



BIOLOGY

BOOKS - DINESH PUBLICATION ENGLISH

MOLECULES OF THE CELL

Mcq

1. Cellular pool comprises

- A. Tens of biomolecules
- B. Hundreds of biomolecules
- C. Thousands of biomolecules
- D. Hundred thousands of biomolecules.

Answer: C



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2. Biomolecules occur in the cellular pool as

- A. Solutes in true solution
- B. Colloids in colloidal solution
- C. Insoluble in cellular structure
- D. All the above.

Answer: D



3. Biomolecules are

- A. Inorganic
- B. Organic
- C. Vital

D. Both A and B.

Answer: B



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4. All organic substances possess

A. Carbon, Hydrogen and Oxygen

B. Carbon, Oxygen and Nitrogen

C. Carbon and hydrogen

D. Carbon, Hydrogen, Oxygen and Nitrogen.

Answer: C



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5. Cellular micromolecules are

- A. Amino acids, Water, Minerals and Sugars
- B. Glycogen, Amino acids, Minerals and Nucleotides
- C. Water, Minerals, Nucleic acids, Amino acids and Nucleotides
- D. Sugars, Water, minerals, Proteins and Nucleotides.

Answer: A

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6. Which one has maximum water content

- A. Human
- B. Horse
- C. Jelly fish
- D. Coral.

Answer: C

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7. Total amount of water present in human body cells is

A. 20-22 litres

B. 18-19 litres

C. 14-15 litres

D. 10-12 litres.

Answer: A



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8. The density of water is maximum at $4^{\circ}C$.

A. Room temperature

B. $4^{\circ}C$

C. $0^{\circ}C$

D. -1°C

Answer: B



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9. Which one is high in case of water

A. Surface tension

B. Specific heat

C. Heat of vaporisation and heat of fusion

D. All the above.

Answer: D



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10. Water has high specific heat due to

- A. Its dipole nature
- B. Smaller angle between hydrogen atoms and oxygen atom
- C. Hydrogen bonds amongs molecules
- D. All the above.

Answer: C

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11. Water (H_2O) is liquid while all others of equivalent and even higher molecular weight molecules are gaseous because of the presence of

- A. Covalent bonding between Hydrogen and Oxygen
- B. Electrostatic attraction amongst water molecules
- C. Hydrogen bond
- D. Ionic bonds.

Answer: C

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12. Ice is lighter than water due to

- A. Lattice aggregates occupy more space
- B. Cold water is extremely dense
- C. Absence of hydrogen bonds in ice
- D. Absence of lattice aggregates in ice.

Answer: A

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13. Property of adhesion of water molecules to cell walls is due to

- A. Hydrogen bonds
- B. Dipole nature
- C. Ionisation of water

D. All the above.

Answer: A



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14. Framework element are

A. 6

B. 4

C. 3

D. 2

Answer: C



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15. Framework elements take part in

- A. Synthesis of protoplasm
- B. Synthesis of cell wall
- C. Formation of storage products
- D. Both B and C.

Answer: D

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16. Framework elements are

- A. Non-metal minerals
- B. Nonminerals
- C. Mixed
- D. Metals.

Answer: B

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17. Big four elements are

- A. Carbon, Hydrogen, Oxygen and Sulphur
- B. Carbon, Oxygen, sulphur and phosphorus
- C. Carbon, Nitrogen, Sulphur and Phosphorus
- D. Carbon, Hydrogen, Oxygen and Nitrogen.

Answer: D



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18. Protoplasmic elements form

- A. Proteins and enzymes
- B. Nucleic acids
- C. Lipids

D. All the above.

Answer: D



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19. Besides the big four, protoplasmic elements include

A. Sulphur and Phosphorus

B. Sodium and Potassium

C. Calcium and Magnesium

D. Chromium and Selenium.

Answer: A



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20. non-mineral essential elements are

- A. Carbon, Hydrogen and Oxygen
- B. Hydrogen, nitrogen and Sulphur
- C. Hydrogen, Nitrogen and Fluorine
- D. Chlorine, Fluorine and Nitrogen.

Answer: A

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21. Number of essential elements in animals is

- A. 16
- B. 18
- C. 20
- D. 24

Answer: D

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22. Number of essential elements in plants is

A. 10

B. 17

C. 20

D. 22

Answer: B



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23. Nitrogen is

A. Non-metal element

B. Mineral element

C. Non-metal element

D. All the above.

Answer: D



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24. In relation to insulin, Zinc is required for

A. Synthesis of insulin

B. Release of insulin

C. Activity of insulin

D. Breakdown of insulin.

Answer: B



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25. Element required for phloem transport is

A. Copper

B. Iron

C. Boron

D. Sodium.

Answer: C



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26. Most abundant mineral of the vertebrate body is

A. Calcium

B. Sodium

C. Potassium

D. Iron.

Answer: A



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27. Most abundant mineral of extracellular fluids is

- A. Calcium
- B. Potassium
- C. Sodium
- D. Phosphate.

Answer: C



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28. Chitin is strengthened by

- A. Calcium phosphate
- B. Magnesium phosphate
- C. Calcium carbonate

D. Magnesium carbonate.

Answer: C



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29. Mineral forming 90% of the cations of blood plasma is

A. Mg

B. Ca

C. K

D. Na.

Answer: D



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30. Mineral functioning as chemical messenger is

- A. Calcium
- B. Magnesium
- C. Manganese
- D. Molybdenum.

Answer: A

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31. Iron is stored in the body as

- A. Haemoglobin
- B. Ferritin
- C. Ferredoxin
- D. Myoglobin.

Answer: B

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32. Maximum content of iron is present in

- A. Ferritin
- B. Myoglobin
- C. Haemoglobin
- D. Cytochrome.

Answer: C



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33. Buffers against pH changes are

- A. Monobasic phosphate
- B. Dibasic phosphate
- C. Carbonic acid

D. All the above.

Answer: D



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34. Fluoride ion

- A. Prevents tooth decay
- B. Non-essential
- C. Toxic even in small quantity
- D. Both B and C.

Answer: A



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35. Mineral element present in cytochrome is

A. potassium

B. Zinc

C. Iron

D. Manganese.

Answer: C

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36. Dibasic phosphate (HPO_4^{2-}) is a buffer against

A. Toxic chemicals

B. Strong acids

C. Strong base

D. Weak bases and acids.

Answer: C

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37. Monobasic phosphate ($H_2PO_4^-$) is a buffer against

- A. Weak acid
- B. Weak base
- C. Strong base
- D. Strong acid.

Answer: D



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38. Iodine occurs in human body as

- A. Thyroxine
- B. Inorganic iodide
- C. Protein bound iodine

D. All the above.

Answer: D



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39. Magnesium is required for enzymes connected with

A. Oilgosaccharide formation

B. ATP utilising reactions

C. Glycoprotein formation

D. All the above.

Answer: B



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40. Maximum amount of Manganese is found in

A. Ribosomes

B. Lysosomes

C. Mitochondria

D. Nucleus.

Answer: C

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41. Ca^{2+} and Mg^{2+}

A. Reduce excitability of nerves and muscles

B. Increase excitability of nerves and muscles

C. Conduct nerve impulses

D. Both B and C.

Answer: A

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42. The ratio between hydrogen and oxygen in a carbohydrate is

A. 5:1

B. 4:3

C. 3:1

D. 2:1

Answer: D



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43. $C_nH_{2n}O_2$ is the general formula of

A. Fatty acid

B. Fat

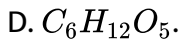
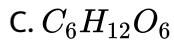
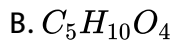
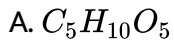
C. Glycerol

D. Carbohydrate.

Answer: D

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44. Deoxyribose is



Answer: B

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45. The simplest form of carbohydrates.....

A. Carbon

B. Starch

C. Monosaccharide

D. Cane sugar.

Answer: C



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46. A monosaccharide is

A. Lactose

B. Sucrose

C. Ribose

D. Maltose.

Answer: C



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47. How many carbon atoms are generally used in composition of monosaccharides ?

A. 20

B. 10 – 15

C. 2 – 10

D. 3 – 7.

Answer: D



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48. The most common carbohydrate monomer is

A. Maltose

B. Lactose

C. Glucose

D. Galactose.

Answer: C



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49. The sweetest chemical is

A. Fructose

B. Saccharin

C. Monellin

D. Thaumatin.

Answer: D



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50. Non-reducing sugar is

- A. Glucose
- B. Sucrose
- C. Fructose
- D. Maltose.

Answer: B

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51. Xylitol is

- A. Artificial sweetener
- B. Nutritive sweetener
- C. Non-nutritive sweetener
- D. Both A and B.

Answer: C

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52. Reducing sugars are simple carbohydrates having

- A. Free aldehyde
- B. Bound aldehyde
- C. Free aldehyde or ketone
- D. Bound ketone.

Answer: C



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53. A ketose sugar is

- A. Glucose
- B. Fructose
- C. Glyceraldehyde

D. Both A and B.

Answer: B



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54. Laevulose present in honey is

A. Disaccharide

B. Glucose

C. L-Fructose

D. Pentose.

Answer: C



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55. In Fehling's or Benedict's solution, a reducing sugar causes conversion of

- A. Ferric to ferrous state
- B. Ferrous to ferric state
- C. Cuprous to cupric state
- D. Cupric to cuprous state.

Answer: D



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56. Use of artificial sweetener saccharin has been discontinued because it is

- A. Carcinogenic
- B. Liable to decompose in hot weather of tropics
- C. Bitter in the beginning

D. All the above.

Answer: A



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57. The commonly used artificial sweetener is

A. Acesulfame K

B. Cyclamate

C. Aspartame

D. Saccharin.

Answer: C



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58. Mannitol is

A. Amino acids, Water, Minerals and Sugars

B. Amino alcohol

C. Sugar alcohol

D. Sugar acid.

Answer: C

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59. Which one is sugar acid

A. Vitamin C

B. Vitamin K

C. Vitamin D

D. Vitamin E

Answer: A

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60. Cellobiose, the hydrolytic breakdown product of cellulose is

- A. A monosaccharide
- B. A disaccharide
- C. A tetrasaccharide
- D. A trisaccharide.

Answer: B



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61. Inulin is a polymer of

- A. Glucose
- B. Galactose
- C. Fructose

D. Arabinose.

Answer: C



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62. Raffinose is a

A. Monosaccharide

B. Disaccharide

C. Trisaccharide

D. Tetrasaccharide.

Answer: C



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63. Most sugars are dextrorotatory which means they

- A. Tilt light to right
- B. Rotate polarised light to right
- C. Tilt light to left
- D. Rotate polarised light to left.

Answer: B

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64. The term lipid was given by

- A. Sutherland
- B. Bloor
- C. Altmann
- D. Berzelium.

Answer: B

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65. $C_nH_{2n}O_2$ is the general formula of

- A. Carbohydrate
- B. Fatty acid
- C. Fat
- D. Nucleic acid.

Answer: B



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66. Each molecule of fat has

- A. One glycerol molecule and one fatty acid molecule
- B. One glycerol molecules and three fatty acid molecule
- C. Three glycerol molecules and one fatty acid molecule

D. Three glycerol and three fatty acid molecules.

Answer: B



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67. Which one is a saturated fatty acid ?

A. With no double bond

B. High melting point

C. Low melting point

D. Both A and B.

Answer: D



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68. The melting point of unsaturated fatty acids

- A. Increases with increase in double bonds
- B. Decreases with increase in double bonds
- C. Rises in some and falls in others
- D. There is no relationship between unsaturation and melting point.

Answer: B

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69. Essential fatty acids were discovered by

- A. Evans and Burr
- B. Bloor
- C. Sutherland
- D. Beer.

Answer: A

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70. Number of essential fatty acids is

A. 6

B. 4

C. 3

D. 2

Answer: C



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71. Essential fatty acids are

A. Saturated

B. Unsaturated

C. Both saturated and unsaturated

D. Cyclic.

Answer: B



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72. Which one is essential fatty acid

A. Linoleic acid

B. Linolenic acid

C. Arachidonic acid

D. All the above.

Answer: D



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73. Essential fatty acids occur in

- A. Animal fat
- B. Plant oils
- C. Fish and fowl
- D. Both B and C.

Answer: D

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74. Deficiency of EFA causes

- A. Follicular keratosis
- B. Kidney failure
- C. Sterility
- D. All the above.

Answer: D

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75. Number of double bonds present in arachidonic acid is

A. 4

B. 3

C. 2

D. 1

Answer: A



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76. Arachidonic acids gives rise to

A. Terpenes

B. Prostaglandins

C. Gangliosides

D. Cerebrosides.

Answer: B



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77. Major function of PUFA is

- A. Supply of essential fatty acids
- B. Lowering of cholesterol level
- C. Prevent atherosclerosis
- D. All the above.

Answer: D



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78. Which one provides twice as much energy as carbohydrates

A. Protein

B. Fat

C. Amino acids

D. Vitamins.

Answer: B

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79. Number of fatty acids present in a molecule of phospholipid is

A. Two

B. Three

C. One

D. None.

Answer: A

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80. Cholesterol is a

- A. Monosacharide
- B. Protein
- C. Sterol
- D. Wax.

Answer: C



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81. In contact with water, fatty acids produce

- A. Monolayer
- B. Bilayer
- C. Trilayer

D. Membrane.

Answer: A



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82. In contact with water, phospholipids produce

A. Monolayer

B. Bilayer

C. Trilayer

D. Emulsion.

Answer: B



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83. Wax present in human blood is

- A. Mericyl palmitate
- B. Cetyl palmitate
- C. Cholesterol palmitate
- D. Ceryl palmitate.

Answer: C

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84. Wax is ester of fatty acid with

- A. Long chain dihydric alcohol
- B. Trihydric alcohol
- C. Long chain monohydric alcohol
- D. Short chain monohydric alcohol.

Answer: C

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85. Bee's wax consists of

- A. Mericyl palmitate
- B. Mericyl stearate
- C. Cetyl palmitate
- D. Cetyl stearate.

Answer: A



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86. Commonly candles are prepared from

- A. Bee's wax
- B. Paraffin wax
- C. Stearic acid

D. Both B and C.

Answer: D



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87. Lanolin or wool fat is a

A. Hard fat

B. Oil

C. Wax

D. Sterol.

Answer: C



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88. Lycopene, the colouring agent of Tomato, is a

A. Sterol

B. Terpenoid

C. Sphingolipid

D. Phospholipid.

Answer: B

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89. Rubber is

A. Monoterpene

B. Diterpene

C. Tetraterpene

D. Polyterpene.

Answer: D

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90. Number of protein amino acids is

A. 20

B. 16

C. 32

D. 64

Answer: A



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91. Essential amino acids were discovered by

A. Evans and Burr

B. Hopkin

C. Beevers

D. Sutherland.

Answer: B



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92. Protein amino acids are

A. Laevorotatory

B. Dextrorotatory

C. Laevorotatory except glycine which is nonrotatory

D. Laevorotatory except glycine which is dextrorotatory.

Answer: C



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93. A functional but nonprotein amino acid is

- A. Ornithine
- B. Citrulline
- C. Diaminopimelic acid
- D. All the above.

Answer: D

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94. Number of pyrimidines found in nucleotides is

- A. 3
- B. 2
- C. 1
- D. Numerous.

Answer: A

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95. Nitrogen bases are

- A. Homocyclic
- B. Heterocyclic
- C. Open chain hydrocarbons
- D. All the above.

Answer: B



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96. Nitrogen base is attached to pentose sugar in a nucleoside at carbon atom

- A. Carbon-5' of pentose sugar
- B. Carbon-1' of pentose sugar
- C. N-1 and N-9

D. Both B and C.

Answer: D



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97. Phosphate of a nucleotide is attached to carbon atom of its pentose sugar

A. 1'

B. 2'

C. 3'

D. 5'

Answer: D



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98. Cyclic AMP is

- A. Adenosine 1-3 monophosphate
- B. Adenosine 2-4 monophosphate
- C. Adenosine 3-5 monophosphate
- D. Adenosine 1-5 monophosphate

Answer: C



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99. Polymerisation is important in

- A. Producing new chemicals
- B. Reducing osmotic influence
- C. Storage
- D. All the above.

Answer: D



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100. Cellulose is formed by union of repeated residues of

A. Amino acids

B. Lipids

C. Glucose

D. Fructose.

Answer: C



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101. A fibrous polysachharide is

A. Glycogen

B. Starch

C. Cellulose

D. Collagen.

Answer: C



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102. Which is an unbranched glucan (hexagon)?

A. Cellulose

B. Starch

C. Glycogen

D. All the above.

Answer: A



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103. An anticoagulant mucopolysachharide commonly present in animal body is

- A. Chondroitin sulphate
- B. Keratan sulphate
- C. Heparin
- D. Hyaluronic acid.

Answer: C



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104. Dahlia starch is used for

- A. Study of digestive anzymes
- B. Study of kidney function
- C. Preparation of noodle
- D. Manufacture of chocolates.

Answer: B



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105. Glycogen occurs in the form of

- A. Rounded grains
- B. Ellipsoid grains
- C. Elongated granules
- D. Flat ellipsoid granules.

Answer: D



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106. Glycogen granules are located inside

- A. Amylopasts

B. Mitochondria

C. Cytoplasm

D. Lysosomes.

Answer: C



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107. In branching of molecules of starch, which glycosidic bond occurs?

A. $\alpha 1 \rightarrow 6$

B. $\alpha 1 \rightarrow 4$

C. $\beta 1 \rightarrow 4$

D. $\beta 1 \rightarrow 6$

Answer: A



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108. Main chain of glycogen and starch is helically coiled with each turn of helix having

- A. 10 - 14 glucose residues
- B. 8 - 10 glucose residues
- C. 6 glucose residues
- D. 4 glucose residues.

Answer: C



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109. Glycosidic linkage present between adjacent glucose units of starch or glycogen is generally

- A. $\beta 1 \rightarrow 4$
- B. $\alpha 1 \rightarrow 4$
- C. $\alpha 2 \rightarrow 1$

D. $\beta 2 \rightarrow 6$

Answer: B

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110. Linkage present in between glucose residues of cellulose is

A. $\beta 1 \rightarrow 4$

B. $\beta 1 \rightarrow 6$

C. $\alpha 1 \rightarrow 4$

D. $\alpha 1 \rightarrow 6$.

Answer: A

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111. The most abundant organic molecule is

A. RuBisCO

B. Starch

C. Cellulose

D. Chitin.

Answer: C



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112. The monomer units of chitin and fungus cellulose are

A. Mannitol

B. Acetyl glucosamine

C. Ascorbic acid

D. Glucuronic acid.

Answer: B



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113. A mucopolysaccharide that functions as cell cement and lubricant is

- A. Heparin
- B. Hyaluronic acid
- C. Keratan sulphate
- D. Chondrotin sulphate.

Answer: B



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114. A polysaccharide employed in tissue culture is

- A. Cellulose
- B. Starch
- C. Glycogen

D. Agar-agar.

Answer: D



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115. Compound starch grains are present in

A. Potato

B. Rice

C. Oat

D. All the above.

Answer: D



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116. Hilum of a starch grains is formed of

A. A special micro-grain of starch

B. Proteinaceous centre

C. Lipid centre

D. Nucleic acid centre.

Answer: B

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117. What is wrong

A. Cellulose is most abundant organic molecule

B. Chitin is the second most abundant organic molecule

C. Celulose is the most abundant heteropolysaccharide

D. Chitin is the second most abundant homopolysaccharide.

Answer: C

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118. Rayon and cellophane are formed of

- A. Cellulose xanthate
- B. Cellulose nitrate
- C. Cellulose acetate
- D. Carboxymethyl cellulose.

Answer: A



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119. A salt of cellulose used in propellant explosives is

- A. Cellulose acetate
- B. Cellulose nitrate
- C. Cellulose superphosphate

D. Cellulose hypoxanthate.

Answer: B



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120. Cellulose acetate is raw material for

A. Photographic films

B. Treicot

C. Shatter proof glass

D. All the above.

Answer: D



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121. Smoothing agent in ice-creams and brightening agent in detergents is

- A. Cellulose hypoxathate
- B. Cellulose xanthate
- C. Carboxymethyl cellulose
- D. All the above.

Answer: C



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122. Protein is a

- A. Macromolecule
- B. Steroid
- C. Fat
- D. Micromolecule.

Answer: A



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123. A protein molecule is formed of

- A. Chain of amino acids
- B. Chain of fatty acids
- C. Chain of monosachharides
- D. Chain of oligosaccharides.

Answer: C



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124. Number of amino acids present in hormone adrenocorticotrophin is

- A. 10

B. 70

C. 58

D. 39

Answer: D



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125. Primary structure of protein is due to

A. Hydrogen bonds

B. Peptide bonds

C. glycosidic bond

D. Ionic bonds.

Answer: B



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126. How many amino acids molecules form a molecule of haemocyanin (hemocyanin), a blood pigment of snails

A. 68

B. 72

C. 4500

D. 600-660

Answer: D



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127. Proteins can be denatured by

A. Carbon dioxide

B. Carbon monoxide

C. Heat

D. Oxygen.

Answer: C



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128. The compound present in milk is

- A. Casein
- B. Glutelin
- C. Myosin
- D. Globulin.

Answer: A



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129. A complete protein is one which possesses

- A. All non-essential amino acids

- B. All essentials amino acids
- C. All the 20 amino acids
- D. All the amino acids with complex structure

Answer: B



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130. The most abundant molecule of protoplast is

- A. Proteins
- B. Lipids
- C. Carbohydrates
- D. Nucleic acids.

Answer: A



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131. Molecular weight of smallest proteins molecule

ACTH(adrenocorticotropic hormone) is

A. 5600

B. 4500

C. 3100

D. 6200

Answer: B



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132. In α – helix secondary structure, hydrogen bonds lie between oxygen of carboxylic group of first amino acid to the -NH group of the

A. 2nd amino acid

B. 3rd amino acids

C. Fourth amino acid

D. Fifth amino acid.

Answer: C

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133. Which is type of secondary protein structure

- A. α -helix
- B. β -pleated
- C. Collagen helix
- D. All the above.

Answer: D

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134. In β -pleated secondary protein structure there are

- A. Two or polypeptide chains
- B. Hydrogen bonds between adjacent polypeptide chains
- C. Parallel or antiparallel polypeptides
- D. All the above.

Answer: D

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135. Haemoglobin is

- A. Monomeric protein
- B. Oligomeric protein
- C. Chromoprotein
- D. Both B and C.

Answer: D

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136. Primary structure of polypeptide is stabilised or secondary structure of polypeptide is maintained by

- A. Hydrogen bonds
- B. Disulphide bonds
- C. Ionic bonds
- D. Hydrophobic inteaction.

