BIOLOGY

BOOKS - AAKASH SERIES

BIOMOLECULES

Exercise I

1. The following pair of elements are relatively abundant in living organisms than in earth.s crust

A. Oxygen Nitrogen

B. Magnesium , Carbon

C. Carbon , Sodium

D. Carbon , Hydrogen

Answer: D

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2. Which of the following organic compound is used in chemical analysis?

Benzoic acid

Glacial acetic acid

Trichloro acetic acid

Sulphuric acid

A. Benzoic acid

B. Glacial acetic acid

C. Trichloro acetic acid

D. Sulphuric acid

Answer: C

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3. Organic compounds containing an amino group and carboxyl group on the same carbon atom are called

A. Fatty acids

B. Nucleic acids

C. Amino acids

D. Carbohydrates

Answer: C

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4. The total number of amino acids which occur in proteins

A. 10

B. 20

C. 200

D. 24

Answer: B

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5. In which of the following amino acid . R . group is a " Hydroxy methyl " moeity ?

A. Serine

B. Glycine

C. Alanine

D. Valine

Answer: A

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6. Which of the following amino acid is neutral in nature

A. 1)Glutamic acid

B. 2)Asparatic acid

C. 3)Valine

D. 4)Lysine

Answer: C

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7. Find the odd type of amino acid from the following

A. Phenylalanine

B. Tyrosine

C. Tryptophan

D. Glycine

Answer: D

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8. Which of the following type of biomolecules upon ionization form zwitter ions

A. Carbohydrates

B. Nucleic acids

C. Amino acids

D. Vitamins

Answer: C

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9. The number of carbon atoms in palmitic acid and stearic acid respectively

A. 20 , 16

B. 16 , 18

C. 18 , 20

D. 14 , 16

Answer: B

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10. " Trihydroxy Propane " is an example for

A. Derived lipids

B. Conjugated lipids

C. Simple lipids

D. All the above

Answer: C

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11. The number of fatty acid molecules in trigly ceride is

A. One

B. Two

C. Three

D. Four

Answer: C

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12. Phosphatidyl choline is an example for

Derived lipid

Conjugated lipid

Simple lipid

Steroids

A. Derived lipid

B. Conjugated lipid

C. Simple lipid

D. Steroids

Answer: B

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13. Nitrogen base seen in lecithin is

A. Ethanol amine

B. Serine

C. Choline

D. Sphingosine

Answer: C

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14. Lecithin consists of

A. Glycerol molecule , one fatty acid , phosphoric acid , choline

B. Glycerol molecule , two fatty acids , choline

C. Glycerol molecule , two fatty acids , phosphoric acid , choline

D. Sphingosine , two fatty acids , phosphoric acid , choline

Answer: C

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15. " Anthocyanin " is a type of

A. Terepenoid

B. Toxins

C. Drug

D. Pigment

Answer: D

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16. " Ricin , Abrin " belong to which category of secondary metabolites ?

A. Lectins

B. Toxins

C. Alkaloids

D. Essential oils

Answer: B

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17. Rubber , gums , cellulose are examples for

Polymeric substances

Pigments

Essential oils

Drug

A. Polymeric substances

B. Pigments

C. Essential oils

D. Drug

Answer: A

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18. Binding of symbiotic nitrogen fixing bacteria to the surface of root hair cell is promoted by the following substance

A. Vinblastin

B. Curcumin

C. Codeine

D. Concanavalin A

Answer: D

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19. The molecular weight of bio macromolecules found in acid soluble pool ranges between

A. 14 to 18 Da (Daltons)

B. 18 to 200 Da

C. 18 to 800 Da

D. 200 to 400 Da

Answer: C

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20. The molecular weight of organic compounds found in acidinsoluble is

A. one thousand Dalton

B. ten thousand Dalton

C. more than ten thousand Daltons

D. less than ten thousand Daltons

Answer: C

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21. Most abundant protein in the whole biosphere is

A. Collagen

B. Myosin sulshrete

C. RUBISCO

D. Actin

Answer: C

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22. Reducing sugars are characterised by the presence of free

A. Aldehyde or Keto group

B. Aldehyde and Keto group

C. Keto group only

D. All the above

Answer: A

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23. Glucose is

A. Furanose , pentose sugar

B. Pyranose , pentose sugar

C. Ketose , hexose sugar

D. Aldose , hexose sugar

Answer: D

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24. Insulin is a polymer of

A. Ribulose

B. Glucose

C. Fructose

D. Ribose

Answer: C

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25. Which of the following polysaccharide is a component of paper ?

A. Glycogen

B. Hemicellulose

C. Cellulose

D. Podin

Answer: C

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26. Organic acids having a hydrocarbon chain and end in a carboxylic group are called

A. Amino acids

B. Fatty acids

C. Nucleic acids

D. Vitamins

Answer: B

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27. Which of the following is an example for unsaturated fatty acid

A. Palmitic acid

B. Stearic acid

C. Acetic acid

D. Linoleic acid

Answer: D

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28. Which of the following polysaccharide gives blue colour with Iodine

A. Glycogen

B. Starch

C. Cellulose

D. Chitin

Answer: B

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29. Exoskeleton of arthropods contains a complex hetero polysaccharide called

A. Pectin

B. Chitin

C. Cellulose

D. Starch

Answer: B

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30. Type of sugar found in Ribonucleic acid is

A. 1)Ribose sugar

B. 2)Deoxyribose sugar

C. 3)Erythrose sugar

D. 4)None of the above

Answer: A

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31. Nucleotide consists of

A. N_2 base only

B. N_2 base + sugar

C. N_2 base + sugar + phosphate

D. Sugar + Phosphate

Answer: C

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32. Find the odd " Nitrogen base "

A. Thymine

B. Cytosine

C. Uracil

D. Adenine

Answer: D

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33. Ribose sugar differs from deoxy ribose sugar

A. by the absence of OH group at " 2C " atom

B. by the presence of H atom at " 2C " atom

C. by the presence of OH group at " 2C " atom

D. none of these

Answer: C

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34. Type of bonds seen in primary structure of proteins

A. Peptide bonds

B. Hydrogen bonds

C. Disulphide bridges

D. All the above

Answer: A

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35. Serine is coded by a letter

A. S

B. C

C. Y

D. E

Answer: A

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36. Glutamic acid is coded by a letter

A. S

B. C

C. Y

D. E

Answer: D

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37. Cysteine is coded by a letter

S

C

Y

E

A. S

B. C

C. Y

D. E

Answer: B

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38. Tyrosine is coded by a letter

A. S

B. C

C. Y

D. E

Answer: C

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39. In a polypeptide chain " N " terminal amino acid is always written towards

A. Left side

B. Right side

C. In the middle

D. All the above

Answer: A

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40. The following level of structure of protein gives 3D view of the protein

A. Primary structure

B. Teritary structure

C. Secondary structure

D. None of the above

Answer: B

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41. Which of the following level of protein structure is necessary for the many biological activities of proteins?

