phosphoglyceric acid is
 a) Aldolase b) Triose phosphate isomerase
 c) Phosphoglycero mutase d) Pyruvate kinase
556. An example of protein is
 a) Narvon b) Lecithin c) Cellulose d) Insulin
557. Pick out the one which does not belong to the family
 a) Pepsin b) Cellulose c) Ptyalin d) lipase
558. The hormone that helps in the conversion of glucose to glycogen is
 a) Cortisone b) Bile acids c) Adrenaline d) Insulin
559. The sugar present in fruits is:
 a) Fructose b) Glucose c) Sucrose d) Galactose
560. Which one is a fibrous protein?
 a) Globulin b) Collagen c) Hordein d) Glutin
561. Deficiency of which vitamin can cause night blindness an eye disease?
 a) Vitamin B₆ b) Vitamin C c) Vitamin B₁₂ d) Vitamin A
562. Which of the following base is linked, as one strand of DNA to cytosine of the other strand by hydrogen bonds?
 a) Guanine b) Adenine c) Thymine d) Uracil
563. A nucleoside on hydrolysis gives
 a) A heterocyclic base and orthophosphoric acid
 b) An aldopentose, a heterocyclic base and orthophosphoric acid
 c) An aldopentose and a heterocyclic base
 d) An aldopentose and orthophosphoric acid
564. Number of chiral carbons in β-D-(+) glucose is:
 a) 5 b) 6 c) 3 d) 4
565. Colour of osazone of glucose is
 a) Red b) Brown c) Yellow d) Orange
566. Rancidity of butter is due to the formation of:
 a) Butyric acid b) Formaldehyde c) Acetic acid d) Benzoic acid
567. The enzyme which hydrolysis triglycerides to fatty acids and glycerol is called
 a) Maltase b) Lipase c) Zymase d) Pepsin
568. A DNA nucleotide chain has AGCTTCGA sequence. The nucleotide sequence of other chain would be

- a) TCGAAGCT b) GCTAAGCT c) TAGCATAT d) GATCCTAG
569. Blood sugar is the same as:
 a) Fructose b) Galactose c) Glucose d) Glycogen
570. Rancidity of oils and fats is due to:
 a) Partial hydrolysis by the action of atmospheric moisture and oxidation of fatty acids to foul smelling products
 b) Absorption of foul smelling ingredients from the air
 c) Fermentation caused by microorganisms
 d) Slow decomposition of fatty acids
571. Who pointed out peptide linkage in proteins?
 a) Kekule b) Hofmann c) Fisher d) Cannizzaro
572. The charring of sugar when it is treated with conc. H_2SO_4 is due to
 a) Oxidation b) Reduction c) Dehydration d) Hydrolysis
573. The vitamin which is water soluble:
 a) Vitamin E b) Vitamin D c) Vitamin K d) Vitamin B
574. A compound gives negative test with ninhydrin and positive test with Benedict's solution. The compound is
 a) A protein b) An amino acid c) A lipid d) A mono saccharide
575. Proteins are composed of:
 a) Nucleotides b) Nucleosides c) Dipeptides d) Amino acids
576. Glucose will show mutarotation when solvent is :
 a) Acidic b) Basic c) Neutral d) Amphoteric
577. Which of the following enzymes are used to convert starch into alcohol?
 a) Maltase, diastase
 b) Invertase, zymase
 c) Diastase, maltase, zymase
 d) Invertase, diastase, zymase
578. Which of the following is not simple protein?
 a) Albumin b) Globulin c) Glutinin d) All of these
579. The enzyme pepsin hydrolyses:
 a) Proteins to amino acids
 b) Fats to fatty acids
 c) Glucose to ethyl alcohol
 d) Polysaccharides to monosaccharides
580. Which of the following is an amphoteric acid?
 a) Glycine b) Salicylic acid c) Benzoic acid d) Citric acid
581. *Iso*-electric is a
 a) Specific temperature
 b) Suitable concentration of amino acid
 c) Hydrogen ion concentration that does not allow migration of amino acid under electric field
 d) Melting point of an amino acid under the influence of electric field
582. Which enzyme is present in salive?
 a) Urease b) Maltase c) Lactase d) Amylase
583. α –maltose consists of
 a) One α –D-glucopyranose unit and one β –D-glucopyranose unit with 1-2 glycosidic linkage
 b) Two α –D-glucopyranose units with 1-2 glycosidic linkage.
 c) Two β -D-glucopyranose units with 1-4 glycosidic linkage
 d) Two α –D-glucopyranose units with 1-4 glycosidic linkage
584. An alkali salt of palmitic acid is known as:
 a) An alkoxide b) An ester c) A soap d) An epoxide