Answer: A



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137. Protomers are

- A. Primitive proteins
- B. Protein subunits
- C. Protein aggregate

D. None of the above.

Answer: B



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138. Final structure in fibrous proteins is

A. Secondary structure

B. Tertiary structure

C. Quaternary structure

D. Primary structure.

Answer: A



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139. Quaternary structure is found in

- A. Simple monomeric proteins
- B. Conjugate monomeric proteins
- C. Oligoproteins
- D. Both B and C.

Answer: C

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140. Most abundant protein in the human body is

- A. Haemoglobin
- B. Keratin
- C. Collagen
- D. Immunoglobulin.

Answer: C

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141. Which forms nails, hair and feathers

- A. Keratan sulphate
- B. Keratin
- C. Collagen
- D. Elastin.

Answer: B



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142. Oxygen transporting protein is haemoglobin. Which one is oxygen storing protein

- A. Myoglobin
- B. Actin
- C. Myosin

D. Caseinogen.

Answer: A



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143. Mucin present in saliva is a

A. Mucoprotein

B. Mucopolysaccharide

C. Deride protein

D. Samall polysachharide.

Answer: A



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144. Proteins present in milk egg and meat are

A. Partially complete

B. Complete

C. Incomplete

D. Both B and C.

Answer: B



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145. A globular protein is

A. Elastin

B. Keratin

C. Albumin

D. Collagen.

Answer: C



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146. Adenine of DNA is equimolar with

- A. Uridine
- B. Thymine
- C. Guanine
- D. Cytosine.

Answer: B



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147. DNA is a polymer of

- A. Proteins
- B. Carbohydrates
- C. RNA

D. Nucleotides.

Answer: D



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148. A DNA strand is directly involved in the synthesis of all of the following, except

A. DNA

B. Protein

C. rRNA

D. mRNA

Answer: B



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149. DNA is unique in that it has

- A. Nitrogen bases
- B. Ability to withstand heat
- C. Ability to replicate
- D. Ability for replication and transcription.

Answer: D



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150. DNA differs from RNA in the nature of

- A. Nature of sugar alone
- B. Nature of purines alone
- C. Nature of sugar and pyrimidines
- D. All the above.

Answer: C



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151. Enzymes (Biocatalysts) were discovered accidentally in yeast cell extract by a biochemist for which he was awarded Nobel Prize was

- A. Kuhne
- B. Duclaux
- C. Buchner
- D. Dubrunfaut.

Answer: C



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152. Who confirmed protein nature of enzymes

A. Monod et al

B. Arber et al

C. Berzelium

D. Northrop.

Answer: D



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153. Number of known enzymes is

A. 500

B. 1000

C. 1500

D. Over 2000.

Answer: D



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154. Molecular weight of the smallest enzyme (bacterial ferredoxin) is

A. 6000

B. 5400

C. 4500

D. 3500

Answer: A



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155. A nucleic acid enzyme is

A. Lysozyme

B. Ribozyme

C. Ribonucleases-P

D. Both B and C.

Answer: D



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156. Many enzymes are produced in inactive state called

- A. Allosteric enzyme
- B. Enzyme precursor
- C. Proenzyme or zymogen
- D. Both B and C.

Answer: D



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157. Which one is a conjugate enzyme

A. Succinate dehydrogenase

B. Urease

C. Trypsin

D. Both A and B.

Answer: A



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158. An enzyme made of both protein and non-protein part is together called

A. Coenzyme

B. Endoenzyme

C. Exoenzyme

D. Holoenzyme.

Answer: D

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159. An apoenzyme is a

- A. Vitamin
- B. Amino acid
- C. Carbohydrates
- D. Protein.

Answer: D

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160. Non-protein part of holoenzyme is

- A. Vitamin
- B. Cofactor
- C. Fatty acid

D. Zymogen.

Answer: B



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161. Vitamins are generally involved in forming component of enzyme called

- A. Apoenzyme
- B. Holoenzyme
- C. Prosthetic group
- D. Coenzyme and prosthetic group

Answer: D



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162. Loosely attached organic cofactor of holoenzyme is called

- A. modulator
- B. Prosthetic group
- C. Coenzyme
- D. Ligase.

Answer: C



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163. Firmly attached organic cofactor of holoenzyme is

- A. Transferase
- B. Activator
- C. Modulator
- D. Prosthetic group.

Answer: D



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164. Coenzyme is

- A. Carbohydrate
- B. Protein
- C. Vitamin
- D. Fatty acid.

Answer: C



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165. Part of enzyme where substrate is changed into product is called

- A. Allosteric site

B. Active site

C. Cofactor

D. Prosthetic group.

Answer: B



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166. Which one gives rise to coenzyme

A. B_2

B. B_1

C. Nicotinamide

D. All the above.

Answer: D



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167. Each step of a metabolic pathway has its

- A. Own cofactor
- B. Enzyme
- C. Coenzyme
- D. One to several enzymes.

Answer: B



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168. In certain metabolic pathways, a number of enzymes are required.

These multienzyme complexes occur enclosed in

- A. Membrane
- B. Area with in ATP
- C. Microbodies
- D. Endoplasmic reticulum.

Answer: A



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169. Inorganic cofactor is often called

- A. Coenzyme
- B. Prosthetic group
- C. Modulator
- D. Activator.

Answer: D



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170. Active site of an enzyme is formed of

- A. Amino groups of some amino acids.

B. Carboxyl groups of some amino acids

C. HS bonds of amino acids

D. R-groups of selected amino acids

Answer: D



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171. Different molecular forms of an enzyme having the same substrate specificity are

A. Zymogens

B. Coenzymes

C. Isoenzyme

D. Allosteric enzymes.

Answer: C



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172. An allosteric enzyme has

- A. One active site
- B. One active site and one allosteric site
- C. Active site and two types of allosteric sites
- D. Two types of active sites

Answer: C



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173. Allosteric enzymes have allosteric sites for

- A. Both activation and inhibition
- B. Inhibition only
- C. Activation only
- D. Reduction in activation energy.

Answer: A



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174. Turn-over number of the fastest enzyme is

A. 18×10^4

B. 10^4

C. 36×10^6

D. 10^5 .

Answer: C



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175. Which of the following is the fastest enzyme ?

A. Urease

B. Carbonic anhydrase

C. Trypsin

D. Pepsin.

Answer: B



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176. Substrate concentration at which an enzyme attains half its maximum velocity is

A. Threshold value

B. Half-life

C. Michaelis-Menten constant

D. Concentration coefficient.

Answer: C



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177. Enzyme that does not follow K_m value is

- A. Exoenzyme
- B. Allosteric enzyme
- C. Isoenzyme
- D. Pepsin.

Answer: B



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178. K_m value is

- A. Maximum reaction velocity
- B. Near maximum reaction velocity
- C. One half of maximum reaction velocity
- D. Threshold value.

Answer: C



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179. The word appended at the end of enzyme name is

- A. – ose
- B. – ase
- C. – in
- D. – sin.

Answer: B



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180. The word -ase added to enzyme name is

- A. Suffix

B. Prefix

C. Interpolation

D. Conjugation.

Answer: A



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181. The suffix-ase to enzyme names was proposed by

A. Duclaux

B. Buchner

C. Northrop

D. Pasteur.

Answer: A



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182. The enzyme catalysing breakdown without addition of water are called

- A. Lyases
- B. Hydrolases
- C. Ligases
- D. Oxidoreductases.

Answer: A



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183. The enzyme that act on starch are

- A. Esterases
- B. Amylases
- C. Proteases
- D. Lipases.

Answer: B



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184. Enzyme aldolase which helps in splitting 1,6 fructose biphosphate into dihydroxy acetone phosphate and glyceraldehyde phosphate belongs to the category of

- A. Ligases
- B. Hydrolases
- C. Transferases
- D. lyases.

Answer: D



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185. Enzyme taking part in converting dihydroxyacetone phosphate to glyceraldehyde phosphate belongs to the class of

- A. Isomerases
- B. Hydrolase
- C. Ligases
- D. Transferases.

Answer: A



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186. Epimerase belongs to the class of enzymes

- A. Hydrolases
- B. ligases
- C. Isomerases
- D. Oxidoreductases.

Answer: C



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187. Enzymes catalysing bonding of two components with the help of ATP are

- A. Transferase
- B. ligases
- C. Lyases
- D. Phosphorylases.

Answer: B



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188. Enzymes used in breaking DNA at specific sites are

A. DNA-ases

B. Endonucleases

C. Restriction endoucleases

D. Exonucleases.

Answer: C

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189. Restriction endonucleases were discovered by

A. Arber et al

B. Monod et al

C. Cech et al

D. Altman et al

Answer: A

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190. IUB has divided enzymes into classes

A. 4

B. 5

C. 6

D. 7

Answer: C



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191. Most of the digestive enzymes belong to the class of

A. Ligases

B. Hydrolases

C. Oxidoreductases

D. Transferases.

Answer: B



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192. Constitutive enzymes are

- A. Operational all the time
- B. House keeping enzymes
- C. Alloenzymes
- D. Both A and B.

Answer: D



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193. Repressible enzymes is

- A. Present all the time
- B. Functional almost all the time
- C. Repressed in presence of a specific chemical
- D. All the above.

Answer: D

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194. Alloenzymes are

- A. Enzyme precursors
- B. Similar enzymes formed from different genes
- C. Different enzyme of an enzyme system
- D. Antienzymes.

Answer: B

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195. Which one has more free energy

- A. Reactants
- B. Transition state of reactants
- C. Products
- D. Active site of enzyme.

Answer: B



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196. Energy required for start of a chemical reaction is

- A. Activation energy
- B. Entropy
- C. Potential energy

D. Kinetic energy.

Answer: A



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197. An enzyme accelerates a biochemical reaction by

- A. Increasing substrate movements
- B. Changing free enzyme
- C. Production of heat
- D. Lowering energy of activation.

Answer: D



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198. Enzyme function is to

- A. Change equilibrium
- B. Cause biochemical reaction
- C. Change the direction of reaction
- D. Change the rate of biochemical reaction.

Answer: D

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199. Part of active site of enzyme where substrate is held is known as

- A. Turnover number
- B. Catalytic group
- C. Activation site
- D. Butterssing group.

Answer: D

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200. The 'induced fit theory' for enzyme action was given by.....

- A. Kuhne
- B. Buchner
- C. Fischer
- D. Koshland.

Answer: D



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201. Catalytic group of active site weakens substrate bonds by

- A. Channel energy
- B. Electrophilic changes
- C. Nucleophilic changes

D. Both B and C.

Answer: D



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202. As temperature changes from $3^{\circ}C$ to $45^{\circ}C$, the rate of enzyme activity will

- A. Not change
- B. Increase excitability of nerves and muscles
- C. Increase initially and then decrease
- D. Decrease.

Answer: C



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203. Spoilage of food material is prevented in cold storage due to

- A. Reduced respiration at low temperature
- B. Reduced enzyme activity in food articles
- C. Reduced enzyme activity in microbes as well as food articles
- D. Purified nature of air.

Answer: C



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204. Competitive inhibition is due to

- A. Protein poison
- B. Substrate analogue
- C. Nonavailability of activation energy
- D. Short wave radiation.

Answer: B



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205. Feedback inhibition of an enzymatic reaction is caused by

- A. Accumulated end products
- B. Chemical produced by hormones
- C. Hormones
- D. Competitive inhibition.

Answer: A



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206. A high fever is dangerous to a human because

- A. Denatures enzymes

- B. Inactivates enzymes
- C. Coagulates blood
- D. Boils fluids inside body.

Answer: A



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207. Non-competitive inhibition often results in

- A. Change in enzyme structure
- B. Blocking of active site
- C. Non-synthesis of enzymes
- D. Non-availability of cofactor.

Answer: A



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208. A substance that unrelated to substrate reversibly changes the activity of an enzyme. It is

- A. Competitive inhibitor
- B. Allosteric subunit
- C. Allosteric modulator
- D. None of the above.

Answer: C



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209. Malonate functions as substrate analogue and inhibits enzyme

- A. Succinate dehydrogenase
- B. Pyruvate oxidase
- C. Fumarase
- D. Isocitrate dehydrogenase.

Answer: A



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210. Cyanide causes irreversible inhibition of cytochrome oxidase. It

- A. Combines with an amino acid
- B. Destroys tertiary structure
- C. Attaches to iron
- D. All the above.

Answer: C



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211. Nerve gas (DFP) inhibits neurotransmission as it reacts with

- A. Serine of acetylcholine-esterase

B. Choline of acetylcholine-esterase

C. Acetylcholine

D. Noradrenaline.

Answer: A



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212. Sulphonamides were used to treat microbial infection because they inhibit microbial growth by

A. Inhibiting wall formation

B. Competing with PABA required for synthesis of folic acid

C. Breaking naked DNA of microbes.

D.

Answer: B



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213. Enzyme action comes to a stop when hydration decreases in maturing seeds to

- A. 50 - 60%
- B. 30 - 45%
- C. 25 - 30%
- D. 10 - 20%

Answer: D



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Rq

1. The substance which makes up about 80 % of cytoplasm and has unique structure

A. Proteins

B. Water

C. Fat

D. Minerals.

Answer: B



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2. Most of the water found in the cell occurs m

A. Cell wall

B. Nucleus

C. Cytoplasm

D. Vacuoles.

Answer: C



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3. which of the following disaccharides will give two molecules of glucose on hydrolysis ?

- A. Sucrose
- B. Maltose
- C. Lactose
- D. Both B and C.

Answer: B



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4. Which of the following is the simplest amino acid?

- A. Glycine
- B. Lysine
- C. Tyrosine

D. Aspartic acid.

Answer: A



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5. Instantaneous source of energy is

A. Sucrose

B. Glucose

C. Fat

D. Starch.

Answer: B



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6. Which is not having high energy phosphate bond ?

A. Creatine phosphate

B. GTP

C. ATP

D. AMP.

Answer: D



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7. A source of maximum energy is

A. Carbohydrate

B. Fat

C. Protein

D. Vitamins.

Answer: B



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8. Which one is the last electron acceptor over ETC in oxidative phosphorylation

A. CoA

B. $NADP^+$

C. ATP

D. DNA.

Answer: B



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9. Adenine is

A. Purine

B. Pyrimidine

C. Nucleoside

D. Nucleotide.

Answer: A



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10. Energy made available in catabolic reactions is immediately stored in

A. Glucose

B. NADH

C. ATP

D. DNA.

Answer: C



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11. Carbohydrate is

- A. Glycerol
- B. Maltase
- C. Sucrose
- D. All the above.

Answer: C

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12. Chemical used most by plant is

- A. Carbon dioxide
- B. Oxygen
- C. Cytochrome
- D. Nitrogen.

Answer: A

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13. A nucleotide is formed of

- A. Purine, pyrimidine and phosphate
- B. Purine, sugar and phosphate
- C. Nitrogen base, sugar and phosphate
- D. Pyrimidine, sugar and phosphate

Answer: C



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14. Which are purines ?

- A. Adenine and Guanine
- B. Adenine and Thymine
- C. Cytosine and thymine

D. Cytosine and Guanine.

Answer: A



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15. Middle lamella mainly contains

A. Ca

B. Mg

C. K

D. Na.

Answer: A



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16. Mineral associated with cytochrome is

A. Cu

B. Mg

C. Fe and Mg

D. Fe and Cu.

Answer: D



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17. In blood, the main buffers are

A. Na and K

B. Sodium dihydrogen phosphate and sodium monohydrogen phosphate

C. Carbonic acid and bicarbonate

D. Ammonium acetate.

Answer: C



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18. Membrane permeability is controlled by

A. Na^+

B. K^+

C. Both A and B

D. Ca^{2+}

Answer: D



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19. Water protects organisms from thermal shock due its high

(a) Thermal conductivity

(b) Latent heat

(c) Dielectric constant

(d) All the above

A. Thermal conductivity

B. Latent heat

C. Dielectric constant

D. All the above.

Answer: B

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20. Living cell contains 60-75% water. Water present in human body is

A. 60-75%

B. 50-55%

C. 75-80%

D. 65-70%

Answer: D

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21. Amino acids are produced from

- A. Proteins
- B. Fatty acid
- C. Essential oils
- D. α -keto acids.

Answer: D



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22. Nucleotide found in the cells is

- A. cAMP
- B. AMP
- C. ADP

D. ATP.

Answer: D



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23. Which one is nucleotide ?

A. Uridylic acid

B. Thymidine

C. Cytosine

D. Glutamic acid.

Answer: A



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24. If an isolated strain of DNA is kept at 82- 90° C , then

A. The two strands uncoil and separate

B. Fragmentation occurs

C. Thymine is replaced by uracil

D. The structure is stabilised.

Answer: A



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25. In RNA, thymine is replaced by

A. Adenine

B. Guanine

C. Cytosine

D. Uracil.

Answer: D



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26. The common feature amongst nucleus, chloroplast and mitochondria is

- A. Lamellae
- B. DNA
- C. Cristae
- D. All the above.

Answer: B



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27. The basic unit of nucleic acid is

- A. Pentose sugar
- B. Nucleoid
- C. Nucleoside

D. Nucleotide.

Answer: D



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28. Which one is found only in RNA and not in DNA ?

A. Cytosine

B. Adenine

C. Uracil

D. Guanine.

Answer: C



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29. Which is distributed more widely in a cell?

A. DNA

B. RNA

C. Chloroplasts

D. Sphareosomes.

Answer: B



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30. Starch is polymer of

A. Fructose

B. Glucose

C. Sucrose

D. Maltose.

Answer: B



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31. Glucose is stored as glycogen in

- (a) Pancreas
- (b) Bone
- (c) Kidney
- (d) Liver

A. Pencreas

B. Bone

C. Kindney

D. Liver.

Answer: D



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32. Glycogen is related to

A. Glucose

B. Starch

C. Ribose sugar

D. Lactose.

Answer: B



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33. In DNA, adenine pairs with

A. Guanine

B. Thymine

C. Cytosine

D. Uracil.

Answer: B



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34. Iodine test is used to detect

- A. Carbohydrates
- B. Nucleic acids
- C. Lipids
- D. Proteins.

Answer: A



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35. Which of the following states the similarity between DNA and RNA, :

- A. Polymers of nucleotides
- B. Similar pyrimidines
- C. Double strands

D. Sililar sugars.

Answer: A



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36. During in vitro synthesis of DNA, a researcher used 2', 3'-dideoxy cytidine triphosphate as raw nucelotide in place of 2' -deoxy cytidine.

What would be the consequence?

A. Nirenberg

B. Watson and Crick

C. Khorana

D. Kornberg.

Answer: D



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37. The helical structure of DNA was discovered by :

- A. Kornberg
- B. Nirenberg
- C. Watson and Crick
- D. Holley and nirenberg.

Answer: C



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38. Cellulose is

- A. Monosaccharide
- B. Polysaccharide
- C. Lipid
- D. Disaccharide.

Answer: B



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39. Cellulose is

- A. Hexosan polysaccharide
- B. Pentosan polysaccharide
- C. Heptopolysaccharide
- D. Heteropolysaccharide.

Answer: A



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40. The double strand helix structure of DNA was proposed by

- A. Kornberg

B. Nirenberg

C. Wastson and Crick

D. Wilkins and Franklin.

Answer: C



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41. Name two scientists who were awarded Nobel Prize for deciphering DNA structure.

A. RNA is single stranded

B. DNA is double stranded

C. DNA is genetic meterial

D. DNA guides mRNA synthesis.

Answer: B



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42. Draw a well labelled diagram of a DNA helix.

A. 200 Å...

B. 100 Å...

C. 20 Å...

D. 50 Å...

Answer: C



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43. Simple strong protein that coagulates upon heating but remains soluble in dilute salt solution is correctly exemplified by

A. Keratin

B. Collagen

C. Haemoglobin

D. Glutelin/Globulin.

Answer: D



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44. The *RNA* which takes part in the synthesis of proteins is:

A. DNA

B. Carbohydrates

C. Fat

D. Protein.

Answer: D



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45. Inulin occurs in the root of

- A. Mango
- B. Dahlia
- C. Wheat
- D. Sugarcane.

Answer: B



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46. The bond present between two nucleotides is known as

- A. Covalent bond
- B. Hydrogen bond
- C. Phosphodiester bond
- D. high energy phosphate bond.

Answer: C



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47. DNA is composed of repeating units of

- A. Ribonucleosides
- B. Deoxyribonucleosides
- C. Ribonucleotides
- D. Deoxyribonucleotides.

Answer: D



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48. The number of hydrogen bonds formed between adenine and thymine and that formed between guanine and cytosine are respectively

A. 2 ,3

B. 3 ,2

C. 1 ,2

D. 4, 1

Answer: B



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49. The two strands of DNA are held together by bond :

A. Nitrogen

B. Oxygen

C. Hydrogen

D. Carbon.

Answer: C



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50. Glycogen is a homopolymer made up of

- A. Galactose
- B. Glucose
- C. Fructose
- D. Sucrose.

Answer: B



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51. DNA was discovered by

- A. Altmann
- B. Fleming
- C. Miescher

D. Koch.

Answer: C



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52. In AGST of DNA hydrogen bonds and base pairings occur between

A. A - U, C - G

B. A - C, G - T

C. A - G, C - T

D. A - T, C - G

Answer: D



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53. DNA does not occur in

A. Nucleus

B. Ribosomes

C. Mitochondria

D. Plastids.

Answer: B



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54. Enzyme catalysis optical or geometrical rearrangement of atomic groupings without altering molecular weight or number of atoms is

A. Ligase

B. Isomerase

C. Oxidoreductase

D. Hydrolase.

Answer: B



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55. Lactic dehydrogenase (LDH) that takes part in cataysis of pyruvate

→ lactate is an example of

A. Isoenzyme

B. Zymogen

C. Coenzyme

D. Apoenzyme.

Answer: A



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56. Enzyme funtional at pH-2 is

A. Trypsin

B. Pepsin

C. Lipase

D. Ptyalin.

Answer: B



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57. The enzyme purified and crystallised for the first time was

A. Urease

B. Insulin

C. Diastase

D. Zymase.

Answer: A



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58. Enzymes are different from catalysts in

- A. Being peoteinaceous
- B. Not used up in reaction
- C. Funxtional at high temperature
- D. Having high rate of diffusion

Answer: A



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59. Assertion : The protein part of the enzyme is called apoenzyme and non-protein part of the enzyme is called co-factor.

Reason : Zinc is a co-factor for the proteoilytic enzyme carboxypeptidase.

- A. Prosthetic group
- B. Apoenzyme
- C. Holoenzyme

D. Zymogen.

Answer: B



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60. Enzymes, vitamins and hormones are common in

- A. Being proteinaceous
- B. Being synthesised in the body of organisms
- C. Enhancing oxidative metabolism
- D. Regulating metabolism.

Answer: D



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61. Enzymes are basically or All enzymes contain

A. Nucleic acids

B. Proteins

C. Fats

D. Vitamins.

Answer: B



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62. Coenzymes FMN and FAD are derived from vitamin

A. C

B. B_6

C. B_1

D. B_2 .

Answer: D



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63. Template theory of enzyme action is supported by

- A. Enzymes speed up reaction
- B. Enzymes occur in living beings and speed up certain reactions
- C. Enzymes determine the direction of reaction
- D. Compounds similar to substrate inhibit enzyme activity.