A. Primary structure

B. Teritary structure

C. Secondary structure

D. None of the above

Answer: B

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42. Number of peptide chains in oligo proteins.

A. 4

B. 2

C. 6

D. 1

Answer: A

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43. In majority of the proteins linear polypeptide chain gets coiled in manner form secondary structure

A. Clockwise

B. Anti clockwise

C. Randomly

D. None of the above

Answer: A

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44. Human haemoglobin is made up of

A. Two polypeptide chains of four types

B. Two polypeptide chains of two types

C. Four polypeptide chains of four types

D. Four polypeptide chains of two types

Answer: D

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45. The two polypeptide chasins of insulin are cross linked at ..... places.

A. α, β

B. β, γ

C. $\in, \alpha$

D. $\beta, \in$

Answer: A

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46. Which of the following type of reaction occurs during the formation of peptide bond and glycosidic bond ?

A. dehydrogenation

B. decarboxylation

C. dehydration

D. oxidation

Answer: C

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47. " Glycosidic bond " is seen in

A. Oligosaccharides

B. Polysaccharides

C. Monosaccharides

D. 1 & 2

Answer: D

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48. Phosophodiester bond is formed between

A. 3^1 carbon and 5^1 carbon of sugar in a nucleotide

B. 5^1 carbon and 3^1 carbon of sugar in a nucleotide

C. 3^1 carbon of sugar of one nucleotide and $5^1 - c$ of of another nucleotide

D. All the above

Answer: C

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49. The type of bond formed between nitrogen base and sugar molecule in a nucleoside is

A. Peptide bond

B. Ester bond

C. Glycosidic bond

D. All the above

Answer: C

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50. The type of bond formed between hydroxyl group of sugar and phosphate is

A. Ester bond

B. Glycosidic

C. Peptide bond

D. All the above

Answer: A

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51. The double strand helix strcutre of DNA was proposed by

A. Singer and Nicholon

B. Watson and Crick

C. Sutton and Boveri

D. Jacob and Monad

Answer: B

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52. Nitrogen bases of DNA are

A. Phosphodiester bonds

B. Ester bond

C. Hydrogen bonds

D. Glycosidic bond

Answer: C

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53. The angle between two consective base pairs of a DNA molecule is

A. 36°

B. 360°

C. 20°

D. 180°

Answer: A

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54. The pitch of DNA molecule is

A. 1)$34^\circ A$

B. 2)3.4° A

C. 3)20° A

D. 4)18° A

Answer: A

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55. The distance between two successive base pairs is

A. 3.4° A

B. 2.8° A

C. 2.0° A

D. 4.0° A

Answer: A

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56. Number of nucleotides per one turn of DNA double helix is

A. 1)20

B. 2)40

C. 3)10

D. 4)60

Answer: A

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57. Most common type of DNA is

A. B DNA

B. Z DNA

C. A DNA

D. 1 & 2

Answer: A

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58. A series of reactions which occur to form a compound or degrade a compound put together are called

A. Metabolism

B. Anabolism

C. Catabolism

D. All the above

Answer: A

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59. Proteins with specific power of activation are called

A. Abzymes

B. Ribozymes

C. Enzymes

D. All the above

Answer: C

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60. Pathway.s which consume energy and synthe sise complex compounds are called

A. Anabolic pathways

B. Catabolic pathways

C. Amphibolic pathways

D. All the above

Answer: A

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61. Pathways in which complex compounds are converted to simple compounds by the release of energy are

A. Anabolic pathways

B. Catabolic pathways

C. Amphibolic pathways

D. All the above

Answer: B

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62. Energy currency of the cell is

A. GDP

B. AMP

C. ATP

D. GMP

Answer: C

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63. The concentration of glucose in blood in a normal healthy individual is

A. 4.5-50 mm

B. 5-5.5 mm

C. 3.0-3.5 mm

D. 2-2.5 mm

Answer: A

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64. Antibodies having enzymatic activity are called

A. Ribozymes

B. Abzymes

C. Enzymes

D. All the above

Answer: B

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65. RNA molecules having catalytic activity are called

A. Ribozymes

B. Abzymes

C. Enzymes

D. All the above

Answer: A

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66. Active site is

A. A part of carbohydrate molecule to which substrate binds

B. A cleft or crevice on DNA double helix

C. A cleft or crevice on enzyme into which sub strate fits

D. A part of anti body

Answer: C

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67. The number of carbonic acid molecules formed every second in the presence of carbonic anhydrase enzyme

A. 5 lakhs

B. 3 lakhs

C. 6 lakhs

D. 2 lakhs

Answer: C

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68. Most abundant substance in all living organism is

A. Micromolecules

B. Macromolecules

C. Cellular pool

D. Water 70.

Answer: D

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69. Most common type of sugar present in nucleus

A. Triose

B. Erythrose

C. Pentose

D. Hexose

Answer: C

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70. Identify set of polysaccharides from the following

A. Glucose , Glucogen , Sucrose

B. Glygogen , Sucrose , Maltose

C. Maltose , Lactose , Sucrose

D. Glycogen , Cellulose , Starch

Answer: D

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71. Animal starch is

A. Amylum

B. Amylose

C. Glycogen

D. Insulin

Answer: C

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72. Successive glucose residues in a cellulose molecule are linked by

A. $\alpha 1 \rightarrow 4$ glycosidic linkages

B. $\beta 1 \rightarrow 4$ glycosidic linkages

C. $\alpha 1 \rightarrow 6$glycosidic linkages

D. $\beta 1 \rightarrow 6$glycosidic linkages

Answer: B

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73. Enzymes catalyse reactions by