585. A compound which catalyses a chemical reaction in a living organism is called a/an:
 a) Carbohydrate b) Enzyme c) Lipid d) Vitamin
586. The carbohydrate that will yield glucose and fructose on homogeneous catalytic hydrolysis in presence of dilute sulphuric acid is
 a) Cellulose b) Maltose c) Starch d) Sucrose
587. All drying oils contain a large amount of:
 a) Linoleic acid b) Linolenic acid c) Both (a) and (b) d) None of these
588. Which is capable to self replication?
 a) Enzymes b) DNA polymerase c) DNA ligase d) DNA
589. Which destroy antigens?
 a) Insulin b) Antibodies c) Chromoprotein d) Phosphoprotein
590. Aqueous solution of soap is:
 a) Acidic b) Basic c) Neutral d) Amphoteric
591. A detergent is a:
 a) Cleansing agent b) Drug c) Catalyst d) Soap
592. Which one is not a glyceride?
 a) Fat b) Oil c) Phospholipid d) Soap
593. Which carbohydrate is used in silvering of mirrors?
 a) Sucrose b) Starch c) Glucose d) Fructose
594. Biuret test is not given by
 a) Carbohydrates b) Polypeptides c) Urea d) Proteins
595. Structurally a biodegradable detergent should contain a:
 a) Normal alkyl chain b) Branched alkyl chain c) Hexyl side chain d) Cyclohexyl side chain
596. Starch is polymer of:
 a) Fructose b) Glucose c) Lactose d) None of these
597. The one which has least iodine value is
 a) Sunflower oil b) Ginger oil c) Ghee d) Groundnut oil
598. A vitamin which plays a vital role in the coagulating property of blood is:
 a) Vitamin A b) Vitamin D c) Vitamin E d) Vitamin K
599. Oligosaccharides contain.... Simple sugar units:
 a) 2 to 10 b) 4 to 8 c) 6 to 12 d) 6 to 10
600. Dalda is prepared from oils by
 a) Oxidation b) Reduction c) Hydrolysis d) Distillation
601. The anomeric carbon in D(+) glucose is
 a) C-1 carbon b) C-2 carbon c) C-5 carbon d) C-6 carbon
602. DNA template sequence of CTGATAGC is transcribed over *m*-RNA as
 a) GUCTUTCG b) GACUAUCG c) GAUTATUG d) UACTATCU
603. Ascorbic acid is also known as
 a) Vitamin A b) Vitamin B c) Vitamin C d) Vitamin D
604. The main point of difference between DNA and RNA is:
 a) Presence of thymine in DNA and RNA
 b) Presence of deoxyribose and thymine in DNA, ribose and uracil in RNA
 c) Presence of ribose and thymine in DNA, deoxyribose and uracil in RNA
 d) Presence of deoxyribose in DNA and ribose in RNA
605. The substance constituting more than 80% of cell contents is:
 a) Protein b) Mineral c) Fat d) Water
606. Helical structure of protein is stabilised by
 a) Peptide bond b) Hydrogen bond c) Van der Waal's force d) Dipole association
607. Which is sweetest among known sugars?
 a) Sucrose b) Fructose c) Glucose d) Lactose