Answer: D



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64. Combination of apoenzyme and coenzyme produces

- A. Prosthetic group
- B. Holoenzyme
- C. Enzyme-Substrate complex

D. Enzyme-product complex.

Answer: B

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65. Blocking enzyme action through blocking its active sites is

- (a) Allosteric inhibition
- (b) Feedback inhibition
- (c) Competitive inhibition
- (d) Non-competitive inhibition

A. Allosteric inhibition

B. Feedback inhibition

C. Competitive inhibition

D. Non-competitive inhibition.

Answer: C

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66. Enzymes functional in cells are called

- A. Endoenzymes
- B. Exoenzymes
- C. Apoenzymes
- D. Isoenzymes.

Answer: A



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67. Enzymes having slightly different molecular structure but performing similar activity are

- A. Homoenzymes
- B. Isoenzymes

C. Apoenzymes

D. Coenzymes.

Answer: B



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68. Which is not trait of enzymes ?

A. Proteinaceous nature

B. Specific in nature

C. Speed up rate of biochemical reaction

D. Used up in reaction.

Answer: D



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69. ELISA is used to

- A. Separate viral RNA
- B. Purify proteins
- C. Isolate DNA sequences
- D. Identify specific proteins.

Answer: D



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70. In a cell , digestive enzymes mostly occur in

- A. Ribosomes
- B. Lysosomes
- C. Mitochondria
- D. Plastids.

Answer: B



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71. Chemical reaction require energy for

A. Oxidation

B. Entropy

C. Activation

D. Enthalpy.

Answer: C



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72. A plant proteinase is

(a) papain

(b) Trypsin

(c) Pepsin

(d) Urease

A. papain

B. Trypsin

C. Pepsin

D. Urease.

Answer: A



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73. Specificity of protein in enzyme action depends upon

A. (a) Active sites

B. (b) Linear sequence of amino acids

C. (c) K_m constant

D. (d) Turn over number

Answer: B



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74. One of the following is without coenzyme activity

A. Vitamin E

B. Thiamine

C. Biotin

D. Riboflavin.

Answer: A



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75. Enzyme complex involved in alcoholic fermentation is

A. Lipase

B. Invertase

C. Zymase

D. Amylase.

Answer: C



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76. Which of the following has coenzyme activity ?

A. Nicotinamide

B. Purine

C. Pyrimidine

D. Both B and C.

Answer: A



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77. Which is not correct ?

- A. All enzymes are biocatalysts
- B. All proteins are enzymes
- C. All enzymes are proteins
- D. All enzymes are thermolabile.

Answer: B



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78. Malonate is inhibited by succinate dehydrogenase. This is a type of

- A. Malonate
- B. Pyruvate
- C. Glycolate
- D. Phosphoglycerate.

Answer: A



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79. Essential amino acid is:

- A. Leucine
- B. Lysine
- C. Methionine
- D. Alanine.

Answer: D



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80. Semi-indispensable amino acids are

- A. Arginine

B. Valine

C. Lysine

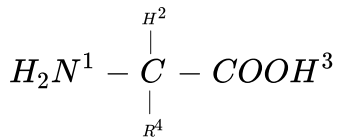
D. Leucine.

Answer: A



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81. Which of the two groups of following formula involved in peptide linkage between different amino acids ?



A. 2 and 3

B. 1 and 4

C. 1 and 3

D. 2 and 4.

Answer: C



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82. Single letter symbol F is used for the amino acid

A. Phenylalanine (Phe)

B. Proline (Pro)

C. Tryptophan (Try)

D. Methionine (Met).

Answer: A



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83. A riboside is :

A. Base + Phosphate

B. Ribose + Phosphate

C. Ribose + Phosphate + Base

D. Ribose + Base.

Answer: D



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84. A nucleotide is formed of

A. Sugar + phosphate

B. Base + Sugar + Phosphate

C. Base + Sugar -OH

D. (Base + sugar + Phosphate)_n.

Answer: B



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85. A nucleoside is formed of

- A. Pentose sugar, phosphate and nitrogen base
- B. Phosphate and nitrogen base
- C. Pentose sugar and phosphate
- D. Pentose sugar and nitrogen base.

Answer: D



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86. The four elements that make up 99% of all elements found in a living system are

- (a) CHOS
- (b) CHOP
- (c) CHON
- (d) CNOP

A. CHOS

B. CHOP

C. CHON

D. CNOP.

Answer: C



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87. The abundant elements in living beings is

A. Oxygen

B. Nitrogen

C. Carbonic acid and bicarbonate

D. Hydrogen.

Answer: A



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88. Decreasing order concentration of minerals inside cell is

A. Ca -K - Na

B. K - Ca - Na

C. k - Na - Ca

D. Na - K - Ca.

Answer: C



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89. Most abundant component of cell is

A. Protein

B. Water

C. Cellulose

D. Lipid.

Answer: B



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90. Glucose is

A. Pyranose pentose sugar

B. Furanose pentose sugar

C. Ketose hexose sugar.

D. Aldose hexose sugar.

Answer: D



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91. Which is not a lipid ?

- (a) Wax/lecithin
- (b) Sterol/cholesterol
- (c) Glycerol/maltose
- (d) Lecithin/Ghee

A. Wax/lecithin

B. Streol/cholesterol

C. Glycerol/maltose

D. Lecithin/Ghee.

Answer: C



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92. A sulphur containing amino acid is

A. Methionine

B. Cystine

C. Cysteine

D. All the above.

Answer: D



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93. An acidic amino acid is

A. Lysine

B. Glutamate

C. Aspartate

D. Both B and C.

Answer: D



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94. A nucleoside differs from a nucleotide . It lacks the

- A. Sugar
- B. Nitrogen base
- C. Phosphate
- D. Phosphate and sugar.

Answer: C



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95. maximum iron occurs in

- A. RBC
- B. WBC
- C. Bone cells
- D. Protein.

Answer: A

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96. Which metal ion is a constituent of chloro- phyll

A. Mg

B. Mn

C. Zn

D. Fe.

Answer: A

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97. Blood clotting requires

A. Na^+

B. K^+

C. Ca^{2+}

D. Mg^{2+}

Answer: C



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98. Calcium is required for

A. muscle contraction

B. Blood clotting

C. Bone formation

D. All the above.

Answer: D



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99. Principle organic constituent of a living being in order of relative abundance is

- A. Water
- B. Protein
- C. Lipid
- D. DNA.

Answer: B



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100. The most diverse chemicals in a living organism are

- A. Polysaccharides
- B. Lipids
- C. Proteins
- D. Sugars.

Answer: C



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101. Nitrogen bases of DNA are

- A. ATUC
- B. UTGC
- C. ATGC
- D. AUGC.

Answer: C



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102. Nitrogen is an important constituent of

- A. Lipids

- B. Carbohydrates
- C. Polyphosphates
- D. Proteins.

Answer: D



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103. An enzyme/protein is formed by chemically bonding together

- A. Lipases
- B. Amino acids
- C. Carbohydrates
- D. CO_2

Answer: B



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104. Which one contains four pyrimidine bases?

- A. GATCAATGC
- B. GCUAGACAA
- C. UAGCGGUAA
- D. TGCCTAACG.

Answer: A



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105. Cellulose occurs in

- A. Tunicates
- B. Cell membrane
- C. Cell wall
- D. Both A and C

Answer: D



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106. Nucleotides/nucleic acids occur in

- (a) Ribosomes
- (b) Mitochondria
- (c) DNA, RNA, chloroplasts and nucleus
- (d) All the above

A. Ribosomes

B. Mitochondria

C. DNA,RNA, chloroplasts and nucleus

D. All the above.

Answer: D



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107. Functional proteins is

- (a) Enzyme
- (b) Collagen
- (c) ossein
- (d) Vitamin

A. Enzyme

B. Collagen

C. ossein

D. Vitamin.

Answer: A



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108. Insulin (bovine) has 51 amino acids in A and B polypeptides. The polypeptide A possesses amino acids

- (a) 31

(b) 21

(c) 20

(d) 30

A. 31

B. 21

C. 20

D. 30

Answer: B



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109. Variability found in DNA is due to

A. Sugars

B. Nitrogen bases

C. Phosphates

D. Glycosidic bonds.

Answer: B



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110. What is unique to DNA alone

- A. Denaturation and renaturation
- B. Polymer complex
- C. Replication
- D. Resistance to temperature changes.

Answer: C



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111. DNA occurs in

- A. Nucleus
- B. Choroplast
- C. Mitochondrion
- D. All the above.

Answer: D

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112. Double hydrogen bond occurs in DNA between

- A. Adenine and thymine
- B. uracil and thymine
- C. Adenine and guanine
- D. Thymine and cytosine.

Answer: A

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113. Casein contained in milk is

- A. Fat
- B. Carbohydrates
- C. Protein
- D. Bacterium.

Answer: C



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114. Plant cell wall mainly consists of

- A. Cellulose
- B. Protein
- C. Starch

D. None of the above.

Answer: A



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115. Content of nucleic acids in protoplasm is

A. 0.35

B. 0.29

C. 0.1

D. 0.02

Answer: D



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116. Which one is absent in protein ?

(a) C

(b) N

(c) P

(d) S

A. C

B. N

C. P

D. S.

Answer: C



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117. One of the following is not a carbohydrate

A. Maltose

B. Pepsin

C. Cellulose

D. Ascorbic acid.

Answer: B



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118. Which one of the following is not protein?

A. Myosin

B. Actin

C. Albumin

D. Haematin.

Answer: D



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119. Oval shaped and eccentric starch particles are found in

- A. potato
- B. Wheat
- C. Rice
- D. Maize.

Answer: A



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120. Maximum amount of cellulose occurs in

- A. Cotton
- B. Coir
- C. Hemp
- D. Flax.

Answer: A



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121. An enzyme brings about

- A. Decrease in reaction time
- B. Increase in reaction time
- C. Increase in activation energy
- D. Reduction in activation energy.

Answer: D



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122. Enzymes as they exist inside the cell are

- A. Solid

B. Crystals

C. Solution

D. Colloid.

Answer: D



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123. Feedback inhibition of an enzyme is influenced by

A. Enzyme

B. External factors

C. End product

D. Substrate.

Answer: C



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124. Hydrolysis of starch occurs with the help of

- A. Sucrase
- B. Amylase
- C. Peptidase
- D. Lipase.

Answer: B



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125. A coenzyme is

- A. Organic non-proteinaceous group that is essential for enzyme activity
- B. Organic or inorganic group that is essential for enzyme activity
- C. Same enzyme found in different organs or tissues

D. One that shares function of another enzyme.

Answer: A



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126. Enzymes are polymers of

A. Fatty acids

B. Amino acids

C. Hexose sugar

D. Inorganic phosphate.

Answer: B



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127. Coenzyme is

- A. Often a vitamin
- B. Always an inorganic compound
- C. Always a protein
- D. Often a metal.

Answer: A

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128. Many enzymes are secreted in inactive form to protect

- A. Cell proteins
- B. Mitochondria
- C. Cell membrane
- D. Cell DNA.

Answer: A

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129. Which one value is required for enzyme action ?

- A. Low K_m
- B. High K_m
- C. Low K_i
- D. High K_i .

Answer: C



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130. Ribozyme is

- A. RNA with enzyme activity
- B. RNA without sugar
- C. RNA without phosphate

D. RNA with extra phosphate.

Answer: A



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131. Which is true about enzymes ?

- A. All enzymes are not proteins
- B. All enzymes are vitamins
- C. All enzymes are proteins
- D. All proteins are enzymes.

Answer: A



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132. Which is not true of enzymes ?

- A. They act at specific pH
- B. They are made of proteins
- C. Enzymes are most active at maximum temperature
- D. They are most active at optimum temperature.

Answer: C

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133. Which is not true about inorganic catalysts and enzymes?

- A. They are specific
- B. Inorganic catalysts require specific factors not needed by enzymes
- C. They are sensitive pH
- D. They speed up the rate of chemical reaction.

Answer: B

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134. Key and lock hypothesis of enzyme action was given by

- A. Fischer
- B. Koshland
- C. Buchner
- D. Kuhene.

Answer: A



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135. Temperature range for maximum functioning of enzymes is

- A. $40^{\circ} - 65^{\circ} C$
- B. $30^{\circ} - 45^{\circ} C$
- C. $20^{\circ} - 30^{\circ} C$

D. $15^{\circ} - 25^{\circ} C$

Answer: B

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136. An example of feedback inhibition is

- A. Allosteric inhibition of hexokinase by glucose 6-phosphate
- B. Cyanide action on cytochrome
- C. Sulpha drug on folic acid synthesis in bacteria
- D. Reaction between succinic dehydrogenase and succinic acid.

Answer: A

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137. The ratio of the enzyme to substrate molecule can be as high as

A. 1 : 100,000

B. 1 : 50,000

C. 1 : 10,000

D. 1 : 1,000.

Answer: A



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138. Enzyme hexokinase is inhibited by excess glucose 6-P. It is

A. Competitive inhibitor

B. Feed-back allosteric inhibition

C. Positive feed-back.

D.

Answer: B



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139. Enzymes (Biocatalysts) were discovered accidentally in yeast cell extract by a biochemist for which he was awarded Nobel Prize was

- A. Summer
- B. Kuhne
- C. Buchner
- D. Pasteur.

Answer: C



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140. Vitamin B_2 is component of coenzyme

- A. Pyridoxal phosphate
- B. TPP
- C. NAD

D. FMN/FAD.

Answer: D



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141. K_m value of enzyme is substrate concentration at

A. $1/4V_{\max}$

B. $2V_{\max}$

C. $1/2V_{\max}$

D. $4V_{\max}$

Answer: C



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142. Part of enzyme which combines with non-protein part to form functional enzymes is

- A. Apoenzyme
- B. Coenzymes
- C. Prosthetic group
- D. None of the above.

Answer: A



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143. Who got Nobel Prize in 1978 for working on enzymes ?

- A. Koshland
- B. Arber and Nathans
- C. Nass and Nass
- D. H.G. Khorana.

Answer: B



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144. No cell can live without

A. Chloroplasts

B. Proteins

C. Enzymes

D. Phytochrome.

Answer: C



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145. Enzyme amylase belongs to

A. Transferase

B. Hydrolases

C. isomerases

D. Oxidoreductases.

Answer: B



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146. Hexokinase ($\text{Glucose} + \text{ATP} \rightarrow \text{Glucose 6-P} + \text{ADP}$) belongs to the category

A. Transferase

B. Lysases

C. Oxidoreductases

D. Transaminase.

Answer: A



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147. Which enzyme is concerned with transfer of electrons?

- A. Desmolase
- B. Hydrolase
- C. Dehydrogenase
- D. Transaminase.

Answer: C



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148. Cholera patients are provided with transfer of electrons ?

- A. NaCl is component of blood, maintains RBCs and helps dissolve proteins
- B. Na^+ is required for water transport across plasma membrane
- C. Cl^- is essential component of blood plasma

D. Cl⁻ helps form HCl in stomach.

Answer: B



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149. On hydrolysis a nucleoside would not yield

A. Purine

B. Pyrimidine

C. Pentose sugar

D. Phosphoric acid.

Answer: D



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150. ~ P in ATP represents

- A. Two bonds with high energy
- B. Two moles of phosphorus
- C. Three atoms of high energy phosphate
- D. None of the above.

Answer: A

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151. Most common monosaccharides found in nucleus are

- A. Trioses
- B. Tetroses
- C. Pentoses
- D. Hexoses.

Answer: C

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152. Amino acids synthesised in our body are

- A. Non-essential
- B. Essential
- C. Non-proteinaceous
- D. Deaminated.

Answer: B



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153. Which one is made of a single ring of atoms ?

- A. Guanine
- B. Adenine
- C. Thymine

D. Glycine.

Answer: C



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154. ATP = ADP + P hypothesis was given by Lipman in

A. 1940

B. 1950

C. 1960

D. 1970

Answer: A



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155. Lecithin is a

A. Steroid

B. Glycolipid

C. Carbohydrates

D. Phospholipid.

Answer: D

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156. Which amino acid has no asymmetric carbon atom ?

A. Histidine

B. Threonine

C. Phenylalanine

D. Glycine.

Answer: D

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157. A unit composed of a sugar and base linked by β glycosidic bond is known as a

- A. Purine
- B. Glycoside
- C. Nucleoside
- D. Nucleotide.

Answer: C



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158. In water, the angle between the atoms of Hydrogen and one atom of Oxygen is

- A. 180°
- B. 104.5°

C. 106.5°

D. 154.8°

Answer: B



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159. Lactose is composed of

A. Glucose + Fructose

B. Glucose + Glucose

C. Glucose + Galactose

D. Fructose + Fructose.

Answer: C



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160. Nitrogen is a component of

- A. Proteins
- B. Carbohydrates
- C. Lipid
- D. Polyphosphate.

Answer: A



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161. Protoplasm is formed of

- A. O,P, minerals
- B. H,C, Iron
- C. O, N, Iron
- D. O,C,H,N.

Answer: D



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162. Carbohydrate used in translocation in angiosperms is

- A. Ribose
- B. Glucose
- C. Sucrose
- D. Fructose.

Answer: C



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163. Which of the following pair is monosaccharide ?

- A. Glucose and Fructose

B. Glucose and Sucrose

C. Ribose and maltose

D. Ribose and Sucrose.

Answer: A



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164. Which one consists of essential amino acids ?

A. Tryptophan and Glutamic acid

B. Lysine and Phenylalanine

C. Leucine and Glycine

D. Valine and Histidine.

Answer: B



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165. Which one of the following amino acids is an essential part of human diet?

- A. Oleic acid
- B. Linoleic acid
- C. Stearic acid
- D. palmitic acid.

Answer: B



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166. Which is not nucleotide component ?

- A. Thymine
- B. Guanine
- C. Lysine
- D. Adenine.

Answer: C



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167. Nickel is component of

- A. PEP carboxylase
- B. Rubisco
- C. Urease
- D. Nitrate reductase.

Answer: C



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168. Energy currency/coin of cell is

- A. ATP

B. NAD

C. ADP

D. GDP.

Answer: A



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169. Content of unsaturated fatty acids linolenic acid is highest in

A. Sunflower oil

B. Cotton seed oil

C. Groundnut oil

D. Coconut oil.

Answer: A



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170. Q. Arachidonic acids is

- A. a) Non-essential fatty acid
- B. b) Saturated fatty acid
- C. c) Monounsaturated fatty acid
- D. d) Polyunsaturated fatty acid.

Answer: D



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171. Number of essential amino acids in human is

- A. 14
- B. 10
- C. 9
- D. 6

Answer: C

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172. In which of the following all are poly-saccharides ?

A. Glycogen, sucrose and maltose

B. Sucrose, glucose and fructose

C. Maltose , lactose and fructose

D. Glycogen, cellulose and starch.

Answer: D

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173. Which one yields protein on hydrolysis ?

A. Fatty acid

B. Nucleic acid

C. Amino acid

D. None of the above.

Answer: D



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174. Which of the following is polymerised to form proteins?

A. Amino acids

B. Muramic acid

C. Monosaccharide

D. All the above.

Answer: A



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175. Which one of the following constitutes natural silk ?

A. Phosphorus

B. Nitrogen

C. Potassium

D. Magnesium.

Answer: B



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176. Which of the following is a fibrous joint ?

A. Collagen

B. Globulin

C. Haemoglobin

D. Hordein.

Answer: A



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177. Ester linkages occur in

- A. Nucleic acids
- B. Lipids
- C. Carbohydrates
- D. Proteins.

Answer: B



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178. Maximum amount of RNA is found in

- A. Cytoplasm

B. Nucleous

C. Ribosomes

D. Chlorophasts.

Answer: C



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179. Polymer of α -D glucose is

A. Glycogen

B. Cellulose

C. Inulin

D. Callose.

Answer: A



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180. Choose the correct statement with respect hereditary material

- A. DNA is hereditary material
- B. RNA is hereditary material
- C. DNA is hereditary material but where it is absent RNA can function as hereditary material
- D. Both DNA and RNA are hereditary materials.

Answer: C



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181. Joining of repeating units to form a macromolecule is called

- A. Polymerisation
- B. Aggregation
- C. Polymorphism

D. Condensation.

Answer: A

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182. Cellulose is made of

- A. Unbranched chain of glucose molecules linked by α -1,6 glycosidic bonds
- B. Unbranched chain of glucose molecules linked by β -1,4 glycosidic bonds
- C. Branched chain of glucose molecules having α -1,6 glycosidic bonds at the site of branching
- D. Branched chain of glucose molecules with α -1,6 glycosidic bonds in the straight chain and β -1,4 linked bonds at the site of branching .

Answer: B



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183. Enormous diversity of protein molecules is due to

- A. Sequence of amino acids
- B. R- groups of amino acids
- C. Amino groups of amino acids
- D. Peptide bonds.

Answer: A



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184. DNA differs from RNA in having

- A. Cytosine but no guanine
- B. Thymine but no uracil
- C. Uracil but no thymine

D. Thymine but no cytosine.

Answer: B



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185. Which one is correct base pairing for DNA molecule ?

A. Cytosine-Uracil

B. Thymine - Guanine

C. Adenine - Thymine

D. Thymine - Uracil.

Answer: C



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186. RNA contains

- A. Hexose sugar
- B. Dextrose sugar
- C. Ribose sugar
- D. Deoxyribose sugar.

Answer: C

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187. Which of the following is a purine ?

- A. Cytosine
- B. Guanine
- C. Thymine
- D. Uracil.

Answer: B

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188. The stored food material found in muscles is

- A. Protein
- B. Glycogen
- C. Lipid
- D. Phosphogen.

Answer: B



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189. Nucleotide constituents/nitrogen bases of RNA are

- A. AGCU
- B. TCXU
- C. AGCT

D. CTAU.

Answer: A



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190. Base pairs present in one helix of DNA in a B DNA are

A. 12

B. 11

C. 10

D. 9

Answer: C



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191. Excess of ATP inhibits which enzyme

A. Phosphofructokinase

B. Hexokinase

C. Pyruvic decarboxylase

D. Aldolase.

Answer: A



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192. Enzymes are sensitive to

A. Cold

B. Cell wall

C. Heat

D. Pressure.

Answer: C



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193. The enzyme that converts starch into maltose is called

- A. Protease
- B. Amylase
- C. Lactase
- D. Maltase.

Answer: B



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194. Which enzyme is most abundantly found?

- A. Catalase
- B. RuBisCo
- C. Nitrogenase

D. Invertase.

Answer: B



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195. Holoenzyme is a/an

- A. Protein moiety of enzyme
- B. Non-protein moiety of enzyme
- C. Complete enzyme
- D. Inactive enzyme.

Answer: C



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196. [A] : The energy derived from enzyme-sub-strate interaction , is called energy of formation .