A. Decreasing activation energy

B. Increasing activation energy

C. Without changing activation energy

D. All the above

Answer: A

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74. An unstable state where a bond may be formed or bond may be broken is called

A. Transition state

B. Initial state

C. Final state

D. None of the above

Answer: A

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75. Which of the following options represents correct set of steps for an enzyme catalysed reaction

A. $E + S \rightarrow ES \rightarrow E + P$

B. $E \rightarrow ES \rightarrow EP$

C. $S \rightarrow P$

D. 1 or 3

Answer: A

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76. Which of the following factor/factors do not change when a catalysed reaction is compared with uncatalysed reaction

A. Activation energy

B. Rate of reaction

C. Overall change in free energy

D. All the above

Answer: C

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77. The shape of the curve obtained when substrate concentration is plotted against velocity of reaction

A. Rectangular hyperbola

B. Bell shaped curve

C. Sigmoid curve

D. None of the above

Answer: A

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78. With the increase is substrate concentration the rate of enzymatic activity increases

A. Until half the number of active sites on enzyme molecule are filled by substrate

B. Until all the active sites on the enzyme are filled by substrate

C. Until all substrate molecules are used up

D. None of the above

Answer: B

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79. An enzyme shows maximum catalytic activity

A. Above optimum temperature

B. Below optimum temperature

C. At optimum temperature

D. None of the above

Answer: C

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80. When pH or temperature is plotted against enzyme activity the shape of curve obtained is

A. A parabola

B. A bell shaped curve

C. A rectangular hyperbola

D. A sigmoid curve

Answer: B

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81. Malonate is a competitive inhibitor of

A. Oxalo acetic acid

B. Glutamic acid

C. Succinic acid

D. Fumari acid

Answer: C

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82. Malonic acid decreases the catalytic efficiency of

A. Malate dehydrogenase

B. A keto glutaric dehydrogenase

C. Succinic dehydrogenase

D. Citric synthetase

Answer: C

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83. A competitive inhibitor binds to the enzyme at the

A. Active site

B. Allosteric site

C. To enzyme substrate complex

D. None of the above

Answer: A

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84. Chitin is component of cell wall of

A. 1)Bacteria

B. 2)Fungi

C. 3)Algae

D. 4)Angiosperms

Answer: B

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85. Enzymes isolated from organisms which line in extreme high temperatures (eg , hot vents and sulphur springs) show catalytic activity in a 93 94 98 range of

A. $40 - 60^\circ C$

B. $60 - 80^\circ C$

C. $80 - 90^\circ C$

D. $40 - 45^\circ C$

Answer: C

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86. When the temperature is increased then enzyme substrate reaction

A. increases

B. decreases

C. stops

D. Remains unchanged

Answer: A

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87. The effect of bacterial pathogens is decreased using

A. Competitive inhibitors

B. Allosteric modulators

C. Non - competitive inhibitors

D. All the above

Answer: A

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88. Inhibitor effects

A. Turn over number of enzyme

B. Km value of an enzyme

C. Rate of reaction (V) of an enzyme

D. All the above

Answer: D

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89. Enzymes are divided into different classes based on the type of

A. 1)Substrate they act

B. 2)Type of reaction they catalyse

C. 3)On reaction mechanism

D. 4)None of the above

Answer: B

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90. What are different classes of enzymes? Explain any two with the type of reactions they catalyse.

A. 4

B. 6

C. 3

D. 8

Answer: B

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91. Every enzyme in IUB system of classification has been given a code number which consists of

A. 6 digits

B. 8 digits

C. 4 digits

D. 2 digits

Answer: C

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92. Each class is divided into subclasses whose number ranges between

A. 44296

B. 44294

C. 44299

D. 44233

Answer: C

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93. Enzymes included in oxido reductases class catalyse the following reaction

A. Transamination

B. Oxidation

C. Reduction

D. 2 & 3

Answer: D

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94. Which of the following group of enzymes helps in catalysing a transfer of a group (other than hydrogen) between a pair of substrates ?

A. Isomerases

B. Oxido reductases

C. Transferases

D. Ligases

Answer: C

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95. Enzymes that catalyse removal of groups from substrates by mechanisms other than hydrolysis, and addition of groups to double bonds, are called

A. Ligage

B. Amylase

C. Aminases

D. Lyases

Answer: D

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96. Enzymes which catalyse intra molecular rearrangement are kept under

A. Isomerases

B. Oxidoreductases

C. Hydralases

D. None of the above

Answer: A

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97. Enzymes which catalysed joining of C - O, C - S, P - O etc. between two compounds are kept under

A. 1)Hydrolases

B. 2)Isomerases

C. 3)Transferases

D. 4)Ligases / synthetases

Answer: D

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98. Enzymes which cleave bonds by using water molecule belong to

A. Transferases

B. Hydrolases

C. Lyases

D. All the above

Answer: B

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99. The non protein part of enzyme is called

A. Apoenzyme

B. Prosthetic group

C. Coenzyme

D. 2 & 3

Answer: D

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100. Which of the following is a co-factor and tightly bound to the apoenzyme?

A. Metal ion

B. Coenzyme

C. Prosthetic group

D. 1 and 3

Answer: D

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101. "Haem" is prosthetic group for which of the following enzyme or enzymes

A. Catalase

B. Peroxidase

C. Oxidase

D. 1 & 2

Answer: D

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102. Which of the following type of cofactors are loosely associated with apoenzyme

A. Coenzyme

B. Prosthetic group

C. Vitamins

D. None of the above

Answer: A

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103. Which of the following type of biomolecule is an essential chemical component of many coenzymes ?