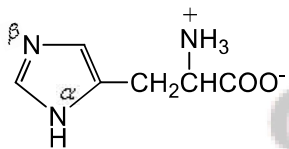
608. Saccharin is :
 a) Hexose b) Reducing sugar c) Glucoside d) None of these
609. Which one is involved in the formation of nicotinamide and indole -3-acetic acid?
 a) Lysine b) Tryptophan c) Tyrosine d) Glutamic acid
610. The polysaccharide used in the manufacture of paper is:
 a) Cellulose b) Starch c) Glucose d) Sucrose
611. Acetyl derivative of which carbohydrate is used in sizing of paper industry?
 a) Glucose b) Fructose c) Lactose d) Starch
612. Nucleic acid are polymers of
 a) Nucleosides b) Globulins c) Nucleons d) Nucleotides
613. Which of the following doesn't form an oxime?
 a) Glucose b) Glucose pentaacetate c) Arabinose d) Galactose
614. Emil Fischer was awarded Nobel Prize for his work on:
 a) Sugars and purines synthesis
 b) Ammonia discovery
 c) Optical activity
 d) Alkaloid synthesis
615. A source of oleic acid is:
 a) Animal fat b) Corn oil c) Linseed oil d) None of these
616. A Zwitter ion is
 a) Negatively charged ion without metal atom
 b) A heavy ion with a small charge on it.
 c) An ion with positive and negative charge at different points on it.
 d) A positively charged ion without a metal atom.
617. Milk changes after digestion into
 a) Glucose b) Lactose c) Fructose d) Glucogen
618. Glycogen is a branched polymer of:
 a) α -glucose b) β -glucose c) α -fructose d) None of these
619. The sequence in the structure of nucleic acid is:
 a) Base + phosphate group + pentose
 b) Phosphate group + pentose + base
 c) Pentose + base + phosphate group
 d) All of the above
620. Cellulose upon acetylation with excess acetic anhydride/ H_2SO_4 (catalytic) gives cellulose triacetate whose structure is



621. Which one of the following statements about amino acids is not true?
 a) They are constituents of all protein.

- b) They are all high melting solids.
 c) Most naturally occurring amino acids have D-configurations
 d) They are characterized by isoelectric point.
622. Which amino acid has no asymmetric carbon?
 a) Histidine b) Glycine c) α -alanine d) Threonine
623. The best source of vitamin A is
 a) Wheat b) Beans c) Carrots d) Oranges
624. Which set is the correct pairing set (or contains complementary pairs) responsible for the structure of DNA?
 (A = adenine, G = guanine, C = cytosine, T = thymine, U = uracil)
 a) A—T, G—C b) A—C, G—T c) A—G, C—T d) A—U, G—C
625. The pyrimidine bases presents in DNA are
 a) Cytosine and adenine b) Cytosine and guanine c) Cytosine and thymine d) Cytosine and uracil
626. Identify the product 'C' in the following series of reactions

$$\text{Glucose} \xrightarrow{\text{HCN}} A \xrightarrow{\text{H}_2\text{O}} B \xrightarrow{\text{HI}} C$$

 a) Heptanoic acid b) Hexanoic acid c) α -methyl caproic acid d) None of these
627. Toilet soap is:
 a) A mixture of calcium and sodium salts of higher fatty acids
 b) A mixture of potassium stearate and glycerol
 c) A mixture of sodium salts of higher fatty acids
 d) A mixture of potassium salts of higher fatty acids
628. Degree of unsaturation in oils and fats is measured in terms of:
 a) Saponification value b) Iodine value c) R/M value d) Acetyl value
629. Which of the nitrogen of histidine is first protonated?
- 
- a) α b) β c) Both (a) and (b) d) None of these
630. Carbohydrates containing more than 10 simple units of sugar are called:
 a) Monosaccharides b) Disaccharides c) Trisaccharides d) Polysaccharides
631. An optically active compound A, gave an $[\alpha]_D^{25} = 30^\circ$, while a mixture of A and its enantiomer B, gave $[\alpha]_D^{25} = +15^\circ$. The ratio of A and B in the mixture is
 a) 1 to 3 b) 3 to 1 c) 1 to 2 d) 2 to 1
632. Which of the following is a disaccharide?
 a) Sucrose b) Glucose c) Fructose d) Starch
633. Insulin has 51 amino acids in two polypeptide chains which are linked by:
 a) One sulphide bond
 b) One disulphide bond
 c) Two disulphide bonds
 d) Three disulphide bonds
634. DNA and RNA are chiral molecule due to the presence of:
 a) Chiral bases b) Phosphate ester unit c) D-sugar component d) L-sugar component
635. A glyceride is:
 a) A compound of glycerol with a metal
 b) A molecular compound of glycerol with a metal salt
 c) An ether formed by glycerol
 d) An ester of glycerol with fatty acids
636. Insulin production and its action in human body are responsible for the level of diabetes. This compound