[R] : Free energy is the major source of energy used by enzymes to lower the activation energies of reactions .

A. Activation energy

B. Binding energy

C. Constant energy

D. Variable energy.

Answer: B



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197. Induced fit theory of enzyme action was proposed by

A. Koshland

B. Fischer

C. Hershet and Chase

D. Sumner.

Answer: A



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198. Which one is disaccharide ?

A. Glucose

B. Cellulose

C. Maltose

D. Ribose.

Answer: C



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199. Phospholipids are

- A. Amphibolic
- B. Amphipathic
- C. Hydrophobic
- D. Hydrophilic.

Answer: B



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200. Steroid is

- A. Cholesterol
- B. Thyroxine
- C. Vitamin A
- D. Fatty acid ester.

Answer: A



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201. Phosphorus is a constituent of:

- A. Carbohydrate
- B. Protein
- C. Fat
- D. Nucleotide.

Answer: D



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202. Number of fatty acid residues present in one molecule of fat is

- A. 4

B. 3

C. 2

D. 1

Answer: B



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203. ATP is a

A. Nucleotide

B. Nucleoside

C. Purine base

D. Nucleosome.

Answer: A



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204. Essential amino acid is:

- A. Serine
- B. Phenylalanine
- C. Aspartic acid
- D. Tyrosine.

Answer: B



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205. Which amino acid is required for haemoglobin

- A. Glu
- B. Val
- C. Ser
- D. All the above.

Answer: D



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206. A triose sugar is

- A. Fructose
- B. Glucose
- C. Deoxyribose
- D. Glyceraldehyde.

Answer: D



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207. Which is not correct ?

- A. (a) Na^+ ions help retain water

B. (b) Na^+ ions help conduct nerve impulse

C. (c) Na^+ ions help in transport of substances across membranes

D. (d) NaCl is component of blood

Answer: C



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208. The most abundant intracellular cation is :

A. Na^+

B. K^+

C. Ca^{2+}

D. Chlorine.

Answer: B



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209. Which one of the following can supply energy ?

A. MALT

B. GALT

C. AMP

D. UTP.

Answer: D



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210. Coiling of B DNA duplex is

A. Left hand

B. Right handed

C. Parallel

D. All the above.

Answer: B



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211. DNA resembles RNA as both have

- A. Polymers of nucleotides
- B. Similar sugar
- C. Similar pyrimidine bases
- D. Ability to replicate.

Answer: A



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212. A protein conjugated to carbohydrates is

- A. Lecithoprotein

B. Glycoprotein

C. lipoprotein

D. Metalloprotein.

Answer: B



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213. Nucleic acids occur in

A. Viruses only

B. Bacteria only

C. Mammals only

D. All forms of life.

Answer: D



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214. Which one is phosphoprotein ?

A. Ferritin

B. Casein

C. mucin

D. Albumin

Answer: B



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215. Number of amino acids in adrenocorticotrophic hormone is

A. 19

B. 29

C. 39

D. 49

Answer: C



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216. Ultraviolet light absorbed by nucleic acid is

- A. 26 nm
- B. 75 nm
- C. 160 nm
- D. 1500 nm.

Answer: C



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217. Cellulose is a homopolymer of

- A. Fructose

B. Mannose

C. Galatose

D. Glucose.

Answer: D



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218. Enzymes enhance the rate of reaction by

A. Combining with product

B. Forming reactant - product complex

C. Changing equilibrium of reaction

D. Lowering activation energy.

Answer: D



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219. Nomenclature of enzyme consists of

- A. First substrate name and then reaction name
- B. First reaction name and then product name
- C. Only product name.
- D. Only reaction name.

Answer: A



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220. Endoenzymes generally act at

- A. Acidic pH
- B. Alkaline pH
- C. neutral pH
- D. Any pH.

Answer: C



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221. Non-protein organic component of enzyme is

- A. Apoenzyme
- B. Holoenzyme
- C. Coenzyme
- D. Isoenzymes.

Answer: C



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222. Enzyme activity is facilitated through

- A. Reduction in activation energy

B. Increase in activation energy

C. Altering pH

D. Altering temperature

Answer: A



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223. Optimum pH for enzyme trypsin is

A. 5.9

B. 4.6

C. 8.5

D. 7

Answer: C



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224. Km value is related to

- A. Chromatography
- B. ES complex
- C. ABO complex
- D. Morphometry.

Answer: B



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225. In competitive inhibition the

- A. Inhibitor binds to active site
- B. Feed back operates
- C. Allosteric mechanism is involved
- D. All the above.

Answer: A



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226. Most of hydrolytic reactions are

- A. Exothermic
- B. Endothermic
- C. Irreversible
- D. Reversible .

Answer: D



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227. Little quantity influences the rate of chemical reaction

- A. Hormone

B. Enzyme

C. Catalyst

D. Alkaloids.

Answer: B



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228. The form in which sugar is present in sugarcane

A. maltose

B. Sucrose

C. Fructose

D. Glucose.

Answer: B



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229. A basic amino acid is

- A. Leucine
- B. Methionine
- C. Aspartic acid
- D. Lysine.

Answer: D



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230. Calmodulin is

- A. Carotene binding protein
- B. Cadmiun binding protein
- C. Calcium binding protein
- D. Chlorohyll binding protein.

Answer: C



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231. Peptide bond is formed between two amino acids through

- A. Addition of water
- B. Loss of water
- C. Decarboxylation
- D. Deamination.

Answer: B



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232. Glycosidic linkage in maltose is

- A. $\alpha 4 \rightarrow 1$

B. $\beta 4 \rightarrow 1$

C. $\alpha 1 \rightarrow 4$

D. $\beta 1 \rightarrow 4$

Answer: C

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233. Calcium gives rigidity to bones and teeth alongwith

A. Oxalate

B. Pectate

C. Carbonate

D. Phosphate.

Answer: D

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234. Maximum number of nitrogen atoms occur in

- A. Guanine
- B. Uric acid
- C. Urea
- D. Ammonia.

Answer: A



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235. A hexose sugar is

- A. Arabinose
- B. Galactose
- C. Mannose
- D. Both B and C.

Answer: D



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236. Fehling's solution can detect

A. Glucose

B. Sucrose

C. Starch

D. Fat.

Answer: A



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237. Number of oxygen atoms in lipid molecules is always $\hat{e}!$. As compared to number of carbon atoms

A. Less

B. More

C. Equal

D. Double.

Answer: A



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238. Which group has the same distinct class

A. Sterols,Waxes, Amino acids, starch

B. Lipids,RNA,Glucine,Cellulose

C. DNA,RNA, Nucleosides, Nucleotides

D. Ribose, Surose, Glucose, Maltose

Answer: D



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239. Number of amino acids present in protoplasm is

A. 20

B. 12

C. 10

D. 8

Answer: A



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240. Which one contains maximum energy ?

A. Cyclic AMP

B. ADP

C. AMP

D. Adenosine.

Answer: B



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241. which of the following is the most essential fatty acid ?

A. Arachidonic acid

B. Linolenic acid

C. Linoleic acid

D. Oleic acid.

Answer: C



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242. Which one would be components of proteins ?

A. CHOP

B. CHO

C. CHON

D. CONS.

Answer: C



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243. DNA strands have

A. Quaternary structure

B. Same polarity

C. Antiparallel polarity

D. Disulphide bonds.

Answer: C



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244. Length of one turn of DNA is

- A. 34 Å...
- B. 3.4 Å...
- C. 0.34 Å...
- D. 20 Å...

Answer: A



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245. Macromolecule most common in plant cell walls is

- A. Glycogen
- B. Starch
- C. Protein

D. Cellulose

Answer: D



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246. Keratin is the major constituent of

A. Brain

B. Hair and skin

C. Blood

D. Bones and teeth.

Answer: B



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247. Most abundant organic compound on earth is

A. Cellulose

B. Protein

C. Lipids

D. Steroids.

Answer: A



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248. Pectin is

A. Waste product

B. Excretory product

C. Phytolectin

D. Secretory product.

Answer: D



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249. Macro molecule chitin is

- A. Sulphur containing polysaccharide
- B. Phosphorus containing polysaccharide
- C. Nitrogen containing polysaccharide
- D. Simple polysaccharide.

Answer: C



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250. Water is ideal material for disposal of excess solar energy because

- A. Water is easily available and its specific heat is high
- B. Water evaporates from leaf surface and its latent heat is high
- C. Water is general solvent

D. Upward movement of water creates a difference in water potential.

Answer: B



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251. An example of conjugated protein is :

A. Haemoglobin/Flavoprotein

B. Globulin

C. Albumin

D. Peptone.

Answer: A



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252. Insulin produced by β -cells in our body contains amino acids

A. 50

B. 51

C. 52

D. 53

Answer: B

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253. Chitin is polymer of

A. N-acetyl muramic acid

B. N- acetyl gluconic acid

C. N-acetyl glucosamine

D. None of the above.

Answer: C

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254. Two fatty acid monomers are joined by

- A. Hydrogen bond
- B. Peptide bond
- C. Phosphodiester bond
- D. Ester bond.

Answer: D



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255. NAD^+ and $NADP^+$ resemble each other in ability to

- A. Give out a proton
- B. Take up two electrons at one time
- C. Take up two hydrogen atoms

D. Take up one electron at one time.

Answer: B



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256. Two polypeptide chains are joined by hydrogen bonds to produce

A. α -helix

B. Tertiary structure

C. β -pleated sheet

D. All the above.

Answer: C



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257. Mucilage present in 'Bhindi' (Okra, Lady's Finger) contains

- A. Mannose
- B. Galactose
- C. Lactose
- D. Both A and B.

Answer: D

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258. Unsaturated fats are made saturated by

- A. Polymerisation
- B. Hydrogenation
- C. Dehydrogenation
- D. Hybridisation.

Answer: B

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259. Non reducing sugars have

- A. Free-CHO group
- B. Free -CO group
- C. Both A and B
- D. Neither A nor B.

Answer: D



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260. The sweetest sugar is

- A. Fructose
- B. Glucose
- C. Mannose

D. Lactose.

Answer: A



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261. A trisaccharide is

A. Galactose

B. Maltose

C. Raffinose

D. Mannose.

Answer: C



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262. Unsaturated fatty acids have

- (a) high melting point
- (b) one or more double bonds
- (c) oleic acid
- (d) palmitic acid

A. Oleic acid

B. High melting point

C. One or more double bonds

D. palmitic acid.

Answer: C



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263. Differences in amino acids are due to their

A. Carboxyl group

B. Amino group

C. Peptide bond

D. R-Group.

Answer: D



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264. A fatty acid not synthesised in human body is

A. Cholesterol

B. Linoleic acid

C. Glycerol

D. None of the above.

Answer: B



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265. Which one is a disaccharide ?

- A. Sucrose
- B. Glucose
- C. Fructose
- D. Galactose.

Answer: A



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266. Adenine, pentose sugar and phosphate interact to form

- A. Adenosine
- B. Adenylic acid
- C. Adenosine diphosphate
- D. Adenine triphosphate.

Answer: B

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267. Cane sugar on hydrolysis gives

- A. Glucose + Fructose
- B. Glucose + Glucose
- C. Glucose + Galactose
- D. Glucose + Maltose.

Answer: A

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268. Water is important for the functioning body as

- A. It releases energy

B. Provides H^+ ions

C. Killed microorganisms

D. It is a very good solvent.

Answer: D



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269. Inulin found in plant cell is a

A. Protein

B. Polysaccharide

C. Lipid

D. Vitamin

Answer: B



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270. ATP is

- A. Adenosine D-ribose triphosphate
- B. Adenosine L-ribose triphosphate
- C. Adenine D-ribose triphosphate
- D. Adenine L-ribose triphosphate.

Answer: C



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271. Starch is

- A. $(C_6H_5O_6)_n$
- B. $(C_6H_{10}O_5)_n$
- C. $(C_{12}H_{22}O_{11})_n$
- D. $(C_{12}H_{24}O_{11})_n$

Answer: B

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272. A peptide chain attains secondary structure through the formation of

- A. Peptide bonds
- B. Intrachain ionic bonds
- C. Intrachain hydrogen bonds
- D. Intrachain disulphide bonds.

Answer: C

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273. Sugar Present in DNA is

A. Heptose

B. Hexose

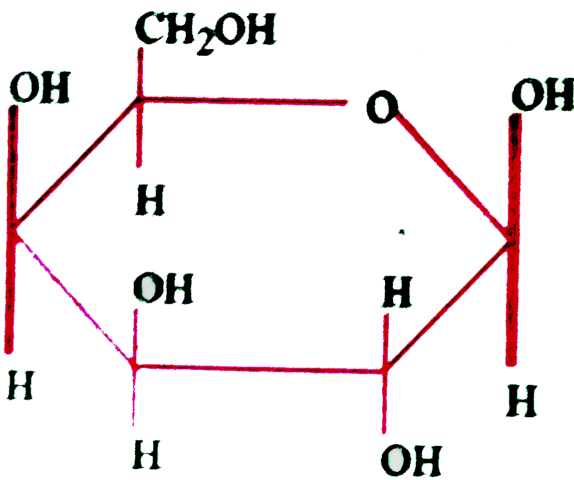
C. Tetrose

D. Pentose.

Answer: D

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274. The following molecule is



A. Galactose

B. Glucose

C. Fructose

D. Lactose

Answer: A



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275. $CH_3(CH_2)_7 = CH(CH_2)_7COOH$ is for mula of .

A. Linolenic acid

B. Oxalosuccinate

C. Oleic acid

D. α -Ketroglutarate.

Answer: C



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276. Ribose is differentiable from deoxyribose in having

- A. Two extra oxygen
- B. No oxygen
- C. Hydroxyl group
- D. One extra hydrogen.

Answer: C



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277. In ATP high energy bond occurs between

- A. Phosphate and phosphate
- B. Ribose and Phosphate
- C. Adenine and phosphate
- D. Adenine and ribose.

Answer: A



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278. A reagent added to a sample to a shows change of colour from green to yellow. It is due to presence of reducing sugar. The test is

- A. Elisa test for detecting AIDS
- B. Benedict's test for detecting glucosuria
- C. Fihling's test for detecting hyperglycemia
- D. Ninhydrin test for detecting glucosidic linkage.

Answer: B



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279. In a dead or killed animal, glycogen of liver disintegrates enzymatically to form

- A. lactose
- B. Fructose
- C. Glucose
- D. None of the above.

Answer: D

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280. Which enzyme is concerned with transfer of electrons ?

- A. Hydrolyses
- B. Hydrogenases
- C. Proteases
- D. Transaminases.

Answer: B

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281. The enzymes that join together two molecules by forming new covalent bonds are:

- A. Ligases
- B. Transferases
- C. Oxidoreductoses
- D. lyases.

Answer: A



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282. A non-protein organic part attached firmly by covalent linkage to apoenzyme is

- A. Cofactor
- B. Coenzymes

C. Prosthetic group

D. Activator.

Answer: C



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283. The inhibitor which does not resemble the substrate in structure and binds to the enzyme at site other than the active site is called

A. Competitive inhibitor

B. Non-competitive inhibitor

C. Catalytic inhibitor

D. Allosteric modulator/inhibitor

Answer: D



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284. Who coined the term zymase for enzymes in yeast

A. Buchner

B. Kuhne

C. Pasteur

D. Sumner.

Answer: A



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285. One molecule of an enzyme is needed to convert 2 molecules of a substrate into products in 5 minutes. 10 molecules of the enzyme and 25 molecules of the substrate are mixed in a test tube. After 10 minutes the test tube will be having.

A. Products only

B. Products and enzymes molecules

C. Products and 5 unreacted substance molecules

D. Products, enzyme molecules and 5 molecules of substrate.

Answer: B



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286. Vitamins nicotinamide can be synthesised in our body from

A. Fructose

B. Lactose

C. Tyrosine

D. Tryptophan.

Answer: D



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287. Fehling test is positive for

- A. Lactose
- B. Sucrose
- C. Glucose
- D. Fructose.

Answer: B



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288. Which one is a reducing sugar ?

- A. Galactose
- B. Gluconic acid
- C. Sucrose
- D. β -methyl galactoside.

Answer: A



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289. Lipids are insoluble in water, because lipids molecules are

- A. Hydrophilic
- B. hydrophobic
- C. Zwitter ions
- D. Neutal.

Answer: B



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290. pentoses are insoluble in water as they are

- A. Oilgosaccharides

B. Disaccharides

C. Monosacchrides

D. Polysaccharides.

Answer: C



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291. Collagen is

A. Carbohydrate

B. Lipid

C. Fibrous or sclero-protein

D. Globular protein.

Answer: C



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292. Osmotically inactive chief stored material in animal body is

- A. Protein
- B. Phosphogen
- C. Lipid
- D. Glycogen.

Answer: D



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293. The major role of minor elements inside living organisms is to act as

- A. Cofactors of enzymes
- B. Binder of cell structure
- C. Constituent of hormones
- D. Building blocks of amino acids.

Answer: A



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294. Which element is located at the centre of the porphyrin ring in chlorophyll :-

A. Potassium

B. Manganese

C. Magnesium

D. Calcium.

Answer: C



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295. The major portion of the dry weight of plants comprised of

- A. Calcium, magnesium and sulphur
- B. Carbon, hydrogen and oxygen
- C. Carbon, nitrogen and hydrogen
- D. Nitrogen, phosphorus and potassium.

Answer: B

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296. Which of the following is essential for nitrogen fixation in legumes

- A. Copper
- B. Zinc
- C. Manganese
- D. Molybdenum.

Answer: D

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297. In green plants, Boron assists

- A. Sugar transport
- B. Activation of enzymes
- C. Functioning as enzyme cofactor
- D. Photosynthesis.

Answer: A



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298. Plants with zinc deficiency show reduced biosynthesis of

- A. Cytokinin
- B. Auxin
- C. Abscisic acid

D. Ethylene.

Answer: B



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299. In which of the following form is glucose stored in liver

- (a) Starch
- (b) Glycogen
- (c) Cellulose
- (d) Sucrose

A. Cellulose

B. Starch

C. Glycogen

D. Sucrose.

Answer: C



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300. Adenosine monophosphate is a

- A. Nucleoside of DNA
- B. Nucleotide of DNA
- C. Nucleoside RNA
- D. Nucleotide of RNA.

Answer: D



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301. In the organism, energy is stored in the form of

- A. ATP
- B. ADP
- C. AMP

D. All the above.

Answer: A



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302. Nucleotide is composed of

A. Sugar

B. Phosphoric acid

C. Nitrogenous base

D. All the above.

Answer: D



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303. An example of competitive inhibition for an enzyme is the inhibition of :

- A. Succinic dehydrogenase by malonic acid
- B. Cytochrome oxidase by cyanide
- C. Hexokinase by glucose 6-Phosphate
- D. Carbonic anhydrase by carbon dioxide.

Answer: A



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304. Silk is formed of

- A. Fibroin
- B. Collagen
- C. Elastin
- D. myosin.

Answer: A



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305. Protein found in egg white is

- A. Albumin
- B. Casein
- C. Globulin
- D. Vitelline.

Answer: A



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306. Which one will not yield glucose

- A. Cellulose

B. Maltose

C. Glycogen

D. Hemicellulose.

Answer: D



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307. Which is not a macromolecule

A. Cellulose

B. DNA

C. Glycogen

D. None of the above.

Answer: b



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308. Chitin occurs in

- A. Crab
- B. prawn
- C. Agaricus
- D. All the above.

Answer: D



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309. Which one is a saturated fatty acid ?

- A. Arachidonic acid
- B. Stearic acid
- C. Oleic acid
- D. Linoleic acid.

Answer: B



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310. Thymine is

- A. Amino acid
- B. Purine
- C. Pyrimidine
- D. Fatty acid.

Answer: C



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311. Which is wrong

- A. Uracil is pyrimidine

- B. Glycine contains sulphur
- C. Sucrose is disaccharide
- D. Cellulose is polysaccharide.

Answer: B

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312. Match and choose the true option

- A. NaCl-Inorganic micromolecule
- B. H_2O -Organic micromolecule
- C. Starch-Organic micromolecule
- D. Glucose-inorganic micromolecule

Answer: A

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313. An essential amino acid is

- A. Tryptophan
- B. Glycine
- C. Glutamine
- D. Tyrosine.

Answer: A



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314. The enzyme needed in biological system for joining two molecules is called

- A. Lyase
- B. Diastase
- C. Polymerase
- D. Hydrolase.

Answer: C



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315. Starch and cellulose are

- A. Branched polysaccharides
- B. Storage products
- C. Components of plant cell walls
- D. Composed of glucose.

Answer: D



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316. Scleroproteins are

- A. Glycoproteins

B. Keratins

C. Collagens

D. Both B and C.

Answer: B



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317. Triglyceride consists of

A. Three fatty acids + two glycerol

B. Three fatty acids + one glycerol

C. One fatty acid + one glycerol

D. One fatty acid + three glycerol.

Answer: B



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318. Tertiary structure of proteins having amino acid cysteine is achieved through

- A. Ionic bonds
- B. Covalent bonds
- C. Disulphide bonds
- D. Hydrogen bonds.

Answer: C



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319. Mathematical explanation for enzyme action on substrate was provided by

- A. Vant Hoff
- B. hans Krebs
- C. Michaelis and menten

D. Calvin.

Answer: C



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320. Which one is not a fibrillar protein

A. Keratin

B. Collagen

C. Albumin

D. Elastin.

Answer: C



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321. Energy is stored in the liver and muscles in the form of

Or

In the muscles carbohydrates are stored in the form of

A. Glucose

B. Sucrose

C. Starch

D. Glycogen.

Answer: D



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322. DNA and RNA contain four bases each. Which of the following bases is not present in RNA ?

A. Uracil

B. Thymine

C. Guanine

D. Cytosine.

Answer: B



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323. Amino acid having sulphur is

A. Cysteine

B. Lysine

C. Leucine

D. Isoleucine.

Answer: A



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324. Protein denaturation is caused by disruption of

- A. Peptide bonds
- B. Three -dimensional configuration
- C. Tertiary and secondary structure
- D. Both B and C.

Answer: D



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325. K_m value is dependent upon

- A. Temperature
- B. Substrate concentration
- C. Enzyme concentration
- D. All the above.

Answer: B



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326. Non-proteinaceous part of enzyme is

- A. Cofactor
- B. Coenzyme
- C. Prosthetic group
- D. All the above.

Answer: D



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327. Amino acid present in histones are

- A. Arginine and histidine

B. Arginine and lysine

C. Lysine and histidine

D. Arginine and cytosine.

Answer: B



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328. Which is a non-reducing sugar?

A. Glucose

B. Sucrose

C. Galactose

D. Mannose.

Answer: B



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329. Chitin occurs in

- A. Bacteria
- B. Algae
- C. Fungi
- D. Yeast.

Answer: C



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330. Moisturising gel is extracted from

- A. *Saraca indica*
- B. *Aloe vera*
- C. *Acacia viciifolia*
- D. None of the above.