A. Amino acids

B. Nucleic acids

C. Lipids

D. Vitamins

Answer: D

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104. Niacin is component of the following coenzyme

A. NADP

B. FMN

C. FAD

D. All the above

Answer: A

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105. Zinc acts as cofactor for the following enzyme

A. Glutamine synthetase

B. Carboxy peptidase

C. Malate dehydrogenase

D. Nitrate reductase

Answer: B

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106. The total number of protein-encoding amino acids is

A. 5

B. 20`

C. 12

D. 18

Answer: B

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107. The total number of type of nucleotides is

A. 5

B. 21

C. 12

D. 18

Answer: A

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108. Phosphorylated nitrogenous compounds are a part of

A. Glycolipids

B. Nucleolipids

C. Phospholipids

D. All the above

Answer: C

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109. The most abundant protein in the animal world is

A. Collagen

B. Rubisco

C. GLUT - 4

D. All the above

Answer: A

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110. Apoenzyme is a

Non protein part of an conjugated enzyme

Protein part of a conjugated enzyme

Cofactor

Enzyme like molecule

A. Non protein part of an congugated enzyme

B. Protein part of a conjugated enzyme

C. Cofactor

D. Enzyme like molecule

Answer: B

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111. A simple enzyme contains

A. Apoenzyme and Metallic ion

B. Apo - enzyme and Prosthetic group

C. Only protein part

D. All the above

Answer: C

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112. I) $\text{Glucose} \xrightarrow{a} \text{glucose} - 6 - \text{phosphate}$

II) $\text{Glucose} - 6 - \text{phosphate} \xrightarrow{b} \text{fructose} - 6 - \text{phosphate}$

. a . and . b . represent two enzymes which catalyse the above reactions .

The enzymes belong to classes

A. a - Transferases , b - Isomerases

B. a - Isomerases , b - Hydrolases

C. a - Ligases , b - Hydrolases

D. a - Oxidoreductases , b - isomerases

Answer: A

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113. Inhibitors which bind to enzyme molecule but not at the active site are

A. Non - competitive inhibitors

B. Competitive inhibitors

C. Allosteric inhibitors

D. 1 and 3

Answer: D

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114. Inhibition of enzyme action due to acculumation of end products is called

A. Competitive inhibition

B. Non competitive inhibition

C. Feedback inhibition

D. Metabolic inhibition

Answer: C

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115. Enzymes are active

A. Even in small concentration

B. Only in small concentration

C. Only in large concentration

D. Even in the absence of H_2O

Answer: A

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Exercise I Enzymes Introduction

1. Nucleic acid with catalytic activity are called

A. Apoenzymes

B. Abzymes

C. Ribozymes

D. Isozymes

Answer: C

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2. Enzymes are physically A chemically B and functionally C. A , B , C respectively are

A. Colloids , proteins , nucleic acids

B. Nucleic acids , proteins , Colloids

C. Colloids , proteins , catalysts

D. Colloids , nucleic acids Catalysts

Answer: C

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3. An enzyme can perform its catalytic activity in _____ structure

A. Primary

B. Secondary

C. Tertiary

D. Quarternary

Answer: C

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4. Components of an enzymes are mostly

A. Polypeptide chains

B. Polypeptide chains and non proteinaceous substances

C. Polynucleotides and non proteinaceous sub stances

D. 1 or 2

Answer: A

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5. Enzymes belong to which class of compounds ?

A. Polysaccharides

B. Polypeptides

C. Polynitro heterocyclic

D. Hydrocarbons

Answer: B

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6. "An enzyme is a protein with catalytic property " was stated by

A. Louis Pasteur

B. Dixon and Web

C. Haldane

D. Northrop

Answer: B

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7. The term " Enzyme " was coined by

A. Louis Pasteur

B. Edward Buchner

C. Gay Lussac

D. W.Kuhne

Answer: D

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8. First identified enzyme was

A. Protease

B. Lipase

C. Zymase

D. Urease

Answer: C

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9. The protein nature of enzyme was first established by

A. Edward Buchner

B. Louis Pasteur

C. John Northrop

D. James Sumner

Answer: C

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10. The enzyme secreted by digestive glands of Nepenthes is

A. Pepsin

B. Amylase

C. Urease

D. Catalase

Answer: A

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11. Enzymes differ from ordinary catalysts , because the enzymes consist of

A. vitamins

B. non - proteins

C. proteins

D. minerals

Answer: C

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12. " All enzymes are proteins " . This statements is now modified because an apparent exception to the biological truth is

A. arylsulfatase

B. dehydrogenase

C. ribozyme

D. nitroreductase

Answer: C

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13. A ribozyme is

A. an enzyme associated with ribosome

B. an catalytic RNA

C. an enzyme that helps in ribose synthesis

D. an enzyme that joins ribose with adenine Chemical reactions

Answer: B

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Exercise I Chemical Reactions

1. Similar character between enzymes and inorganic catalysts is

A. 1)Catalyse a reaction without undergoing any change

B. 2)Protein nature

C. 3)Sensitive to high temperature and pressure

D. 4)All the above

Answer: A

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2. Choose the correctly matched from the following.

A. Physical process - change in state of matter

B. Physical process - change in shape without breaking bonds

C. Chemical process - Breaking or making of bonds

D. All the above

Answer: D

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3. $C_6H_{12}O_6 + A \rightarrow 2C_3H_4O_3 + B.$

A & B in the above reaction are

A. $2H_2O, CO_2$

B. $O_2, 2CO_2$

C. $2H_2O, O_2$

D. $O_2, 2H_2O$

Answer: D

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4. In biological reactions making or breaking of bonds in a chemical process are

A. Catalysed by enzymes

B. Catalysed by inorganic catalysts

C. Temperature changes

D. All the above Properties & Nature of enzyme Action

Answer: A

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Exercise I Properties Nature Of Enzyme Action

1. Choose the correct statement

A. Free energy required for a substrate to react is called energy for reaction

B. Difference in ground state energy levels of substrates and product is called activation energy

C. Energy for reaction will be more in the presence of enzyme

D. Enzyme never changes the equilibrium of a reaction

Answer: D

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2. Choose the true statement from the following

A. Enzymes do not change the equilibrium of a reaction but are consumed in that reaction

B. Enzymes are active only in minute quantities and also at their optimum pH only

C. Enzymes increase the activation energy and speed up the rate of reaction

D. Enzymes are heat sensitive because they are proteins

Answer: D

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3. Choose the correct statement about enzyme function .