- belongs to which of the following categories?
 a) A coenzyme b) A hormone c) An enzyme d) An antibiotic
637. Which one of the following does not correctly match with each other?
 a) Silk-polyamide b) Lipase-enzyme c) Butter-fat d) Oxytocin-enzyme
638. When vegetable oils react with hydrogen in presence of finely divided nickel catalyst we get:
 a) Saturated fat b) CO₂ and H₂O c) Washing soap d) None of these
639. The main structural feature of protein is:
 a) The ester linkage b) The ether linkage c) The peptide linkage d) All of these
640. Which is a protein?
 a) Gelatin b) Casein c) Plasma protein d) All of these
641. Which of the following hormones is excreted from adrenal cortex?
 a) Cortisone b) Estrogen c) Progesterone d) Testosterone
642. What is not true for enzymes?
 a) They are powerful biocatalysts
 b) They are all proteins
 c) They are highly specific in their action
 d) They do not lose activity on heating
643. One of the essential alpha amino acid is:
 a) Lysine b) Glycine c) Serine d) Proline
644. The amino acid which is not optically active is
 a) Lactic acid b) Serine c) Alanine d) Glycine
645. How glucose is related with fructose?
 a) Functional group isomerism b) Rotamers
 c) Position isomerism d) Geometrical isomerism
646. The chemical messenger produced in the endocrine (ductless) glands are grouped as:
 a) Polypeptides b) Hormones c) Bile salts d) Purines
647. The ultimate product of the hydrolysis of starch is:
 a) Glucose b) Fructose c) Sucrose d) None of these
648. Which of the following is not correct?
 a) Chlorophyll is responsible for the synthesis of carbohydrates in plants
 b) The compound formed in the addition of oxygen to haemoglobin is called oxyhaemoglobin
 c) Acetyl salicylic acid is known as aspirin
 d) The metal ion present in vitamin B₁₂ is Mg²⁺
649. Hormones function as:
 a) Chemical messengers b) Co-enzymes c) Provitamins d) All of these
650. Hardening of fat (lipid) is due to
 a) Hydrogenation b) Dehydrogenation
 c) Halogenation d) Dehydrohalogenation
651. Which of the following monosaccharide is pentose?
 a) Glucose b) Fructose c) Arabinose d) Galactose
652. The function of DNA in an organism is
 a) To assist in the synthesis of RNA molecule.
 b) To store information of heredity characteristics
 c) To assist in the synthesis of proteins and polypeptides
 d) All of the above
653. Which of the following biomolecules contain non-transition metal ion?
 a) Vitamin B₁₂ b) Chlorophyll c) Haemoglobin d) Insulin
654. The secondary structure of a protein refers to
 a) α-helical backbone
 b) Hydrophobic interaction

- c) Sequence of α –amino acids
- d) Fixed configuration of the polypeptide backbone

655. Raw linseed oil is present in a paint as:

- a) Drier
- b) Vehicle
- c) Lacquer
- d) Thinner

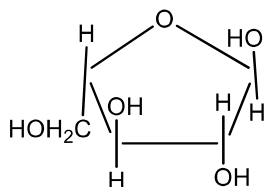
656. Which of the following contains vitamin D?

- a) Calciferol
- b) Keratin
- c) Tocopherol
- d) None of these

657. Which protein is main constituent of milk?

- a) Keratin
- b) Casein
- c) Myosin
- d) Insulin

658. Which set of terms correctly identifies the carbohydrate shown?



- 1. Pentose
- 2. Hexose
- 3. Aldose
- 4. Ketose
- 5. Pyranose

- a) 1, 3 and 6
- b) 1, 3 and 5
- c) 2, 3 and 5
- d) 2, 3 and 6

659. Which of the following is not a function of proteins?

- a) Nail formation
- b) Skin formation
- c) Muscle formation
- d) Providing energy for metabolism

660. α –and β – glucose differ in the orientation of -OH group around

- a) C₁
- b) C₂
- c) C₃
- d) C₄

661. Which one of the following is an ester?

- a) Coconut oil
- b) Kerosene oil
- c) Soap
- d) Glycerine

662. The carbohydrate which serves as reserve glucose in body is:

- a) Sucrose
- b) Starch
- c) Glycogen
- d) fructose

663. Which of the following compounds is responsible for the transmission of heredity characters?

- a) RNA
- b) DNA
- c) Glucose
- d) Haemoglobin