Answer: B



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331. Structure of protein insulin was first studied by

- A. Sanger
- B. Stanley
- C. Nicholson
- D. Watson.

Answer: A



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332. Sugar Present in DNA is

- A. Dextrose

B. Levulose

C. Glucose

D. Deoxyribose.

Answer: D



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333. Which one is simple protein

A. Albumin

B. Nucleoprotein

C. Lipoprotein

D. Glycoprotein.

Answer: A



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334. Which is not a hydrolase?

- A. Protease
- B. Dehydrogenase
- C. Sucrase
- D. Amylase.

Answer: B



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335. ATP was discovered by

- A. Lipmann
- B. Lohmann
- C. Blackman
- D. Bowman.

Answer: B



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336. Match the column and find out the correct combination

ColumnI

ColumnII

- | | |
|----------------------|---|
| <i>a</i> Starch | <i>p</i> Protein synthesis |
| <i>b</i> Haemoglobin | <i>q</i> Sex hormone |
| <i>c</i> RNA | <i>r</i> Storage product |
| <i>d</i> Steroid | <i>s</i> <i>Transp</i> or <i>tofgases</i> |

- A. a-r, b-p, c-s, d-q
- B. a-r, b-s, c-p, d-q
- C. a-s, b-r, c-p, d-q
- D. a-r, b-s, c-q, d-p.

Answer: B



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337. Chemical nature of cellulose is

- A. Disaccharide
- B. Polypeptide
- C. Polysaccharide
- D. Polynucleotide.

Answer: C



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338. Kuhne

- A. Discovered enzymes
- B. Coined the term enzyme
- C. Coined the term gene
- D. Discovered parathyroid.

Answer: B



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339. Which one is not a coenzyme ?

A. NAD^+

B. NADPH

C. FAD

D. ATP.

Answer: A



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340. Starch is stored in Potato tuber as

A. Storage product should be insoluble

- B. Strach is synthesised in tubers
- C. Tubers repire slowly
- D. Translocated sucrose is polymerised here.

Answer: B



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341. Water molecules are joined by

- A. Amino bonding
- B. Covalent bonding
- C. Hydrogen bonding
- D. Van der waals force.

Answer: A



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342. Number of carbon in ring of deoxyribose sugar is :

A. Three

B. Four

C. Five

D. Six.

Answer: B



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343. Bond present between two residues of carbohydrate is

A. Amide

B. Phosphodiester

C. Glycosidic

D. Hydrogen bond.

Answer: C



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344. The similarity between bacterial and eukaryotic DNA is that both are

- A. Circular
- B. Single stranded
- C. Double stranded
- D. All the above.

Answer: C



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345. In ATP high energy bond is present

- A. Nucleoside and phosphate group

B. Sugar and phosphate group

C. Base and phosphate group

D. None of the above.

Answer: D



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346. Which enzyme shows greatest substrate specificity

A. Nuclease

B. Trypsin

C. Pepsin

D. Sucrase.

Answer: D



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347. End product of action of enzyme cellulase over cellulose is

- A. Glucose
- B. Sucrose
- C. Starch
- D. Glycogen

Answer: A



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348. Maltose is formed of

- A. α -glucopyranose and β -fructopyranose
- B. α -glucopyranose and α -glucopyranose
- C. β -glucopyranose and β -glucopyranose
- D. α -galactopyranose and α -galactopyranose.

Answer: B



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349. Glucose is

- A. Cane sugar
- B. Grape sugar
- C. Malt sugar
- D. Triose sugar

Answer: B



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350. Protein present in Wheat grain is

- A. Glutenin

B. Albumin

C. Zymase

D. Glycogen.

Answer: A



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351. Match the words in column I with the phrases in column II. Choose the answer, which gives the correct combination of the alphabets of the columns.

Column -I

(A) Magnesium

(B) Sulphur

(C) Iodine

(D) Manganese

Column-II

(1) Found in some amino acids

(2) Not important of plants

(3) Structural component of chlorophyll

(4) Component of sugar

(5) Required for enzyme activity

A. a-r, b-s, c-q, d-p

B. a-r, b-p, c-q, d-s

C. a-r, b-p, c-q, d-t

D. a-s, b-r, c-p, d-t

Answer: C



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352. Sucrose is

A. Monosaccharide

B. Disaccharides

C. Trisaccharide

D. Polysaccharides.

Answer: B



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353. Phosphorus is always present in

- A. protein
- B. DNA
- C. RNA
- D. Both B and C.

Answer: D

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354. Telomerase is an enzyme which is a

- A. Simple protein
- B. RNA
- C. Ribonucleoprotein
- D. Repetitive DNA.

Answer: C

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355. The catalytic efficiency of two different enzymes can be compared by the

- A. Product
- B. Molecular size
- C. K_m value
- D. pH optimum value.

Answer: C



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356. An important step in the manufacture of pulp of paper industry from the woody tissues of plants is the

- A. Preparation of pure cellulose by removing lignin
- B. Treatment of weed with chemicals for breakdown of cellulose

C. Removal of oil by suitable chemicals

D. Removal of water from wood by prolonged heating at 50°C .

Answer: A



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357. Which one of the following statements regarding enzyme inhibition is correct?

A. Competitive inhibition occurs when a substrate competes with enzyme for binding to inhibition protein

B. Competitive inhibition occurs when the substrate and the inhibition compete for active site on the enzyme

C. Non-competitive inhibition of an enzyme can be overcome by adding large amount of substrate.

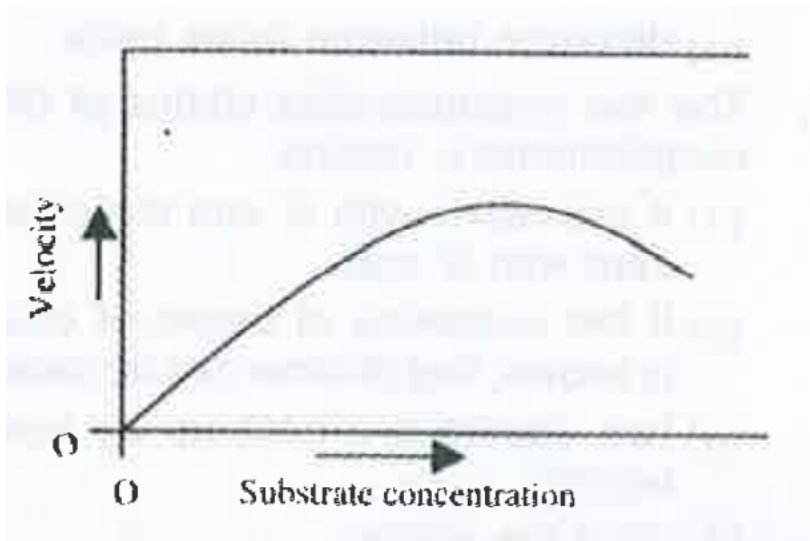
D. Non-competitive inhibition often bind to the enzyme irreversibly.

Answer: B

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358. What does the graph indicate ?

The graph given below shows the effect of substrate concentration on the rate of reaction of the enzyme green-gram-phosphatase.



- A. Formation of enzyme substrate complex
- B. Increase of pH at higher concentration of substrate
- C. presence of enzyme inhibitor

D. Rate of reaction is directly proportional to substrate concentration.

Answer: C



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359. Heparin is synthesised in

A. Kidney

B. Salivary glands

C. Pancreas

D. Liver.

Answer: D



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360. Which of the following amino acid is optically inactive?

- A. Glycine
- B. Leucine
- C. Isoleucine
- D. Valine.

Answer: A

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361. Which is incorrect about coenzyme ?

- A. Every coenzyme is a cofactor and every cofactor is a coenzyme
- B. Every coenzyme is a cofactor and every cofactor is not a coenzyme
- C. Most of the coenzymes are nucleotides and are composed of vitamins
- D. Coenzymes are the active constituents of enzymes.

Answer: A



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362. Calcium is required for functioning of enzyme

- A. Fumarase
- B. ATP-ase
- C. Succinate thiokinase
- D. Isocitrate dehydrogenase.

Answer: D



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363. Which is protein in nature?

- A. Polyethylene
- B. Cellulose
- C. Terylene

D. Silk and wool.

Answer: D



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364. Natural anticoagulant is

A. Serotonin

B. Digitonin

C. Heparin

D. Erythromycin.

Answer: C



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365. Ribosome

- A. Consists of one large and two small subunits
- B. Contains identical components in prokaryote and eukaryote
- C. is the only site of RNA replication
- D. has two or three major sites to which tRNA can be bound.

Answer: D



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366. An organic substance bound to and enzyme and essential for its activity is called

Or

Non-protein part of an enzyme is known as

- A. Isoenzyme
- B. Coenzyme
- C. Apoenzymes
- D. Holoenzyme.

Answer: B



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367. Richest source of protein is

- A. Wheat
- B. Sago
- C. Soyabean
- D. Rice.

Answer: C



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368. Which set is correctly matched ?

- A. Lysine, Glycine, Thiamine -Amino acids

B. Myosin, Oxytocin, Gastrin-Hormones

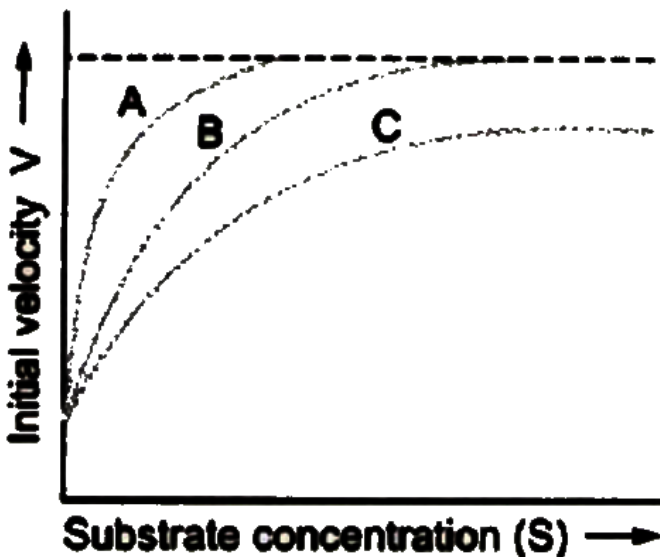
C. Rennin, Helicase, Hyaluronidase-Enzymes

D. Optic nerve, Oculomotor, Vagus -Sensory nerves.

Answer: C

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369. The figure given below shows three velocity substrate concentration curves for an enzyme reaction . What do the curves A , B and C depict respectively ?



A. a-normal enzymes action, b-competitive inhibition,c-noncompetitive inhibition

B. a-enzyme with an allosteric modulator added, b-normal enzyme activity, c-competitive inhibition

C. a-enzyme with an allosteric stimulator,b-competitive inhibition added, c-normal enzyme reaction

D. a-normal enzyme reaction, b-non-competitive inhibition added c- allosteric inhibitor add.

Answer: A



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370. Match the items in colour I with items in column II and choose the correct option.

Column-I

Column-II

(A) Triglyceride

(1) Animal hormones

(B) Membrane lipid

(2) Feathers and leaves

(C) Steroid

(3) Phospholipids

(D) Wax

(4) Fat stored in the form

A. a-4,b-3, c-1, d-2

B. a-2, b-3, c-4, d-1

C. a-3,b-4, c-1, d-2

D. a-4,b-1, c-2, d-3

Answer: A



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371. Allosteric modulation is due to inhibition of coenzyme action by

A. Competitive inhibition

B. Substrate concentration

C. Product of reaction

D. Non-competitive inhibition.

Answer: C

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372. Name the most abundant elements which occur in nucleic acid macromolecules

A. C,H,O,N,S

B. C,O,N,S

C. H,O,P

D. C,H,O,N,P

Answer: D

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373. Pentoses and hexoses are the most common

Or

The simple polyhydroxy ketone molecule containing 3-7 carbons is a

- A. Disaccharide
- B. Monosaccharide
- C. Polysaccharide
- D. Dipeptide

Answer: B



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374. Phospholipids are important components of cell membranes because they



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375. Wax is

- A. Ester
- B. Cholesterol
- C. Acid
- D. Monohydric alcohol.

Answer: A



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376. Non-protein part of enzyme is called

- A. Prosthetic group
- B. Active site
- C. Cofactor
- D. Catalytic agent.

Answer: C

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377. Match the column :

ColumnI

- a* Biological pigments
- b* Chemical messengers
- c* Important constituent of blood
- d* Four carbon rings

ColumnII

- 1 Sodium chloride
- 2 Steroids
- 3 Prostaglandins
- 4 Terpenes

A. a-2, b-4, c-3, d-1

B. a-2, b-1, c-4, d-3

C. a-3, b-4, c-2, d-1

D. a-4, b-3, c-1, d-2

Answer: D

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378. Given below is the chemical formula of $CH_3(CH_2)_{14} - \overset{O}{\parallel}C - OH$

- A. Palmitic acid
- B. Stearic acid
- C. Glycerol
- D. Galactose.

Answer: A



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379. Which is mismatched ?

- A. Agar-polymer of glucose and sulphur containing carbohydrates
- B. Chitin-Polymer of glycosamine
- C. Lipopolysaccharides-A complex of lipid and polysaccharide
- D. Glycogen -Polymer of glucose.

Answer: A

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380. Which one is water soluble vitamin ?

A. Vitamin A

B. Vitamin B

C. Vitamin D

D. Vitamin E

Answer: B

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381. Select the wrong statement wrt the biomolecules

- A. Majority of enzymes contain a nonprotein part called prosthetic group
- B. Thylakoids are arranged one above the other like stack of coins forming a granum
- C. Building blocks of lipid are amino acids
- D. Cross-over occurs at pachytene stage of meiosis I.

Answer: C



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382. Match the following with correct combination

Column - I

Column - II

A. Triglycerides

1. Galactose

B. Lactose

2. Glycerol

C. RNA

3. Palmitic acid

D. β pleats

4. Uracil

E. Beewax

5. secondary structure

A. a-4, b-1, c-5, d-2, e-3

B. a-5, b-1, c-4, d-2, e-3

C. a-3, b-1, c-4, d-5, e-2

D. a-2, b-1, c-4, d-5, e-3

Answer: D



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383. In a protein, amino acids are linked by

A. Peptide bonds

B. Glycosidic bonds

C. Hydrogen bonds

D. All the above.

Answer: A



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384. NAD is

- A. Nicotinamide adenosine diphosphate
- B. Nicotine adenosine adenosine phosphate
- C. Nicotinamide adenine dinucleotide
- D. None of the above.

Answer: C



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385. $H_2N - \overset{\overset{H}{|}}{C} - COOH$ is general formula of amino acid. Here R stands

is

- A. An amino acid
- B. A carboxylic group
- C. A variable group

D. A hydroxyl group.

Answer: C



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386. Prostaglandin is

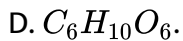
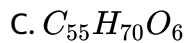
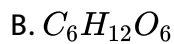
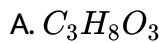
- A. Steroid
- B. Carbohydrate
- C. Amino acid
- D. Fatty acid .

Answer: D



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387. Which one is glucose ?



Answer: B

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388. Silk obtained from silkworm is a

A. Fat

B. Cellulose

C. Protein

D. Carbohydrate.

Answer: C

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389. What is laevorotatory

- A. Fructose
- B. Glucose
- C. Maltose
- D. Sucrose.

Answer: A



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390. Which is not pyrimidine

- A. Guanine
- B. Thymine
- C. Uracil

D. Cytosine.

Answer: A



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391. Which is not a protein ?

A. α -amylase

B. Nitrogenase

C. Histidine kinase

D. Ribozyme.

Answer: D



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392. Which is least harmful

- A. Saturated fat
- B. Oils
- C. Cholesterol
- D. Polyunsaturated fats.

Answer: D

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393. Jojoba (*Simmondsia*) possesses

- A. Triglyceride and wax
- B. Wax
- C. Triglyceride
- D. Sterol.

Answer: B

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394. Digestive enzymes are

- (a) hydrolases
- (b) oxidoreductases
- (c) transferases
- (d) lyases

A. Hydrolases

B. Transferases

C. Oxidoreductases

D. Ligases.

Answer: A



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395. Expand ELISA

- A. Enzyme linked inductive assay
- B. Enzyme linked ion sorbent assay
- C. Enzyme linked immunosorbent assay
- D. None of the above.

Answer: C

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396. IAA and serotonin are derived (formed) from which of the following

- A. Tyrosine
- B. Tryptophan
- C. Phenylalanine
- D. Glycine.

Answer: B

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397. Maximum amount of lipid content occurs in

- A. Chylomicron
- B. VLDL
- C. CDL
- D. HDL.

Answer: A



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398. Which of the following is not a disaccharide

- A. Lactose
- B. Sucrose
- C. Maltose

D. Starch.

Answer: D



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399. Which one is not added in detergents

A. Amylase

B. Protease

C. Peptidase

D. Cellulase.

Answer: C



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400. The length of DNA molecule greatly exceeds the dimensions of the nucleus in eukaryotic cell. How is this DNA accommodated

- A. DNA-ase digestion
- B. Super coiling
- C. Elimination of repetitive DNA
- D. Deletion of non-essential genes.

Answer: B



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401. About 98 percent of the mass of every living organism is composed of just six elements including carbon, hydrogen, nitrogen, oxygen and

- A. S and Mg
- B. Mg and Na
- C. Ca and P

D. P and S.

Answer: D



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402. Amount of energy released during hydrolysis of a high energy bond of ATP is

A. 686000 cal/mol

B. 73000 cal/mol

C. 800 cal/mol

D. 7300 cal/mol.

Answer: D



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403. Which is correct for ADP

- A. One high energy bond
- B. Two high energy bond
- C. Three high energy bonds
- D. None of the above.

Answer: A



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404. Which one is absent in honey ?

- A. Glucose
- B. Lactose
- C. Maltose
- D. Laevulose.

Answer: B



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405. Which one of the following is a polysaccharide?

A. Fructose

B. Glucose

C. Sucrose

D. Cellulose.

Answer: D



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406. Gluconeogenesis is

A. Formation of glycogen

B. Formation of ammonia from glucose

C. Formation of glucose from non-carbohydrate sources

D. Breakdown of glucose.

Answer: C

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407. Read the assertion and reason carefully to mark the correct option out of the option given below:

Assertion: Arachidic acid is an unsaturated fatty acid

Reason: There are present one or more double bonds between carbon atoms in unsaturated fatty acid

A. if both are true with reason being correct explanation

B. both true but reason is not correct explanation

C. assertion true but reason is wrong

D. and both are wrong

Answer: D



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408. Consider the following statements :

(A) Coenzyme or metal ion that is tightly bound to enzyme protein is called prosthetic group.

(B) A complete catalytic active enzyme with its bound prosthetic group is called apoenzyme.

Select the correct option.

A. if both are true with reason being correct explanation

B. both true but reason is not correct explanation

C. assertion true but reason is wrong

D. and both are wrong

Answer: C



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409. Which of the following promotes softening of fruits

- A. Polygalacturonase
- B. Polyethylene glycol
- C. Colchicine
- D. Cellulase.

Answer: A



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410. Which of the following statements is/are not true

- (A) Glycerol is a 3 carbon alcohol with 3 OH groups that
- (B) Waxes are esters formed between a long chain alcohol and saturated fatty acids
- (C) The term protein was coined by Gerardus Johannes Mulder

(D) Agar is an indispensable polysaccharide and it is a complex polymer of glucose and sulphur-containing carbohydrates

A. a and c only

B. d only

C. a and d only

D. a, b and d only

Answer: B



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411. Read the statements

(a) Element important for production thyroxine is iodine

(b) Vitamin B_6 is niacin or nicotinic acid

(c) Fructose is a hexose monosaccharide

(d) Globulin is a conjugate protein

A. a, b, c are correct, d is wrong

B. a, c are correct, b, d are wrong

C. a, b are correct, c, d are wrong

D. a is correct , b, c, d are wrong

Answer: B



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412. Benedict reagent test is conducted to confirm presence of

A. Protein

B. Lipid

C. Starch

D. Reducing sugar.

Answer: D



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413. Study the statements and choose the correct answer

Statement a. Amino acids are amphoteric.

Statement b. All amino acids are necessary for our body.

- A. a and b are correct
- B. a and b are wrong
- C. a is correct, b is wrong
- D. a is wrong, b is correct

Answer: C



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414. Quarternary structure of protein is

- A. Consists of 4 subunits
- B. Is either α or β
- C. Is unrelated to its functions

D. Is dictated by primary structure of individual subunits.

Answer: D

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415. Statement 1- Competitive inhibitor is also called as substrate analogue.

Statement 2- It resembles the enzyme in structure.

- A. if both are true with reason being correct explanation
- B. both true but reason is not correct explanation
- C. assertion true but reason is wrong
- D. and both are wrong

Answer: D

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416. Reduction means

- A. Loss of electrons
- B. Gain of electrons
- C. Gain of protons
- D. Loss of protons and electrons.

Answer: B



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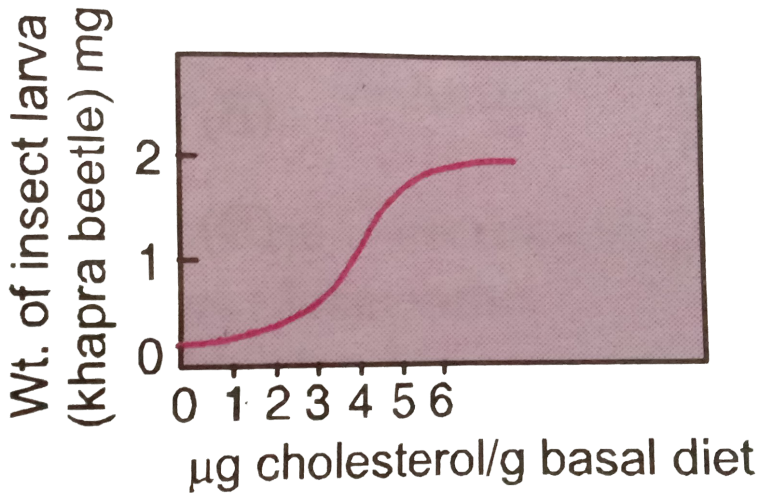
417. Khapra beetle larvae were raised on basal diet to which was added increasing amount of cholesterol. The result is shown in the

accompanying

graph.

It

indicates



- A. Cholesterol is an essential dietary requirement
- B. Growth of beetle is directly proportional to cholesterol concentration
- C. Cholesterol concentration of $2\mu\text{g/g}$ diet is optimum
- D. Growth is inhibited when cholesterol concentration exceeds $2\mu\text{g/g}$ of diet.

Answer: A



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418. A metal ion required for normal functioning of an enzyme is

- A. Holoenzyme
- B. Coenzyme
- C. Cofactor
- D. Prosthetic group.