A. Acts only on specific substrate

B. Require optimum temperature and pH for maximum activity

C. Enhance the rate of reaction of lowering activation energy of reaction

D. All the above

Answer: D

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4. Turnover number of an enzyme represents

A. Number of enzyme molecules involved

B. Number of substrate molecules converted

C. Number of products formed

D. 1 & 2

Answer: B

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5. $E + S \rightarrow [ES] \rightarrow [EP] \rightarrow E + P$ Formation of transition state structure in the above reaction occurs at this stage

A. E + P

B. ES

C. P

D. S

Answer: B

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6. Stability of a substrate molecule is dependent on

A) Energy

B) Structure

C) Enzyme

A. A , B , C

B. A only

C. A , B only

D. A , C only

Answer: A

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7. Choose the correct statement about an enzyme catalysed reaction

A. Enzymes enhance the rate of reaction by increasing activation energy of the substrate

B. The difference between average energy and transition energy of substrate is called activation energy

C. Heating is required for an exothermic reaction

D. Substrate should reach transition energy state only in endothermic reactions .

Answer: B

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8. The energy that is required to react is called

A. Potential energy

B. Kinetic energy

C. Activation energy

D. Radiant energy

Answer: C

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9. The lock and key model of enzyme action illustrate that a particular enzyme molecule

A. may be destroyed and resynthesized several times

B. interacts with a specific type of substrate molecule

C. reacts at identical rates under all conditions

D. forms a permanent enzyme - substrate complex

Answer: B

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10. Which enzyme shows highest turn over number ?

A. Nuclease

B. Phosphofructokinase

C. Carbonic anhydrase

D. Pepsin

Answer: C

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11. Choose the correct substrate - enzyme pair

A. Casein - Rennin

B. Protein - Amylase

C. Carbohydrate - lipase

D. Lactose - Maltase

Answer: A

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Exercise I Factors Affecting Enzymes Activity

1. The rate of a reaction doubles or decreases by half when temperature changes by

A. $1^{\circ} C$

B. $5^{\circ} C$

C. $10^{\circ} C$

D. $25^{\circ} C$

Answer: C

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2. $A + CCl_4 + KOH \rightarrow$ Salicylic acid 'A' in above reaction is :

A. NAD

B. ADP

C. Pi

D. H_2O_2

Answer: D

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3. Enzymes that catalyse the substrate level phosphorylation reactions in Glycolysis belong to

A. Oxido - reductases

B. Phosphatases

C. Transaminases

D. Transphosphorylases

Answer: D

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4. e.coded by E.C.2.7.1.2 in modern classification

A. Hexokinase

B. Aldolase

C. Enolase

D. Glucose 6 - phosphotransferase

Answer: D

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5. Enzymes which are associated with the forma tion of new bonds using energy from ATP hydrolysis are

A. Lyases

B. Ligases

C. Kinases

D. Reductases

Answer: B

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6. $\text{Glucose} + \text{ATP} \rightarrow \text{Glucose6 - phosphate} + \text{ADP}$ The enzyme which catalyses the above reaction belongs to this class

A. 1

B. 3

C. 4

D. 2

Answer: D

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7. Enzymes generally have

A. same pH and temperature optima

B. same pH but different temperature optima

C. different pH but same temperature optima

D. different pH and different temperature optima

Answer: C

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8. Which of the following is required for enzyme action ?

A. Low K_m value

B. High K_m value

C. Low ki value

D. High Ki value

Answer: A

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9. The temperature range, at which enzymes are maximum functional is

A. $30 - 45^{\circ} C$

B. $25 - 35^{\circ} C$

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

D. $40 - 65^{\circ} C$

Answer: C

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10. Michaelis - Menten constant (K_m) of an enzyme is substrate concentration at which the reaction attains

A. its maximum velocity

B. half its maximum velocity

C. double its maximum velocity

D. its normal velocity

Answer: B

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11. Correct statement about non competitive inhibitor

A. Structurally similar to substrate

B. Changes structure of enzymes

C. Binds to active site

D. Promote catalysis after binding to enzyme

Answer: B

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12. Metabolic inhibitors which prevent active uptake of ions in plants are

A. Competitive

B. Non - competitive

C. Allosteric

D. All

Answer: B

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13. Feed back inhibition is due to accumulation of

A. Substrates

B. Products

C. Metal ions

D. Pathogens

Answer: B

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14. K_m value is expressed as the substrate concentration at

A. $V_{\max}$

B. $\frac{1}{2}V_{\max}$

C. $V_{\max} \times 2$

D. $V_{\max} \times 4$

Answer: B

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Exercise I Enzymes Inhibition

1. Inhibition of enzyme action due to acculumation of end products is called

A. Competitive inhibition

B. Non competitive inhibition

C. Feedback inhibit on

D. Metabolic inhibition

Answer: C

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2. Lock & Key model of enzyme action was proposed by

A. Paul Fields

B. D.D. Woods

C. Emil Fischer

D. Koshland

Answer: C

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3. An examle of competitive inhibition fo an enzyme is the inhibition of :

A. succinic dehydrogenase by malonic acid

B. cytochror oxidase by cyanide

C. hexokinase by glucose - 6 - phosphate

D. carbonic anhydrase by carbon dioxide

Answer: A

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4. Which of the following is true for competitive enzyme inhibition ?

A. increases K_m without affecting $V_{\max}$

B. decreases K_m without affecting $V_{\max}$

C. increases $V_{\max}$ without affecting K_m

D. decreases both $V_{\max}$ and K_m

Answer: A

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5. Enzymes which possess an additional site other than active

A. apoenzymes

B. conjugated enzymes

C. holoenzymes

D. allosteric enzymes

Answer: D

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6. Feed back inhibition of an enzymatic reaction is caused by

A. enzyme

B. substrate

C. end product

D. none of these

Answer: C

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7. Substance which bring about changes in allosteric sites are called.

A. promoters

B. activators

C. modulators

D. inhibitors

Answer: D

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8. In a reaction, 120 substrate molecules are converted to products in 5 minutes . TON of enzyme is 12. What is the number of enzymes catalysing the reaction ?

A. 10

B. 2

C. 12

D. 8

Answer: B

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9. Fastest enzyme is _____ and its acts upon _____

A. Carbonic anhydrase and H_2CO_3

B. Alcohol dehydrogenase and C_2H_5OH

C. Catalse and H_2O_2

D. Kinase & glucose

Answer: A

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10. Inhibitors which bind to enzyme molecule but not at the active site are

A. A & B

B. B & C

C. A & C

D. A , B , C

Answer: B

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Exercise I Classification And Nomenclature Of Enzymes

1. Identify the ascending sequence of the classes of the following enzymes as per the IUB system

I) Arginosuccinase

II) Nitrate reductase

III) Pepsin

IV) Hexokinase

A. II , IV , I and III

B. IV , I , III and II

C. II , IV , III and I

D. III , I , IV and II

Answer: C

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2. Choose the incorrect statement

A. Some enzymes are named without suffix 'ase'

B. FAD can act as both coenzyme and prosthetic group

C. In IUB nomenclature , all enzymes may not provide the information of enzyme catalysis

D. Copper act as both competitive inhibitor and inorganic cofactor for cytochrome C oxidase

Answer: C

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3. Choose the correct combination

A. Trypsin - Class I - Cleavage of peptide bond

B. Succinic dehydrogenase - Fe as cofactor Malonic acid

C. Hexokinase - Class II - Rearrangement of atoms within a molecule

D. Nitrate reductase - MO as Cofactor - Removes O_2 from substrate

Answer: D

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4. The number which represent class to which transphorphorylase belongs to

A. 2

B. 1

C. 7

D. 6

Answer: A

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5. Conversion of substrate to products is associated with change in the structure but not in the molecular weight is

A. Isomerisation

B. Oxidation

C. Cleavage reaction

D. Phosphorylation

Answer: A

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6. Find out the wrong matching

A. Dehydrogenase - Oxidoreductase

B. Kinase - Transferase

C. Phosphatase - Hydrolase

D. Synthetases - Lyases Transaminase

Answer: D

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7. $\text{Asparticacid} + \text{A} \xrightarrow{\text{Transaminase}} \text{B} + \text{Glutamic acid}$

In the above reaction A and B respectively,

A. Oxaloacetic acid , α - ketoglutaric acid

B. α - ketoglutaric acid, malic acid

C. Oxalo acetic acid , succinic acid

D. α - Ketoglutaric acid , Oxalo acetic acid

Answer: D

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8. What is the end product of Glycolytic reaction catalysed by the enzyme belonging to I sub class of I class in IUB classification

A. DHAP

B. Pyruvic acid

C. 1 , 3 BPGA

D. 3 - PGA

Answer: C

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9. Fructose 1,6 bisphosphate $\rightarrow$ Fructose 6 phosphate + Pi The enzyme that catalyses the above reaction belongs to this class

A. Transferases

B. Oxidoreductases

C. Ligases

D. Hydrolases

Answer: D

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10. Glutamate pyruvate transaminase belongs to which of the following categories of enzymes ?

A. Oxidoreductases

B. Hydrolases

C. lyases

D. Transferases

Answer: D

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11. Nomenclature of enzyme consists of

A. first substrate name then reaction type

B. first reaction type and then product name

C. only reaction type

D. only product type

Answer: A

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12. Protein digesting other proteins belongs to IUB class

A. Oxidoreductase

B. Transferases

C. Hydrolases

D. Isomerases

Answer: C

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13. In enzyme code , one of the following is always in a single digit

A. class

B. subclass

C. sub sub class

D. serial number

Answer: A

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14. ATP breakdown is prerequisite for

A. Oxidoreductases

B. Transferases

C. Hydrolases

D. Ligases

Answer: D

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15. A pair of enzymes which catalyse the transfer of groups

A. Oxidoreductases & transferases

B. Oxidoreductases and ligases

C. Transferases and lyases

D. Lyases and ligases

Answer: A

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16. A pair of enzymes which catalyse the break down of bonds are

A. Oxidoreductases & transferases

B. Oxidoreductases and ligases

C. Hydrolases and lyases

D. Lyases and ligases

Answer: C

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17. K_m value represents

A. Affinity of enzyme for substrate

B. Affinity of enzyme for product

C. Affinity of enzyme for inhibitor

D. None

Answer: A

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18. A cofactor that forms coordination bonds with both substrate and side chains of enzymes is

A. Inorganic cofactors

B. Organic cofactor

C. Vitamins

D. Proteins

Answer: A

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19. Niacin is a vitamin present in

A. NAD

B. NADP

C. FAD

D. 1 & 2

Answer: D

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20. Zn is a cofactor for

A. Carboxy peptidase

B. Catalase

C. Peroxidase

D. Rubisco

Answer: A

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21. Vitamin present in coenzyme .A. is

A. Lipoic acid

B. Pentanoic acid

C. Pantothenic acid

D. Vitamin B_6

Answer: C

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22. Zn^{2+} ions bound tightly to apoenzyme part of this holoenzyme

A. hexokinase

B. catalase

C. carbonic anhydrase

D. pyruvic kinase

Answer: C

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23. These components can not form holoenzyme

A. Apoenzyme and Co - enzyme

B. Apoenzyme and Prosthetic group

C. Apoenzyme and Co - factor

D. Co - enzyme and Prosthetic group

Answer: D

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24. A working combination of an apoenzyme and a co - enzyme is termed as

A. prosthetic group

B. enzyme - substrate complex

C. holoenzyme

D. enzyme product complex

Answer: C

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Exercise Ii Carbohydrates

1. Iodine solution is used for testing the presence of

A. Carbohydrates

B. Proteins

C. Fats

D. Starch

Answer: D

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2. One of the following is a polysaccharide

A. Chitin

B. Glucose

C. Sucrose

D. Maltose

Answer: A

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3. Jute is composed by

A. Lignin

B. Suberin

C. Hemicellulose

D. Cellulose

Answer: A

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4. Highest quantity of cellulose can be traced in

A. lipid

B. coir

C. hemp

D. cotton

Answer: D

Watch Video Solution

5. Fehling's solution is used for detection of

A. Glucose

B. Starch

C. All types of carbohydrates

D. Fats

Answer: A

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6. Cellulose is

A. Tetra saccharide

B. Homopolysaccharide

C. Penta polysaccharide

D. Hetero polysaccharide

Answer: B

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7. Insulin is

A. Polysaccharide

B. Protein

C. Oligosaccharide

D. Lipid

Answer: B

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8. The following compound is the smallest

A. Maltose

B. Cellbiose

C. Glycine

D. Cellulose

Answer: C

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9. Which one of the following glycosidic linkage is found in maltose ?