Answer: C



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419. Select the correct answer from the following statements :

1. Cutin is fatty acid polymer
2. Starch is glucose polymer
3. Sucrose is monosaccharide
4. maltose is polymer of fructose.

A. 1, 2, 3 are correct

B. 1 and 2 are correct

C. 2 and 4 correct

D. 1 and 3 correct.

Answer: B



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420. Select the correct answer from the following for DNA can be

1. A-DNA

2. B-DNA

3. Z-DNA

4. Y-DNA.

A. 1, 2 and 3 correct

B. 1 and 2 are correct

C. 2 and 4 correct

D. 1 and 3 correct.

Answer: A



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421. In which form does the food transported in plants

- A. Fructose
- B. Glucose
- C. Sucrose
- D. Lactose.

Answer: C



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422. Which one is wrongly matched ?

- A. Guanine, adenine-Purines
- B. Thymine, uracil-Pyrimidines
- C. Uracil, cytosine-Pyrimidines

D. Adenine, thymine- Purines.

Answer: D



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423. Carbohydrates are commonly found as starch in plant storage organs. Which of the following five properties of starch (A-E) make it useful as a storage material?

- A. Easily translocated
- B. chemically non-reactive.
- C. easily digested by animals
- D. osmotically inactive
- E. synthesised during photosynthesis

The useful properties are:-

- A. 1,3,5
- B. 1 and 5
- C. 2 and 3

D. 2 and 4.

Answer: D



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424. Organic compound found in most cells is

A. Water

B. Glucose

C. Oxygen

D. Sodium chloride.

Answer: B



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425. The 'lock' and 'key' model of enzyme action illustrates that a particular enzyme molecule

- A. Is destroyed and resynthesised several times
- B. Reacts at the same rate in all conditions
- C. Interacts with specific type of substrate molecule
- D. Forms a permanent enzyme-substrate complex.

Answer: C



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426. The effectiveness of an enzyme is affected least by

- A. Temperature
- B. Concentration of substrate
- C. Concentration of enzyme
- D. Original activation energy of the system.

Answer: D



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427. Ribose sugar occurs in

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

Answer: A



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428. The bond present between $AMP + P_i$ and $ADP + P_i$ are

- A. Phosphoester bonds

B. Phosphoanhydride bonds

C. Phosphodiester bonds

D. Covalent bonds.

Answer: B



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429. Formation of a peptide bond involves

A. Two amino acids

B. Two monosaccharides

C. A condensation reaction

D. Both A and C.

Answer: D



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430. Enzyme catalysing removal of groups and formation of double bond are

- A. Transferase
- B. Ligases
- C. Lyases
- D. Oxidoreductases.

Answer: C



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431. An essential fatty acids is

- A. Palmitic acid
- B. Arachidonic acid
- C. Stearic acid
- D. Arachidic acid.

Answer: B



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432. Holoenzyme is produced by

- A. Combined coenzyme and apoenzyme
- B. Only prosthetic group
- C. Only protein
- D. Only cofactor.

Answer: A



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433. Papain produced from

- A. *Ficus carica*

B. Carica papaya

C. Glycine max

D. Citus reticulata.

Answer: B



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434. Energy is stored in the liver and muscles in the form of

Or

In the muscles carbohydrates are stored in the form of

A. Fat

B. Protein

C. Glycogen

D. Glucose.

Answer: C



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435. A nitrogen base is linked to sugar by a glycosidic bond at carbon number

- A. 1'
- B. 2'
- C. 4'
- D. 5'

Answer: A



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

- A. Thymine

B. Cytosine

C. Uracil

D. Guanine.

Answer: D



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437. In human per cent of body weight of carbohydrates, lipids and proteins respectively is

A. 15,17,7

B. 1,15,17

C. 7,17,15

D. 17,15,7.

Answer: B



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438. Choose the correct non-protein amino acid

- A. Hydroxyproline
- B. Cystine
- C. Gamma-aminobutyric acid
- D. Hydroxylysine.

Answer: C



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439. Which of the following substances yield less than 4 Kcal/mol when its phosphate bond is hydrolysed

- A. ADP
- B. ATP
- C. Creatine phosphate

D. Glucose 6-phosphate.

Answer: D



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440. the haeme - protein complexes which act is oxidising agents are known as

A. Haemoglobin

B. Myoglobin

C. Chlorophyll

D. Cytochrome.

Answer: D



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441. Which is wrongly matched ?

- A. Fungi - chitin
- B. Phospholipid - plasma membrane
- C. Enzyme - lipopolysaccharide
- D. ATP -Nucleotide derivative

Answer: C



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442. An example of non-competitive inhibition is

- A. Succinic dehydrogenase by Malonic acid
- B. Cytochrome oxidase by cyanide
- C. hexokinase by glucose 6-phosphate
- D. Carbonic anhydrase by carbon dioxide

Answer: B



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443. Ribose sugar is not a component of

A. AMP

B. ATP

C. DNA

D. RNA.

Answer: C



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444. Nucleotides contain

A. Purine, sugar and phosphate

B. Purine, pyrimidine and phosphate

C. Pyrimidine, sugar and phosphate

D. Purine, pyrimidine, sugar and phosphate.

Answer: D

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445. Starch is polymer of

A. Glucose

B. Fructose

C. Maltose

D. Sucrose.

Answer: A

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446. Prostaglandins are

- A. Amino acids
- B. Fatty acids
- C. Carbohydrates
- D. Steroids.

Answer: B



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447. Pentadiplandra brazzeana, the source of sweetest protein is found in

- A. Sri Lanka
- B. Africa
- C. Arabia
- D. Australia.

Answer: B



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448. Where can we find major and minor grooves ?

A. Polypeptide

B. RNA

C. DNA

D. chromatin.

Answer: C



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449. Milk sugar is commonly known as

A. Fructose

B. Glucose

C. Lactose

D. Sucrose.

Answer: C



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450. With reference to enzyme , turn over number means

A. Hour

B. Second

C. Minute

D. Day.

Answer: C



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451. The prosthetic group of a conjugated protein classified as a glycoprotein is a :

- A. Lipids
- B. Nucleic acid
- C. Metal ions
- D. Carbohydrate.

Answer: D



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452. Enzymes which catalyse reaction involving change in the structure of a molecule are

- A. Ligases
- B. Isomerases
- C. Hydrolases

D. Transferases.

Answer: B



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453. Optimum temperature is the temperature at which an enzyme

- A. Works at its best
- B. Is not destroyed
- C. Action is reversed
- D. Is inactivated.

Answer: A



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454. Purines are generally abbreviated as

A. R

B. Y

C. C

D. U.

Answer: A



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455. Immunoglobulins are proteins that show a structure

A. Primary

B. Secondary

C. Tertiary

D. Quaternary.

Answer: D



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456. Essential-non-essential amino acid is

- A. Lysine - Leucine
- B. Valine - Tyrosine
- C. Methionine - Threonine
- D. Alanine - Cystine.

Answer: B



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457. Source of turpentine oil is

- A. Bark of Cinchona
- B. Lichen
- C. Gymnospermous wood

D. Algae.

Answer: C



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458. Which one is diaminodicarboxylic amino acid

A. Cystine

B. Cysteine

C. Lysine

D. Aspartic acid.

Answer: A



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459. Which one is a cofactor of carbonic anhydrase ?

A. Fe

B. Zn

C. Cu

D. Mg.

Answer: B

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460. Which one is true for ATP

A. ATP is prosthetic group of an enzyme

B. ATP is a coenzyme

C. ATP is an enzyme

D. ATP is the organic ion of enzyme.

Answer: B

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461. Arrange the steps of catalytic action of an enzyme in order and select the correct option

I. The enzyme releases the products of the reaction and the enzyme is free to bind to another substrate

II. The active site of enzyme is in close proximity of the substrate and breaks the chemical bonds of the substrate

III. The binding of substrate induces the enzyme to alter its shape fitting more tightly around substrate.

VI. The substrate binds to the active site of the enzyme

A. iv,iii,ii,i

B. iii,ii,i,iv

C. iv,ii,i,iii

D. iii,iv,i,ii.

Answer: A



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462. Find out the wrongly matched pair.

- A. Primary metabolite - Ribose
- B. Secondary metabolite - Anthocyanin
- C. protein - insulin
- D. Cellulose - Heteropolymer

Answer: D



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463. Match the columns and choose the correct combination.

Column I

Column II

- | | |
|---------------|----------------|
| a. Sulphur | 1. Chlorophyll |
| b. Zinc | 2. Nitrogenase |
| c. Magnesium | 3. Methionine |
| d. Molybdenum | 4. Auxin |

A. a-1, b-2, c-3, d-4

B. a-3, b-4, c-1, d-2

C. a-3, b-1, c-2, d-4

D. a-2, b-4, c-1, d-3

Answer: B

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464. Amino acid present in histones are

A. Alanine and glycine

B. Serine

C. Lysine and arginine

D. Histidine

Answer: C

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465. The lock and key principle is related to

- A. Dark reaction
- B. Enzyme action
- C. Chemical action
- D. Hormonal action.

Answer: B



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466. An important essential element is necessary in plants for protein synthesis

Or

The most important element associated with protoplasm and proteinaceous materials of plant is

A. Nitrogen

B. Oxygen

C. Sulphur

D. Potassium.

Answer: A

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467. Quaternary structure is present in

A. Histone

B. Haemoglobin

C. Globulin

D. Potassium.

Answer: B

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468. Class of enzymes containing in lysosome

- A. Lyases
- B. Ligases
- C. Hydrolases
- D. Transferases.

Answer: C



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469. Which of the amino acids has hydroxyl in its R-group

- (a) Serine
- (b) Alanine
- (c) Arginine
- (d) Proline

- A. Serine
- B. Alanine
- C. Arginine
- D. Proline.

Answer: A

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470. Formation of peptide and glycosidic bonds involves

- A. Esterification
- B. Hydration
- C. Dehydration
- D. Acidification.

Answer: C

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471. Excess carbohydrates and proteins are stored in body as

- (a) Amino acids
- (b) Fats
- (c) Monosaccharides
- (d) Starch

A. Amino acids

B. Fats

C. Monosaccharides

D. Starch.

Answer: B



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472. All enzymes are not proteins. Which of the following enzyme is not a protein?

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

Answer: B



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473. The amino acid that acts as a carrier of ammonia from skeletal muscle to liver

- (a) Alanine
- (b) Arginine
- (c) Methionine
- (d) Glutamate

A. Alanine

B. Arginine

C. Methionine

D. Glutamate.

Answer: A

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474. Molecules having charged groups of opposite polarity are

A. Zwitter ions

B. Anions

C. Cations

D. Negative ions.

Answer: A

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475. That an enzyme interacts with specific substrate is explained by

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

Answer: C



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476. Three of the following statements about enzyme are correct and one is wrong . Which one is wrong ?

- A. Enzymes are denatured at high temperature but in certain exceptional organisms they are effective even at $80^{\circ} - 90^{\circ} C$
- B. Enzymes require optimum pH for maximal activity.
- C. Most enzymes are proteins but some are lipids.

D. Enzymes are highly specific.

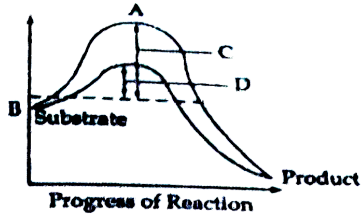
Answer: C



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477. The figure given below shows the conversions of a substrate into product by an enzyme. In which one of the four options (1-4) the

components of reaction labelled as A, B, C and D are identified correctly -



Options

	A	B	C	D
(1)	Transition state	Potential energy	Activation energy without enzyme	Activation energy with enzyme
(2)	Potential energy	Transition state	Activation energy with enzyme	Activation energy without enzyme
(3)	Activation energy with enzyme	Transition state	Activation energy without enzyme	Potential energy
(4)	Potential energy	Transition state	Activation energy with enzyme	Activation energy without enzyme

A. Potential energy, Transition state, Activation energy with enzyme,
Activation energy without enzyme

B. Transition state, Potential energy, Activation energy without
enzyme, Activation energy with enzyme,

C. Potential energy, Transition state, Activation energy with enzyme,

Activation energy without enzyme,

D. Activation energy with enzyme, Transition state, Activation energy

without enzyme, Potential energy.

Answer: B

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478. Pick out lectin from those given below:

A. Gum

B. Diterpene

C. Concanavillin

D. Curcumin

Answer: C

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479. Which is true about enzyme

- A. Apoenzyme =Holoenzyme + Coenzyme
- B. Holoenzyme = Cofactor+ Coenzyme
- C. Coenzyme = Apoenzyme + Holoenzyme
- D. Holoenzyme = Coenzyme - Apoenzyme.

Answer: B



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480. Cerebroside is

- A. Glycolipid
- B. Sterol
- C. Phospholipid

D. Steroid.

Answer: A



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481. According to induces conformation change in enzyme

- A. Substrate induces conformation change in enzyme
- B. Substrate changes its shape after binding
- C. Conformational change takes place in substrate
- D. There is no conformation change in enzyme.

Answer: A



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482. Which is not a protein/non-protein enzyme

A. Trypsin

B. Collagen

C. Rubisco

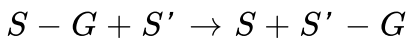
D. N-acetylglucosamine.

Answer: D



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483. Select the type of enzyme involved in the following reaction.



A. Dehydrogenase

B. Transferases

C. Hydrolase

D. Lyase.

Answer: B

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484. Which of the following enzyme has/have haem as a prosthetic group

- (i) Catalase
- (ii) Carboxypeptidase
- (iii) Succinic dehydrogenase
- (iv) Peroxidase

A. (a) i only

B. (b) i and ii

C. (c) iii and iv

D. (d) i and iv

Answer: A

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485. Select the incorrect statement

- A. Amino acids are substituted methanes
- B. Glycerol is trihydroxy propane
- C. Lysine is neutral amino acid
- D. Lecithine is phospholipid.

Answer: C

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486. Select the incorrect statement

- A. Collagen is the most abundant protein in the whole animal world.
- B. Proteins are heteropolymers made of amino acids
- C. Ribozymes are nucleic acids with catalytic power
- D. Proteins, nucleic acids and polysaccharides are the only three types of macromolecules found in living system

Answer: A



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487. An amino acid is

- A. Renin
- B. Pepsin
- C. Cystine
- D. Proline.

Answer: D



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488. Which one is polysaccharide ?

- A. Lactose
- B. Glycogen
- C. Sucrose

D. Maltose.

Answer: B



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489. Structural lipids of cell membrane are

A. Simple lipid

B. Chromolipid

C. Phospholipid

D. Steroid.

Answer: C



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490. Which of the following is an example of a typical homopolysaccharide?

- A. Starch
- B. Lignin
- C. Inulin
- D. Suberin.

Answer: S



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491. Ribose is

- A. Monosaccharide
- B. Disaccharides
- C. Polysaccharide
- D. Heteropolymer.

Answer: A



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492. Which is not true about coenzyme and prosthetic group?

- (a) Both are required for enzyme action
- (b) Both are separated from enzymes
- (c) Both are organic compounds
- (d) Both are not polypeptides

A. Both are required for enzyme action

B. Both are separated from enzymes

C. Both are organic compounds

D. Both are not polypeptides.

Answer: B



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493. At isoelectric point, a protein has

- A. No net charge
- B. Negative charge
- C. Positive charge
- D. Both B and C.

Answer: A



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494. A linear polymeric biomolecule with reducing and non-reducing ends is

- A. RNA
- B. DNA
- C. Amylose
- D. Protein.

Answer: C



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495. Polymer of sucrose is

- A. Cellulose
- B. Starch
- C. Glycogen
- D. Fluka Ficoll.

Answer: D



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496. Nicotine and cocaine are

- A. Peptides

B. Tannins

C. Alkaloids

D. Resin.

Answer: C



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497. Protein quality depends upon

A. Essential amino acids

B. Isoelectric point

C. Coagulability

D. Quarternary structure.

Answer: A



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498. Prostaglandins are

- (a) Simple proteins
- (b) Conjugated proteins
- (c) Saturated fatty acids
- (d) Unsaturated fatty acids

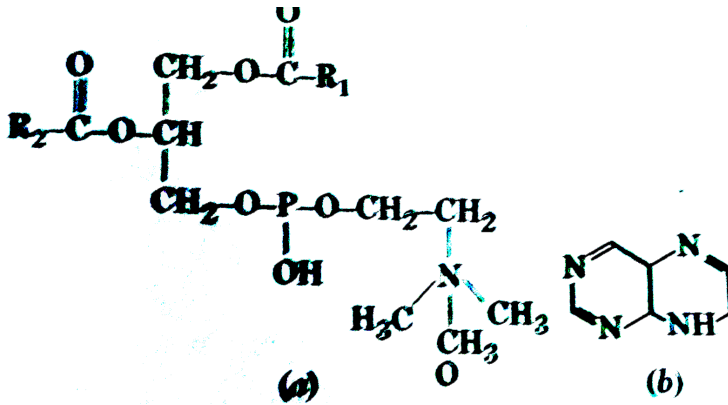
- A. Simple proteins
- B. Conjugated proteins
- C. Saturated fatty acids
- D. Unsaturated fatty acids.

Answer: D



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499. Which is correctly identified along with its function



- (1) b- uracil, a component of DNA
- (2) a- lecithin, a component of cell membrane
- (3) b - adenine a nucleotide that makes up nucleic acid
- (4) a- triglyceride a major source of energy

- A. b- uracil, a component of DNA
- B. a- lecithin, a component of cell membrane
- C. b - adenine a nucleotide that makes up nucleic acid
- D. a- triglyceride a major source of energy.

Answer: B

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Answer: D



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501. Major function of mineral Magnesium is

- A. Formation of bones
- B. Maintenance of acid-base balance
- C. Storing of energy
- D. Activator of enzymes.

Answer: A



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502. Steroids are

- A. Lipids

B. Proteins

C. Vitamins

D. Carbohydrate.

Answer: A



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503. Which of the following sugars cannot split into further groups by hydrolysis ?

A. Glucose

B. Sucrose

C. Lactose

D. Maltose.

Answer: A



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504. An apoenzyme is a

- A. Protein
- B. Amino acid
- C. Vitamin
- D. AGU.

Answer: A



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505. Assertion : Enzymes lower the activation energy of the reactant molecule to make its transition into product easier.

Reason : Enzymes are highly substrate specific

- A. if both are true with reason being correct explanation
- B. both are true but reason is not correct explanation

C. assertion is true but reason is wrong

D. and both are wrong

Answer: B



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506. In a 50 g living tissue, the amount of water would be

A. 15 - 25 g

B. 25 - 30 g

C. 35 - 45 g

D. 70 - 90 g.

Answer: C



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507. Which is present in very little quantity in the body ?

A. K

B. Ca

C. Mg

D. Cu.

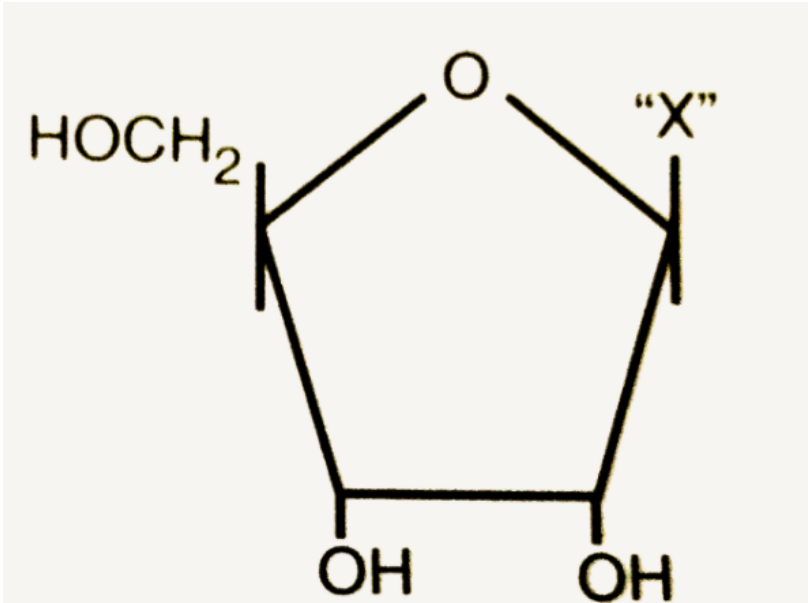
Answer: D



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508. Given below is the diagrammatic representation of one of the categories of small molecular weight organic compounds in the living tissues. Identify the category shown and the one blank component "X" in

it.



A. Cholesterol - Guanine

B. Amino acid - NH_2

C. Nucleotide - Adenine

D. Nucleoside - Uracil.

Answer: D



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509. Which one is the most abundant protein in the animals world?

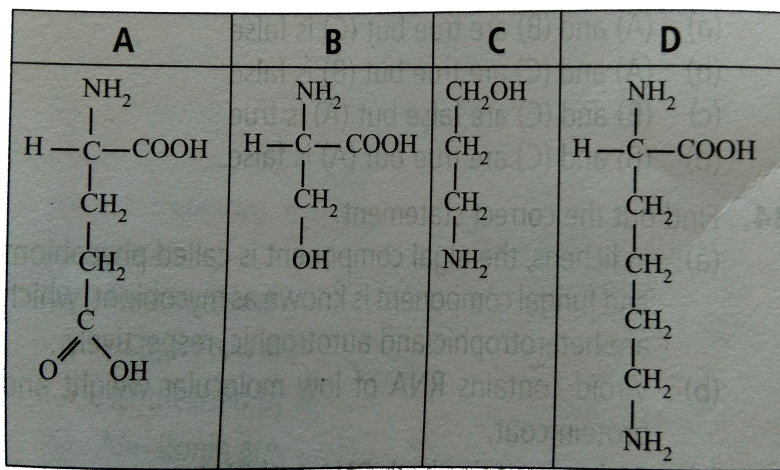
- A. Trypsin
- B. Haemoglobin
- C. Collagen
- D. Insulin.

Answer: C



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510. Which one out of A-D given below correctly represents the structural formula of a basic amino acid ?



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511. Which is not true of enzymes ?

- A. They act on specific substrate
- B. They are made of fat and substrate
- C. They act at specific temperature
- D. They act at specific pH.

Answer: B

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512. Name the polysaccharide which represents the polymeric structure of β -D glucose units.

- A. Starch
- B. Glycogen
- C. Sucrose
- D. Cellulose.

Answer: D



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513. Simple strong protein that coagulates upon heating but remains soluble in dilute salt solution is correctly exemplified by

- A. Globulin

B. Albumin

C. Histone

D. Collagen.

Answer: B



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514. Inulin is a

A. Lipid

B. Carbohydrate

C. Protein

D. Nucleic acid.

Answer: B



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515. Higher animals cannot synthesize few fatty acids which are very essential for their growth and development. These fatty acids are typically

- (a) Saturated
- (b) Branched
- (c) Unsaturated
- (d) Cyclic

- A. Saturated
- B. Branched
- C. Unsaturated
- D. Cyclic.