A. β - 1 , 4

B. α - 4 , 1

C. β,- 4 , 1

D. α -1,4

Answer: A

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10. Lactose is a polysaccharide of

A. Glucose + fructose

B. Glucose + glucose

C. Glucose + galactose

D. Galactose + galactose

Answer: C

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11. In some fruits like Bhindi the mucilage is made up of

A. Galactose

B. Mannose

C. Both (1) and (2)

D. Lactose

Answer: C

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12. Which of the following is reducing sugar ?

A. Glucinol

B. Galactose

C. β- galactosidase

D. None of these

Answer: B

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13. On heating glucose with Fehling solution , we get a precipitate whose colour is

A. Orange

B. Red

C. Black

D. White

Answer: B

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14. Raffinose on hydrolysis gives

A. Glucose , fructose and lactose

B. Glucose , fructose and galactose

C. Fructose , glucose and erithrose

D. Glucose , fructose and mannose

Answer: B

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15. Which of the following is called as Levulose ?

A. Glucose

B. Fructose

C. Lactose

D. Maltose

Answer: B

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16. Amylopectin is a polymer of

A. β- D glucose

B. α - D glucose

C. β- D fructose

D. α - D fructose

Answer: B

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17. Starch is changed into disaccharide in presence of ?

A. Maltase

B. Zymase

C. Diastase

D. Lactase

Answer: C

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18. Saliva helps in the digestion of

A. Fats

B. Starch

C. Proteins

D. Vitamins

Answer: C

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19. Cellulose is the polymer of

A. L - fructose

B. D - fructose

C. D - glucose

D. Amylose

Answer: C

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20. (A) Cellulose is natural polymer.

(R) Cellulose is obtained from plants.

A. Hydrogen bonding

B. β (1 , 4) glycosidic linkage

C. Cell wall material

D. Vegetable matter

Answer: A

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21. Malt sugar is

A. Lactose

B. Glucose

C. Maltose

D. Fructose

Answer: C

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22. Table sugar is

A. Lactose

B. Trehalose

C. Sucrose

D. Fructose

Answer: C

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23. Raffinose is made up of

A. Galactose + Glucose + Fructose

B. Maltose + Glucose + Galactose

C. Galactose + Fructose + Maltose

D. All the above

Answer: A

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24. Which of the following are non - reducing sugars ?

A. Sucrose

B. Stachyose

C. Lactose

D. (1) & (2)

Answer: D

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25. Which of the following compound gives red colour with iodine solution ?

A. Starch

B. Glycogen

C. Amylopectin

D. None of the above

Answer: B

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26. Reserve food material in Asteraceae family members is in the form of

A. Cellulose

B. Starch

C. Inulin

D. Pectin

Answer: C

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27. Nitrocellulose is used as/in

A. Preparaion of bags , ropes

B. Preparation of paper

C. Preparation of cosmetics

D. Propellent explosive

Answer: D

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28. Which of the following mucopolysaccharide is used as laxative stabilizer ?

A. Agar - Agar

B. Carragenin

C. Heparin

D. Funori

Answer: A

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29. Agar - Agar is present in the cell wall of

A. Brown algae

B. Red algae

C. Green algae

D. All the above

Answer: B

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30. An alcohol of mannose found in brown algae is

A. Sorbitol

B. Manitol

C. Dulcitol

D. All the above

Answer: B

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Exercise Ii Amino Acids

1. Which of the following amino acids is essential for metabolism ?

A. Serine

B. glycine

C. Phenylalanine

D. Aspartic acid

Answer: C

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2. The functional group which is found in amino acid is:

A. Arginine

B. Histidine

C. Glycine

D. Glutaimine

Answer: A

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3. A stronger hydrogen bonding is present in

A. Pleated sheet

B. α - helix

C. Polymer

D. Hydrogen bond

Answer: A

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4. The functional group which found in amino acid is

A. $-COOH$ group

B. $-NH_2$ group

C. $-CH_3$ group

D. both (1) and (2)

Answer: D

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5. A tripeptide contains peptide links

A. 3

B. 2

C. 6

D. 4

Answer: B

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6. At isoelectric point, amino acid is present as

A. $H_2N - CHR - COOH$

B. $H_2N - CHR - COOH$

C. $NH_2 - CHR - COO^-$

D. $H_2N^+ - CHR - COO^-$

Answer: D

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7. Nature of aqueous solutions of two different amino acids X and Y are acidic and basic. Now X and Y are.

A. Alanine and valine

B. Aspartic acid and aspargine

C. Glutamine and gutamine acid

D. Aspartic acid and lysine

Answer: D

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8. Which of the following molecule is incapable of forming zwitter ion ?

A. Glycine

B. Alanine

C. Valine

D. Picric acid

Answer: D

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9. Nature of amino acids (acidic or basic) is decided based on the number of

A. $-COOH$ groups

B. $-NH_2$ groups

C. Both (1) and (2)

D. None of the above

Answer: C

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10. Three letter code for Glutamine is

A. Glu

B. Gin

C. Pro

D. Met

Answer: B

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11. Number of base pairs present in total DNA of human cell (human genome) is around

A. 4.3

B. 3.6

C. 2.1

D. 5.8

Answer: B

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12. Keratin is a type of

A. Nucleoprotein

B. Scleroprotein

C. Lipoprotein

D. All the above

Answer: B

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13. Plant photomorphogenetic reactions are media ted by a pigment

A. Phytochrome

B. Anthocyanin

C. Cytochrome

D. All the above

Answer: A

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Exercise Ii Proteins

1. Which of the following is a conjugated protein ?

A. Keratin

B. Albumin

C. Collagen

D. Haemoglobin

Answer: D

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2. Dyenin is unique protein of

A. Ribosome

B. Centrioles

C. Flagella

D. Nucleus

Answer: C

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3. Which of the following will have only amino acids as its end product

A. Simple proteins

B. Conjugated proteins

C. Derived proteins

D. Globular proteins

Answer: A

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4. The caesin of milk is a

A. Lipid

B. Carbohydrate

C. Protein

D. Steroid

Answer: C

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5. Which one of the following is a contractile protein

A. Collagen

B. Elastin

C. Tropomyosin

D. Keratin

Answer: B

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6. Simplest amino acid which is optically inactive is

A. Glycine

B. Proline

C. Leucine

D. Tryptophan

Answer: A

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7. Which of this amino acid is not hydrophilic?

A. Histidine

B. Phenylalanine

C. Glycine

D. Lysine

Answer: B

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8. Which of the following contains nitrogen ?