Answer: C



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516. Thermolabile protein part of enzyme is

- (a) Apoenzyme

(b) Proenzyme

(c) Holoenzyme

(d) Isoenzyme

A. Apoenzyme

B. Proenzyme

C. Holoenzyme

D. Isoenzyme.

Answer: A



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517. Which is used for staining lipids?

(a) Rhodamine

(b) Iodine

(c) Ethidium bromide

(d) Sudan Red

A. Rhodamine

B. Iodine

C. Ethidium bromide

D. Sudan Red.

Answer: D

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518. Which biomolecule is correctly characterised

A. Lecithin - Phosphorylated glyceride found in cell membrane

B. Palmitic Acid - An unsaturated fatty acid with 18 carbon atoms

C. Adenylic Acid - Adenosine with glucose phosphate molecule

D. Alanine Amino Acid - Contains an amino group and an acid group
anywhere in the molecule.

Answer: A



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519. Inhibition of acetylcholine by DFP (Diisopropyl-fluorophosphate) is an example of

- A. Competitive inhibition
- B. Non - competitive inhibition
- C. Non - competitive irreversible inhibition
- D. Allosteric inhibition.

Answer: C



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520. Nitrogen base + Pentose sugar + Phosphate group is

- A. Nucleoside
- B. Nucleic acid

C. Pyrimidine

D. Nucleotide.

Answer: D



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521. Which fatty acid is liquid at room temperature

A. Palmitic acid

B. Stearic acid

C. Arachidic acid

D. Linoleic acid.

Answer: D



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522. Chief energy food of cell is

- A. Nucleotides
- B. Proteins
- C. Carbohydrates
- D. Vaculose.

Answer: C



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523. Which of the following is a secondary metabolit as well as a drug ?

- A. Vinblastine
- B. Abrin
- C. Ricin
- D. Carotenoids

Answer: A

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524. Match the following and choose the correct combination from the option given

Column I

(Organic Compound)

A. Fatty acid

B. Phospholipid

C. Aromatic amino acid

D. Acidic amino

Column II

(Example)

1. Glutamic acid

2. Tryptophan

3. Lecithin

4. Palmitic acid

A. a -1, b -2, c -3, d -4

B. a -4, b -3, c -2, d -1

C. a -2, b -3, c -4, d -1

D. a -3, b -4, c -1, d -2

Answer: B

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525. Choose the correct combination

ColumnI	ColumnII
<i>a</i> Carbohydrates	1 Trypsin
<i>b</i> Protein	2 Cholesterol
<i>c</i> Nucleic acid	3 Inulin
<i>d</i> Lipid	4 Adenylic acid

A. 1 - b, 2 - d, 3 - a, 4 - c

B. 1 - b, 2 - c, 3 - d, 4 - a

C. 1 - c, 2 - d, 3 - a, 4 - b

D. 1 - d, 2 - a, 3 - b, 4 - c

Answer: A



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526. Which is a structural polysaccharide ?

A. Glycogen

B. Chitin

C. Keratin

D. Pectin.

Answer: B



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527. Reducing sugars are

A. Glycogen

B. Sucrose

C. Lactose

D. All the above.

Answer: C



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528. The molecules that are well recognized as biocatalysts in addition to enzymes are

- A. Polysaccharides
- B. RNAs
- C. Fatty acids
- D. None of the above.

Answer: B



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529. Which of the following is a homopolysaccharide?

- A. Pectin
- B. Heparin
- C. hyaluronic acid
- D. Inulin.

Answer: D

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530. Select the option having all the correctly matched pairs.

A. Alkaloids (i) Carotenoids , Anthocyanin

B. Pigments (ii) Vinblastin , curcumin

C. Drugs (iii) Morphine , Codeine

A. a - ii, b - iii, c - i

B. a - i, b - iii, c - ii

C. a - i, b - ii, c - iii

D. a - iii, b - i, c - ii

Answer: D

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531. Cholesterol belongs to which of the following groups?

A. Steroid

B. Neutral fats

C. Waxes

D. Phospholipid.

Answer: A



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532. The alpha helices and beta sheets are the example of which level of protein organization

A. (a) Primary structure

B. (b) Secondary structure

C. (c) Tertiary structure

D. (d) Quaternary structure.

Answer: B

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533. The anomeric carbon in D(+) glucose is

A. C_1

B. C_2

C. C_4

D. None of the above.

Answer: A

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534. Histones are present in

A. Cell membrane

B. Lysosomes

C. Nucleosomes

D. Sphaerosomes.

Answer: C



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535. Which is a carbohydrate having β -repeated units

A. (a) Pectin

B. (b) Lignin

C. (c) Starch

D. (d) Cellulose.

Answer: D



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536. The food is stored in plants in the form of

- A. Starch
- B. Maltose
- C. Inulin
- D. Lactose.

Answer: A

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537. Which is a coenzyme

- A. Protein
- B. NAD^+
- C. Zinc
- D. Copper.

Answer: B

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538. $NADP^+$ is

- A. An enzyme
- B. part of RNA
- C. A coenzyme
- D. Part of soluble RNA.

Answer: C



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539. Identify the aromatic amino acid from the given option.

- A. Tyrosine
- B. Methionine
- C. Valine

D. Isoleucine.

Answer: A



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540. Identify the aromatic amino acid from the given option.

A. C-O

B. C-C

C. C-N

D. P-O.

Answer: D



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541. DNA strands are joined by

- A. Oxygen bonds
- B. Hydrogen bonds
- C. Carbon bonds
- D. Nitrogen Bonds.

Answer: B

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542. Alanine is

- A. Basic
- B. Mono- amino dicarboxylic
- C. Sulphur containing
- D. Monoamino monocarboxylic.

Answer: D

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543. Which of the following is false with respect to prosthetic groups ?

- A. Proteins
- B. Non - proteins
- C. metal compounds
- D. Tightly bound to enzymes

Answer: A



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544. Which one is wrong about starch

- A. Starch is polymer of alpha-glucose
- B. It has amylose and amylopectin
- C. Amylose is linear with 1, 4-glycosidic linkages

D. Amylopectin is straight chain with 1, 4-glycosidic linkages.

Answer: D



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545. Polysaccharide monomers are linked by

- A. Peptide bonds
- B. Glycosidic bonds
- C. Hydrogen bonds
- D. Phosphodiester bonds.

Answer: B



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546. Which one contains only secondary metabolites

- A. Abrin, cellulose, arginine, tyrosine
- B. Glycine, gums, serine, diterpenes
- C. Carotenoids, phenylalanine, curcumin, rubber
- D. Concanavalin-A, morphine, cocaine, vinblastin.

Answer: D

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547. Assertion : All proteinaceous enzymes have a three dimensional structure

Reason : The secondary structure of protein is according to amino acids present inside the polypeptide

- A. if both are true with reason being correct explanation
- B. both are true but reason is not explanation
- C. assertion true but reason is wrong
- D. and both are wrong

Answer: B

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548. Assertion : Glutamine contains amide group

Reason : Isoelectric point of glutamine is 7.

- A. if both are true with reason being correct explanation
- B. both are true but reason is not explanation
- C. assertion true but reason is wrong
- D. and both are wrong

Answer: C

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549. A phosphoglyceride is always made up of

- A. A saturated or unsaturated fatty acid esterified to a phosphate group which is also attached to a glycerol molecule
- B. Only a saturated fatty acid esterified to a glycerol molecule to which a phosphate group is also attached
- C. Only an unsaturated fatty acid esterified to a glycerol molecule to which a phosphate group is also attached
- D. A saturated or unsaturated fatty acid esterified to a glycerol molecule to which a phosphate group is also attached.

Answer: D

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550. Transition state structure of the substrate formed during an enzymatic reaction is

- A. Permanent and stable

- B. Transient but stable
- C. Permanent but unstable
- D. Transient and unstable.

Answer: D



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551. The essential chemical components of many coenzymes are

- A. Vitamins
- B. proteins
- C. Nucleic acids
- D. Carbohydrates.

Answer: A



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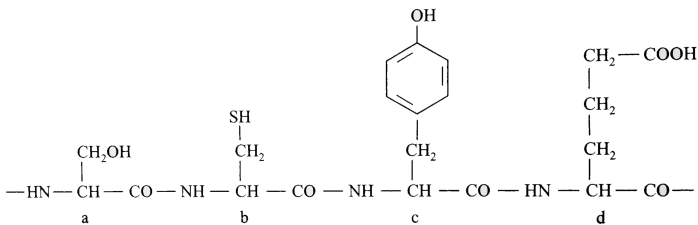
552. Macro molecule chitin is

- A. Simple polysaccharide
- B. Nitrogen containing polysaccharide
- C. Phosphorus containing polysaccharide
- D. Sulphur containing polysaccharide.

Answer: B

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553. The figure shows a tetrapeptide hypothetical portion of a protein with parts labeled a-d. Which one of the following option is correct ?



A. c is an aromatic amino acid -tyrosine

B. a is sulphur containing amino acid and d is N-terminal amino acid

C. a is sulphur containing amino acid -methionine

D. d is acidic amino acid -glutamic acid.

Answer: D



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554. Uridine present only in RNA is a

A. Uridine present only in RNA is

B. Nucleotide

C. Purine

D. Pyrimidine

Answer: D



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555. Which is wrong about enzymes

- A. Enzymes are mostly proteins but some are lipids also
- B. Enzymes are highly specific
- C. Enzymes require optimum pH and temperature for maximum activity
- D. Enzymes are denatured at high temperature.

Answer: A



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556. Select the aromatic amino acids : (a) Tyrosine (b) Valine (c) Lysine (d) Tryptophan (e) Serine.

- A. a and d only
- B. a, d and e
- C. c and d only

D. b and d only.

Answer: A



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557. Pick out wrong statement

- A. Proteins are linear chains of amino acids linked by peptide bonds
- B. Cellulose is a homopolymer
- C. Inulin is polymer of glucose
- D. RuBisCO is the most abundant protein in the whole biosphere

Answer: C



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558. Except blood, the cells of connective tissue secrete certain substances that act as matrix. These substances are

- A. Conjugated proteins
- B. Signalling molecules
- C. Cholesterol
- D. Modified polysaccharides

Answer: D



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559. Match the columns and find the right option

Protein	Function
<i>a</i> Collagen	1 Glucose transport
<i>b</i> Trypsin	2 Hormone
<i>c</i> Insulin	3 Intercellular ground substance
<i>d</i> GLUT-4	4 Enzyme

A. a-3, b- 4, c-2, d-1

B. a-4, b- 1, c-2, d-3

C. a-2, b- 4, c-1, d-3

D. a-3, b- 4, c-1, d-2

Answer: A



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560. Starch is polymer of

A. Maltose

B. Fructose

C. Sucrose

D. Amylose and amylopectin.

Answer: D



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561. Linoleic is unsaturate fatty acid whose content is highest in

- A. Cotton oil
- B. Sunflower oil
- C. Coconut oil
- D. Groundnut oil.

Answer: B



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562. Product of an enzyme catalysed reaction can act as an inhibition of the reaction. It is

- A. Feedback inhibition
- B. Repression
- C. Non-competitive inhibition
- D. Competitive inhibition.

Answer: A

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563. Name the most abundant protein in animal world.

- A. Ribozyme of plants and collagen of animals
- B. RuBisCO of plants and collagen of animals
- C. PEPcase of plants and keratin of animals
- D. Alcohol dehydrogenase of plants and melenin of animals.

Answer: B

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564. In which of the following amino acids, R-group contains sulphur?

- A. Methionine

B. Alanine

C. Tryptophan

D. Phenylalanine

Answer: A



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565. Which of the following sugars cannot split into further groups by hydrolysis

A. Ribose

B. Maltose

C. Sucrose

D. Lactose.

Answer: A



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566. In how many interlocking rings are the carbon atoms arranged in a steroid molecule

- A. 1
- B. 2
- C. 3
- D. 4

Answer: D

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567. identify the incorrect match between protein and its role

- A. keratin - Structural component of hair
- B. Immunoglobins-Protection of body against diseases
- C. Haemoglobin - Transport of oxygen in muscles

D. Thrombin - Blood clotting.

Answer: C

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568. Which of the following statements regarding fats is true

- A. Arachidonic acid has 20 carbons excluding the carbonyl carbon
- B. Glycerol is trihydroxy propane
- C. Palmitic acid has 18 carbons including the carboxyl carbon
- D. Oils have higher melting point than fats

Answer: B

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569. Coenzymes NAD and NADP contain the vitamin

A. Niacin

B. Biotin

C. Thiamine

D. Vitamin B_{12}

Answer: A



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570. Which of the following secondary metabolites are wrongly matched with their categories?

A. Toxin - Ricin

B. Drug - Curcumin

C. Alkaloid - Codeine

D. Lectin - Abrin

A. 1 and 2 only

B. 2 and 3 only

C. 2 and 4 only

D. 3 and 4 only

Answer: C



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571. Match the column-I and column-II

Column I

(i) Viroid

(ii) Cell

(iii) Virus

(iv) Triple helical structure of collagen

Column II

(a) Ramachandran

(b) Leewenhoek

(c) T.O. Diener

(d) Ivanowsky

A. G. N. Ramachandran

B. Anton von Leeuwenhoek

C. Mathias Schleiden

D. Theoder Schleiden

Answer: A



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572. Match the following and choose the correct combination from the option given

I		II
<i>a</i> Nitrogen base	1	RNA
<i>b</i> Nucleoside	2	Thymidylic acid
<i>c</i> Nucleotide	3	Cytidine
<i>d</i> Nucleic acid	4	Uracil

A. a - 1, b - 2, c - 3, d - 4

B. a - 1, b - 3, c - 2, d - 4

C. a - 4, b - 3, c - 2, d - 1

D. a - 4, b - 1, c - 2, d - 3

Answer: C

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573. Select the option which is not correct with respect to the enzyme action.

- A. Addition of lot of succinate does not reverse inhibition of succinic dehydrogenase by malonate
- B. A non-competitive inhibition binds the enzyme at a sight distinct from that which binds the substrate
- C. Malonate is a competitive inhibitor of succinic dehydrogenase
- D. Substrate binds with the enzyme at its active site.

Answer: A



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574. Which structure level enables proteins to function as enzymes

- A. Primary
- B. Secondary
- C. Tertiary
- D. Quarternary.

Answer: C



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575. An organic non-protein cofactor which is easily separable from apoenzyme is called

- A. Prosthetic group
- B. Coenzyme
- C. Alloenzyme
- D. All the above.

Answer: B



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576. Adenylic acid is

A. Nitrogen base

B. Nucleoside

C. Nucleotide

D. Amino acid.

Answer: C



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577. A nitrogenous base is linked to the pentose sugar through :

A. Hydrogen bond

B. Glycosidic bonds

C. Phosphodiester bond

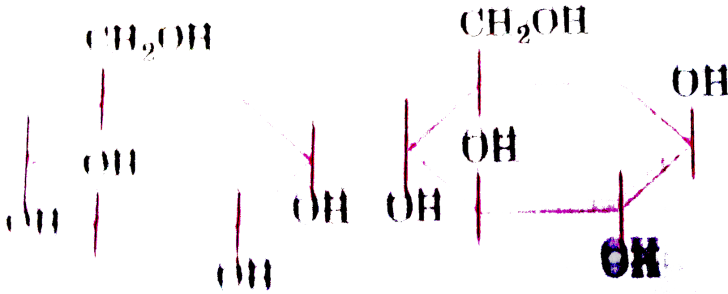
D. Peptide bonds.

Answer: B



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578. Observe the two structural formulae. They are



- A. Isomers
- B. Epimers
- C. Anomers
- D. All the above.

Answer: C

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579. Fish proteins are nutritionally superior to most vegetable proteins because they are rich in

A. All the 20 amino acids

B. Essential amino acids

C. Peptide bond

D. Polypeptides.

Answer: B



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580. A stretch of DNA consisting of 10-20 bases is most appropriately be called as :

A. Polynucleotide

B. Nucleotide

C. Nucleoside

D. Oligonucleotide.

Answer: D

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581. DNA and RNA comprise of

- A. Sugar, phosphate, base
- B. Sugar, phosphate
- C. Base, phosphate
- D. Sugar, base.

Answer: A

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582. Which of the following options consist of nonessential amino acids

- A. Valine, leucine, glycine, alanine
- B. Glycine, serine, proline, glutamin acid
- C. proline, aspartic acid, glutamic acid, methionine

D. Cysteine, tyrosine, alanine, isoleucine.

Answer: B



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583. Proteins which help other proteins to fold properly are called

A. Chaperons

B. Actins

C. Porins

D. Synthases.

Answer: A



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584. The linkage in disaccharide is

A. glycosidic

B. Ester

C. Amide

D. Phosphodiester.

Answer: A

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585. This is wax

A. Palmitic acid

B. Ethyl palmitate

C. Hexacosyl palmitate

D. Sodium stearate.

Answer: C

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586. Not all proteins have a

- A. Primary structure
- B. Secondary structure
- C. Tertiary structure
- D. Quaternary structure.

Answer: D



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587. A tripeptide contains

- A. 3 amino acid
- B. 4 amino acid
- C. 6 amino acid

D. 2 amino acid.

Answer: A



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588. How many phosphodiester bonds are there in ATP

A. 3

B. 2

C. 1

D. 0

Answer: D



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589. 98% of all living organisms is made up of just following number of elements.

A. 25

B. 6

C. 50

D. 100

Answer: B



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590. Chitin is

A. Amino acid

B. Polysaccharide

C. Protein

D. Oligosaccharide.

Answer: B

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591. Name the most abundant protein in animal world.

- A. Collagen
- B. Haemoglobin
- C. Trypsin
- D. Insulin.

Answer: B

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592. Cellulose is a polymer of

- A. α -D glucose

B. β -D glucose

C. α -D Fructose

D. β -Fructose.

Answer: B



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593. Which of the following is a disaccharide

A. Glucose

B. Lactose

C. Starch

D. Galactose.

Answer: B



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594. Which is not applicable to glycogen

- A. Homopolysaccharide
- B. Heteropolysaccharide
- C. Branched chain molecule
- D. Stored in liver and muscle.

Answer: B



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595. An allosteric inhibitor of the enzyme acts by binding to the

- A. Substrate
- B. Product
- C. Catalytic site of enzyme
- D. Non-catalytic site of enzyme.

Answer: D



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596. Which one of the following natural polymers is found in both insects and fungi

- A. Pectin
- B. Chitin
- C. Cellulose
- D. Suberin.

Answer: B



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597. Which one of the following combination of all three fatty acids are essential for human beings

- A. Oleic acid, linoleic acid and linolenic acid
- B. Palmitic acid, linoleic acid and linolenic acid
- C. Oleic acid, linoleic acid and arachidonic acid
- D. Linoleic acid, linolenic acid and arachidonic acid.

Answer: D

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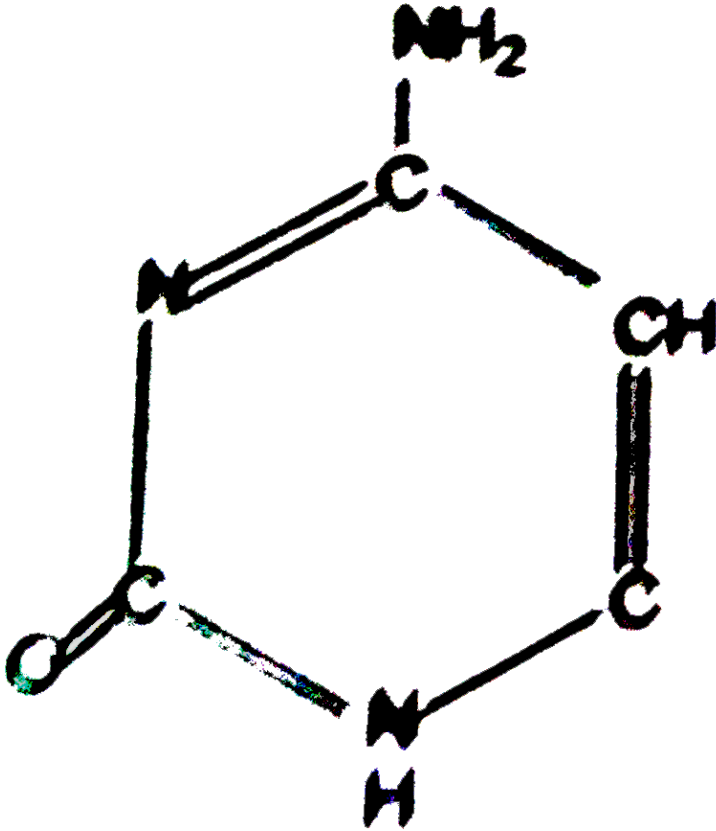
598. What is exhibited by lower k_m value

- A. More affinity with substrate
- B. Less affinity with substrate
- C. More affinity with Product
- D. Less affinity with Product

Answer: A

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599. Which nitrogen base is this



A. Cytosine

B. Thymine

C. Adenine

D. Uracil.

Answer: A



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600. Identify the correct pair of statements

- (i) Alternate name of thymine is 5- methyl uracil
- (ii) Arachidonic acid molecule contains less number of carbons than palmitic acid
- (iii) Cellulose contains helices
- (iv) Aquaporin is a polypeptide

A. ii,iii

B. i,ii

C. ii,iv

D. i,iv.

Answer: D



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601. Identify the polypeptide subunit present in the adult haemoglobin

- A. Two α -and two β -subunits
- B. Four α -subunits
- C. Four β -subunits
- D. Three α -subunits and one β -subunits.

Answer: A



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602. Match the columns and find the correct options

<i>I</i>		<i>II</i>
<i>a</i> Pigments	<i>i</i>	Abrin, ricin
<i>b</i> Toxins	<i>ii</i>	Concannavalin A
<i>c</i> Alkloids	<i>iii</i>	Corotenoids
<i>d</i> Lectins	<i>iv</i>	Morphine, codeine

A. a-iii, b-iv, c-ii, d-i

B. a-v, b-iv, c-ii, d-i

C. a-iii, b-iv, c-ii, d-v

D. a-iii, b-v, c-ii, d-i

Answer: B

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603. Match and find the correct option

- | | |
|--------------------------|--|
| <i>a</i> Oxidoreductases | <i>i</i> Linking of two compounds |
| <i>b</i> Isomerases | <i>ii</i> Removal of group from substrates |
| <i>c</i> Ligases | <i>iii</i> Intercoversion of isomers |
| <i>d</i> Lyases | <i>iv</i> Dehydrogenases |
| | <i>v</i> Hydrolysis |

A. a-iv, b-i, c-iii, d-ii

B. a-iv, b-iii, c-i, d-ii

C. a-iii, b-iv, c-ii, d-v

D. a-ii, b-v, c-iii, d-i.

Answer: B



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604. Which of the following rules states that with increase of every $10^{\circ}C$ temperature , the rate of metabolic process gets doubled

- A. Van't Hoff's rule
- B. Bergman's rule
- C. Allen's rule
- D. Jordan's rule.

Answer: A



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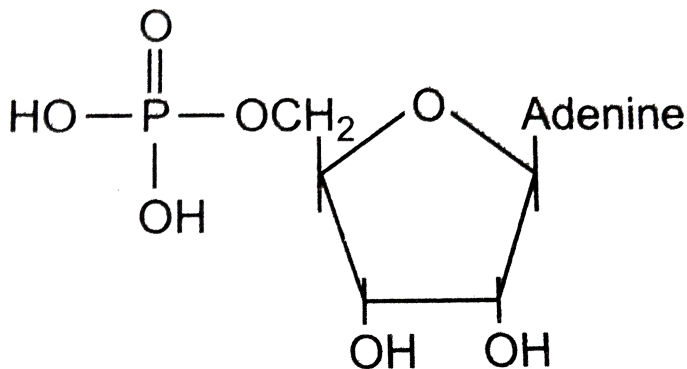
605. Which of the following biomolecules does have a phosphodiester bond

- A. Fatty acid in a diglyceride
- B. Monosaccharidws in polysaccharide
- C. Amino acids in polypeptide
- D. Nucleotides in nucleic acid.

Answer: D

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606. The given organic compound is a diagrammatic representation of :



- A. Lecithin - Phos[horylated glyceride found in cell membrane
- B. Adenosine

C. Adenylic acid

D. Uridine

Answer: C



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607. Which of the following statements about the structure of proteins is true

- A. The sequence of amino acids in a protein represents the secondary structure
- B. Helices of proteins are always left handed
- C. Adult human haemoglobin consists of two subunits
- D. Protein are heteropolymers containing strings of amino acids.

Answer: D



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608. Which of the following secondary metabolites belong to the group drugs

I. Morphine

II. Curcumin

III. Codeine

IV. Vinblastine

V. Abrin

(a) I and II

(b) I and V

(c) II and IV

(d) I and III

A. I and II

B. I and V

C. II and IV

D. I and III

Answer: D



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609. In the ribose of RNA, unlike DNA, every nucleotide residue has an additional :

- A. COOH group in 2' position
- B. OH group in 5' position
- C. OH group in 2' position
- D. Phosphate group in 2' position

Answer: C



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610. Nomenclature of enzyme is done on the basis of

- A. Substrate on which they act
- B. Type of reactions they catalyse
- C. End products formed

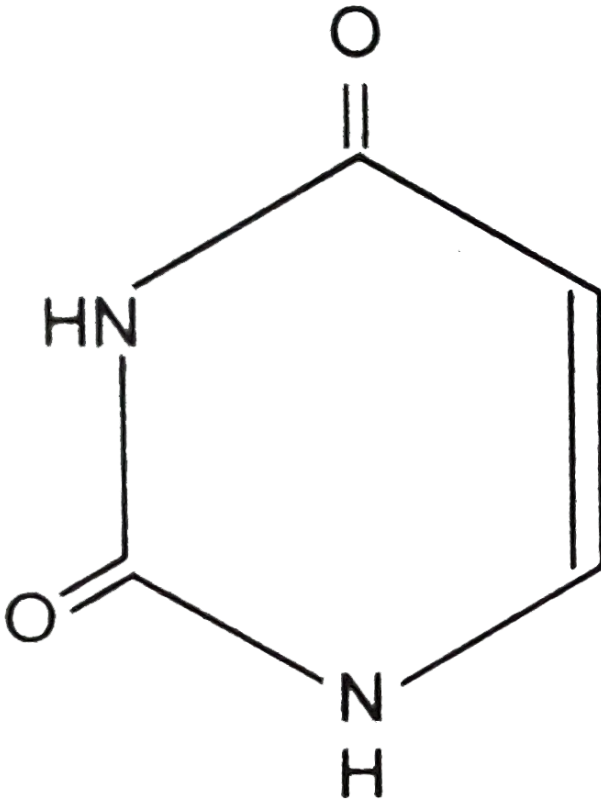
D. Both A and B

Answer: B



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611. Identify the structure



A. Adenosine

B. Cholesterol

C. Uracil

D. Adenylic acid.

Answer: C



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612. Which of the following is correct pair of pyrimidine bases

A. Adenine and thymine

B. Adenine and guanine

C. Thymine and cytosine

D. Guanine and cytosine.

Answer: C



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613. Match the columns and find the correct options

<i>I</i>		<i>II</i>
<i>a</i> Pigments	<i>i</i>	Abrin, ricin
<i>b</i> Toxins	<i>ii</i>	Concannavalin A
<i>c</i> Alkloids	<i>iii</i>	Corotenoids
<i>d</i> Lectins	<i>iv</i>	Morphine, codeine

A. a-iv, b-iii, c-I, d-ii

B. a-ii, b-iv, c-i, d-iii

C. a-iii, b-i, c-iv, d-ii

D. a-i, b-ii, c-iii, d-iv

Answer: C



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614. Cholesterol is a precursor for each of the following except

A. Bile salts

B. Vitamin D

C. Insulin

D. Steroids.

Answer: C



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615. Which of the following is not derived from plants

A. Opioids

B. DDT

C. Cocaine

D. Cannabinoids.

Answer: B



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616. This consists of mostly linear strands

- A. Starch
- B. Glycogen
- C. Cellulose
- D. Firbrin.

Answer: C



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617. A protein has

- A. H-bonds
- B. Ionic bonds
- C. Peptide bond
- D. All the above.

Answer: D



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618. An amino acid often involved in forming interchain bounds is

- A. Ala
- B. Cys
- C. Asp
- D. Met.

Answer: B



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619. Sulpha drugs act as competitive inhibitors

- A. In folic acid synthesis in bacteria

B. In folic acid synthesis in viruses

C. For succinate dehydrogenase

D. For glucose 6-phosphate.

Answer: A



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620. Among six elements forming 98% of living mass, which is not included

(a) P

(b) S

(c) Cl

(d) H

A. P

B. S

C. Cl

D. H.

Answer: C



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621. Which alcohol is present in fats.

A. Glycerol

B. Butanol

C. Ethanol

D. Octanol.

Answer: A



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622. Which is not true of enzymes ?

- A. Enzymes have substrates
- B. All enzymes are catalysts
- C. Enzymes may have an inhibitor.
- D.

Answer: B

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623. Animal membranes contain

- A. Steroids
- B. Chlorophyll
- C. Prostaglandins
- D. Vit. A.

Answer: A

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624. This is an example of transport protein

- A. Actin
- B. Ig
- C. Insulin
- D. Haemoglobin.

Answer: D



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625. Pick out the alkaloid among the following

- A. Morphine
- B. Curcumin
- C. Cellulose

D. Ricin.

Answer: A



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626. Which of the following is /are cellulose

- (i) Paper (ii) Cotton fibre
(iii) Chitin (iv) Glycogen

A. I and ii

B. I and iii

C. I, iii and iv

D. iii and iv

Answer: A



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627. Which of the following statements about amino acids is false

- A. Based on the nature of carboxyl group there are many amino acids
- B. Amino acids are substituted methanes
- C. Amino acids have an amino group and acid group as substituents on the α -carbon
- D. There are four substituent groups occupying the four valency positions

Answer: A



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628. Enzymes hexokinase is inhibited by excess glucose 6-P. It is

- A. Non-competitive inhibition
- B. Competitive inhibition
- C. Allosteric modulator

D. Denaturation of enzyme.

Answer: C



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629. Which protein is called "guardian of genome"

A. P 53

B. Cyclin D

C. CDK 4

D. Rb.

Answer: A



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630. An alkaloid which arrests cell division is Obtained from

A. Chrysanthemum

B. Colchicum

C. Dalbergia

D. Crocus.

Answer: B



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631. What is the role of competitive inhibitor during enzyme action?

(a) It enhances enzyme action

(b) It declines enzyme action

(c) It alters the active site of the enzyme and prevents the binding of substrate

(d) it inhibits breaking of chemical bond of the substrate

A. It enhances enzyme action

B. It declines enzyme action

C. It alters the active site of the enzyme and prevents the binding of substrate

D. it inhibits breaking of chemical bond of the substrate.

Answer: B



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632. Glycosidic bonds exist in DNA molecule between

(a) Sugar and phosphate

(b) Any two nitrogen bases

(c) Sugar and nitrogen base

(d) Purines and pyrimidines

A. Sugar and phosphate

B. Any two nitrogen bases

C. Sugar and nitrogen base

D. Purines and pyrimidines.

Answer: C



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633. match the following and find correct option

I

a Hydrogen bond

b N-glycosidic linkage

c Phosphodiester bond

d Peptide bond

II

i Adenine-deoxyribose

ii Glucose - Fructose

iii Leucine-Glycine

iv Nucleotide-Nucleotide in polynucleotide c

v Guanine-Cytosine on opposite strands of I

A. a-v, b-iii, c-iv, d-ii

B. a-i, b-iv, c-v, d-ii

C. a-v, b-i, c-iv, d-iii

D. a-ii, b-i, c-v, d-iii

Answer: C



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634. The enzyme which catalyses the formation of glutamine from its substrate belongs to category

- A. Hydrolases
- B. Transferases
- C. Ligases
- D. lyases.

Answer: C



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635. Statement (S) : According to Von't Hoff's rule, metabolic activity doubles with every $10^{\circ}C$ increase in temperature

Reason (R) : Reaction rate is not affected with every $10^{\circ}C$ decrease in temperature.

- A. S is correct but R is wrong
- B. S is wrong but R is correct

C. Both S and R are correct and R is correct explanation to S

D. Both S and R correct but R is not correct explanation to S.

Answer: A



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636. Arrange the following compounds in descending order on the basis of number of carbon atoms present in them

(a) Palmitic acid

(b) Serine

(c) Ribose

(d) Arachidonic

(e) Glucose

A. d,c,a,b,e

B. b,c,e,a,d

C. d,a,e,c,b

D. c,b,a,d,e.

Answer: C



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637. Identify the wrong statements

- (a) The substrate binds to active site of enzyme and not fitting into active site
- (b) The binding of substrate induces the enzyme to alter its shape
- (c) Chemical bonds of substrate break down not to form now enzyme product complex
- (d) The enzyme releases the products of the reaction and run through catalytic cycle once again

A. a,c

B. b,d

C. b,c

D. a,d

Answer: A



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638. Which of the following is the earliest discovered amino acid ?

- A. Glycine
- B. Methionine
- C. Phenylalanine
- D. Asparagine.

Answer: D



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639. Which one of the following is not an oligosaccharide

- A. Insulin
- B. Maltose
- C. Sucrose
- D. Raffinose

Answer: A



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640. Match and find the correct option

I

II

- | | |
|-----------------------|----------------------|
| <i>a</i> Transferases | <i>i</i> Epimerase |
| <i>b</i> Hydrolases | <i>ii</i> Kinases |
| <i>c</i> Lyases | <i>iii</i> Phosphate |
| <i>d</i> Isomerase | <i>iv</i> Fumarase |

(a) a-ii, b-iii, c-iv, d-i

(b) a-ii, b-iii, c-i, d-iv

(c) a-v, b-i, c-iv, d-iii

(d) a-ii, b-i, c-v, d-iii

A. a-ii, b-iii, c-iv, d-i

B. a-ii, b-iii, c-i, d-iv

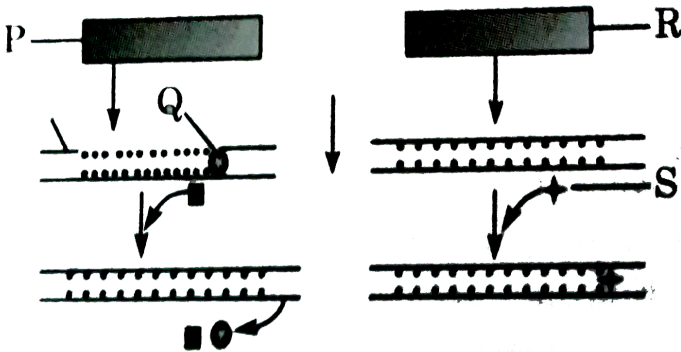
C. a-v, b-i, c-iv, d-iii

D. a-ii, b-i, c-v, d-iii.

Answer: A

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641. Identity P,Q,R and S in the diagram



- A. P-negative regulation, Q-inhibitor, R-effector molecule, S-positive regulation
- B. P-positive regulation, Q-effector molecule, R-inhibitor, S-negative regulation
- C. P-negative regulation, Q-inhibitor, R-positive regulation, S-effector molecule

D. P-positive regulative, Q-effector molecule, R-negative regulation, Sinhibitor.

Answer: C

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642. Which one of the following statement is wrong

- A. Glycine is a sulphur containing amino acid
- B. Sucrose is a disaccharide
- C. Cellulose is a polysaccharide
- D. Uracil is a pyrimidine.

Answer: A

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643. Phytochrome is a

- A. Chromoprotein
- B. Flavoprotein
- C. Glycoprotein
- D. Lipoprotein.

Answer: A



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644. Among the following edible fishes which one is a marine fish having rich source of omega 3 fatty acids ?

- A. Mackerel
- B. Mystus
- C. Mangur
- D. Mrigula.

Answer: A



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645. Which of the following is the least likely to be involved in stabilizing the three-dimensional folding of most proteins ?

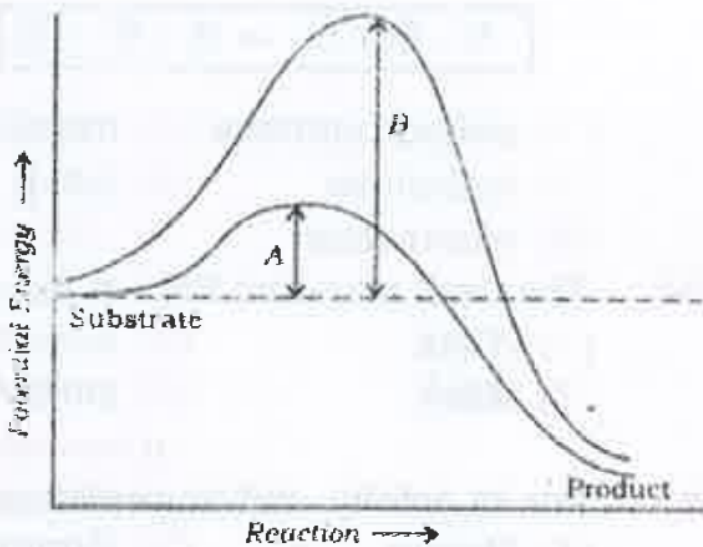
- A. Ester bonds
- B. Hydrogen bonds
- C. Electrostatic interactions
- D. Hydrophobic interactions

Answer: A



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646. Which of the following describes the given graph correctly ?



- A. Exothermic reaction with energy A in the absence of enzyme and B in the presence of enzyme
- B. Endothermic reaction with energy A in the presence of enzyme and B in the absence of enzyme
- C. Exothermic reaction with energy A in the presence of enzyme and B in the absence of enzyme.

D. Endothermic reaction with energy A in the absence of enzyme and B in the presence of enzyme.

Answer: C

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647. Read the assertion and reason carefully to mark the correct option out of the option given below:

Assertion: Carbohydrates are more suitable for the production of energy in the body than proteins and fats.

Reason : Carbohydrates can be stored in the tissues as glycogen for use in the production of energy, whenever necessary.

- A. if both are true with reason being correct explanation
- B. both true with but reason is not correct explanation
- C. assertion true but reason is wrong
- D. both are wrong

Answer: B

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648. Assertion : Secondary metabolites are produced in small quantities and their extraction from the plant is difficult and expensive.

Reason : Secondary metabolites can be commercially produced by using tissue culture technique.

- A. if both are true with reason being correct explanation
- B. both true with but reason is not correct explanation
- C. assertion true but reason is wrong
- D. both are wrong

Answer: B

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649. Which of the following are not polymeric

- A. Nucleic acids
- B. Proteins
- C. Polysaccharides
- D. Lipids.

Answer: D



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Cyg

1. Immediate source of energy is

- A. Glucose
- B. ATP
- C. Sucrose

D. Fructose.

Answer: A



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2. Which chemical provides relaxation to nerves ?

A. (b) Na^+

B. (c) K^+

C. (c) Mn^{2+}

D. (d) Ca^{2+}

Answer:



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3. An imino acid is

A. Leucine

B. Phenylalanine

C. Lysine

D. Proline.

Answer: D

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4. Maximum content of iron is present in

A. Myoglobin

B. Cytochromes

C. Haemoglobin

D. Ferritin.

Answer:

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5. What happens if bile is not present in sufficient quantity in the body?

A. K

B. Na

C. Mg

D. Cl.

Answer:



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6. protoplasmic elements are

A. 4

B. 5

C. 6

D. 9

Answer:



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7. Iodine is

- A. Major mineral
- B. Trace element
- C. Minor metal
- D. Non-essential element.

Answer:



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8. Iodine is a component of

- (a) haemocyanin
- (b) Thyroxine
- (c) Cytochrome
- (d) Myoglobin

A. haemocyanin

B. Thyroxine

C. Cytochrome

D. Myoglobin.

Answer:



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9. Metal present in cytochrome oxidase is

- (a) Cu
- (b) Fe

(c) Mg

(d) Ca

A. Cu

B. Fe

C. Mg

D. Ca.

Answer:



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10. Formation of glycogen from glucose is an example of

A. Catabolism

B. Polymerisation

C. Dehydration synthesis

D. Both B and C.

Answer:



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11. Reducing sugars are

- A. Bonded aldose and ketose groups
- B. Free aldose group
- C. Free ketose group
- D. Both B and C.

Answer:



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12. Arabin/xylan is

- A. Tetrosan

B. pentosan

C. hexosan

D. Heptosan.

Answer:



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13. Sucrose or sugar is made of two hexosan residues of

A. Glucose and Fructose

B. Glucose and galactose

C. Fructose and galatose

D. Galactose and mannose.

Answer:



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14. Which one is least sweet ?

A. Fructose

B. Sucrose

C. Lactose

D. Maltose.

Answer:



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15. Which one is a lipid ?

A. Stachyose

B. Lycopene

C. Leucine

D. Uracil.

Answer:



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16. A product of glycerol and phellonic acid is

- A. Wax
- B. Cutin
- C. Suberin
- D. Sterol.

Answer:



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17. In amylose fraction, glucose residues are linked by

- A. α 1 - 4 linkages

B. β 1 - 4 linkages

C. α 1 - 6 linkages

D. β 1 - 6 linkages

Answer:



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18. Smallest polysaccharide is

A. Starch

B. Inulin

C. Glycogen

D. Cellulose.

Answer:



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19. Which is true about heparin and hyaluronic acid ?

- (a) Both are mucopolysaccharides
- (b) They are formed of glucuronic acid and glucosamine
- (c) Heparin is anticoagulant while hyaluronic acid is lubricating
- (d) All the above

- A. Both are mucopolysaccharides
- B. They are formed of glucuronic acid and glucosamine
- C. Heparin is anticoagulant while hyaluronic acid is lubricating
- D. All the above.

Answer:



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20. Cellulose is

- A. Linear unbranched polymer

B. β -pyranose glucan

C. 1 \rightarrow 4 linked

D. All the above.

Answer:



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21. The most abundant protein in the plant world is found in

A. Rubisco

B. Haemoglobin

C. Ferredoxin

D. Cytochrome.

Answer:



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22. A chemical where both D-galactose and L-galactose are present is

- A. Hyaluronic acid
- B. Agar-agar
- C. Lactose
- D. Raffinose

Answer:



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23. Distance between two branching points in glycogen is

- A. 5 -6 glucose residues
- B. 8-14 glucose residues
- C. 20-25 glucose residues
- D. 100-120 glucose residues

Answer:



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24. The main chain of glycogen is

- A. Straight
- B. helically coiled with each turn having 10 -14 glucose units
- C. helically twisted with each turn having 6 glucose units
- D. Double helical with each turn having 10 units.

Answer:



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25. In β -pleated secondary structure

- A. Polypeptides show alternate reverse helix

B. Two or more polypeptides form sheet and run parallel

C. As in B but the polypeptides run antiparallel

D. Both B and C.

Answer:



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26. most of the blood proteins in our body are

A. Acidic

B. Basic

C. Neutral

D. All the above in equal proportions.

Answer:



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27. Proteoglycan is made of proteins hybridised are

- A. Glucose
- B. Oligosaccharide
- C. polysaccharide
- D. Mucopolysaccharide.

Answer:



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28. Which one is polymer of fructose ?

- A. Glycogen
- B. Starch
- C. Inulin
- D. Raffinose

Answer:



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29. Palindromic areas of DNA have

- A. Repetitive sequences
- B. Similar but opposite sequences in the two strands
- C. Low melting
- D. High melting.

Answer:



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30. Amino acid binding site of tRNA has

- A. CCA-OH

B. CGA-OH

C. UCA-OH

D. UCG-OH.

Answer:



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31. Modulators

A. Inhibit enzyme activity

B. Stimulate enzyme activity

C. Function as coenzymes

D. Both A and B.

Answer:



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32. K_i indicates

- A. Competitive inhibition
- B. Denaturation of enzymes
- C. Reaction velocity
- D. All the above.

Answer:



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33. Enzyme urease, first crystallised by Sumner, was obtained from

- A. Human urine
- B. Canavalia
- C. Pancreatium
- D. Thalictum.

Answer:



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34. Ribozyme was discovered by

- A. Kuhne
- B. Duclaux
- C. Cech et al
- D. Altman et al.

Answer:



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35. An enzyme which brings about change in side group without altering composition is

A. Isomerase

B. Epimerase

C. Mutase

D. Esterase.

Answer:



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36. B_1 is constituent of

A. FMN

B. TPP

C. NAD

D. CoA.

Answer:



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37. A simple enzyme is

- A. Succinate dehydrogenase
- B. Urease
- C. Transaminase
- D. Ribozyme.

Answer:



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38. Isoenzyme are

- A. Different molecular forms
- B. Different substrate affinity
- C. Different maximum activity

D. All the above.

Answer:



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39. Enzymes functional in a cell are

A. Inducible, constitutive and repressible

B. Inducible and repressible

C. Inducible only

D. Repressible only.

Answer:



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40. Which is susceptible to feed back inhibition ?

A. Zymogens

B. Zymase

C. Diastase

D. Hexokinase.

Answer:



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41. Write the names of enzymes whose deficiency causes albinism and phenyl- ketone urea.

A. hexokinase

B. Tyrosinase

C. Phenylalanine hydroxylase

D. Succiny dehydrogenase.

Answer:

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42. The hereditary defect phenylketonuria is caused by deficiency of

- A. Phenylalanine hydroxylase
- B. Fructokinase
- C. Glucokinase
- D. Haemoglobin reductase.

Answer:

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43. Enzymes are different from catalysts in

- A. Poisons
- B. Change in pH
- C. High temperature

D. All the above.

Answer:



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