A. Fats

B. Proteins

C. Carbohydrates

D. Hydrocarbons

Answer: B

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9. β - pleated structure of proteins is

A. Primary structure

B. Secondary structure

C. Tertiary structure

D. Quaternary structure

Answer: B

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10. Which of the following statement is not correct ?

A. Proteins are polyamides formed from amino acids

B. Except glycine, all other amino acids show optical activity

C. Natural proteins are made up of L-isomers of amino acids.

D. In a amino acids, $-NH_2$ and $-COOH$ groups are attached to different carbon atoms

Answer: D

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11. The helical structure of proteins is stabilised by

A. H-bonding

B. Vander wall's forces

C. Ionic bond

D. Peptide bond

Answer: A

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12. The function of enzymes in the living system is to

A. Transport oxygen

B. Provide immunity

C. Catalyse biochemical reactions

D. Provide energy

Answer: C

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13. Which one of the following is not a protein ?

A. Wool

B. Nail

C. Hair

D. DNA

Answer: D

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14. Proteins contain the following chemical linkages in addition to $-CO-NH-$ linkages

A. $NH-\ -\ -\ -O=C$

B. $-HS=SH-$

C. $C=N....H-O-$

D. $-O-O-$

Answer: B

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15. Proteins cannot be denatured by the addition of

A. Water

B. Acids

C. Detergents

D. Heat

Answer: A

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16. In which of the following structures proteins are more functional

A. Primary structure

B. Tertiary structure

C. Quarternary structure

D. Secondary structure

Answer: B

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Exercise Ii Lipids

1. The most abundant type of lipids in plants and animals is

A. Triglycerides

B. Phospholipids

C. Derived lipids

D. Glycolpids

Answer: A

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2. Palmitic acid contains - number of carbon atoms

A. 16

B. 18

C. 20

D. 24

Answer: A

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3. Which one of the following fats contains unsaturated fatty acids?

A. Ghee

B. Curd

C. Safflower oil

D. Fish oil

Answer: C

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4. The following is one of the important biolegical roles of lipids

(A) enzyme activators

(B) energy source

(C) emulsifiers

(D) vitamin carriers

A. A and D

B. B and C

C. A, C and D

D. A, B, C, D

Answer: D

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5. Hydrolysis of fats and oils yields-

A. Ester

B. Adipose

C. CO_2

D. Carboxylic acid

Answer: D

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6. Lipids are stored in

(A) Liver

(B) Muscles

(C) Adipose tissues

(D) Bone marrow

The correct combination is

A. Only C

B. Only D

C. C and D only

D. All

Answer: C

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7. The most concentrated source of energy in the human body is

A. Fats

B. Sugars

C. Proteins

D. Nucleic acid

Answer: A

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8. A carbohydrate, galactose is present in

A. Terpenes

B. Glycerophosphatides

C. Glycolipids

D. Phosphoinositides

Answer: C

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9. In plants, lipids occur in

A. Fruits

B. Nuts

C. Seeds

D. All the above

Answer: D

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10. Which of the following fatty acid is saturated?

A. Oleic acid

B. Linoleic acid

C. Stearic acid

D. Chaulmoogric acid

Answer: C

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11. Which one of the following fats contains unsaturated fatty acids?

A. Ghee

B. Curd

C. Gingely oil

D. Fish oil

Answer: C

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12. The conversion of oils into fats is by

A. Hydrolysis

B. Oxidation

C. Esterification

D. Hydrogenation

Answer: D

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13. Two fatty acid monomers are joined by

A. Ester bond

B. Peptide bond

C. Phospho diester bond

D. Hydrogen bond

Answer: A

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14. The most unsaturated fatty acid is

A. Palmitic acid

B. Stearic acid

C. Oleic acid

D. Arachidic acid

Answer: C

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15. The number of fatty acid molecules present in de palmito stearin is

A. One

B. Two

C. Three

D. Four

Answer: C

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16. The degree of unsaturation in a fat is estimated by

A. Iodine value

B. Saponification number

C. Reichert meissl number

D. Polenske number

Answer: A

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17. The number of milligrams of KOH required to saponify 1 gm of fat is called

A. Saponification number

B. Reichert Meissl number

C. Iodine value

D. Acetyl number

Answer: A

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18. Lipids are not soluble in water because

A. Lipids are neutral

B. Lipids are hydrophilic

C. Lipids are hydrophobic

D. Zwitter ion complex of lipids

Answer: C

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Exercise Ii Nucleic Acids

1. Purine without ketonic group is

A. Adenine

B. Adenosine

C. Cytidine

D. Thymidine

Answer: A

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2. Bases common to RNA and DNA are

A. Adenine, Guanine, Cytosine

B. Adenine, Guanine, Thymine

C. Adenine, Uracil, Cytosine

D. Guanine, Uracil, Thymine

Answer: A

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3. The pyrimidine bases present in DNA are

A. Cytosine and thymine

B. Thymine and uracil

C. Cytosine and uracil

D. Uracil and guanine

Answer: C

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4. In nucleic acids, the sequence is represented as

A. Phosphate -base -sugar

B. Sugar - base - phosphate

C. Base -sugar - phosphate

D. Base- phosphate - sugar

Answer: C

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5. I both DNA and RNA, heterocyclic base and phosphate ester linkages are at

A. C_5' and C_2' respectively of the sugar molecule

B. C_2' and C_5' respectively of the sugar molecule.

C. C_1' and C_5' respectively of the sugar molecule.

D. C_5' and C_1' respectively of the sugar molecule

Answer: C

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6. Number of aminoacids present in one turn of α helix is

A. 2.9×10^5

B. 6.6×10^9

C. 3.3×10^7

D. 3.3×10^9

Answer: D

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7. The ratio of number of $A + G$ to the number of $C + T$ in DNA of E. Coli species is

A. 1.1

B. 0.93

C. 1.52

D. 1.8

Answer: B

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8. Number of C = O groups in thymine and in X are equal. Now, X is

A. Cytosine

B. Uracil

C. Adenine

D. Guanine

Answer: B

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9. The sugar unit present in the nucleotides of RNA is

A. D-β-ribose

B. L-β-ribose

C. D-α -ribose

D. L-α -ribose

Answer: D

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10. In the nucleotide namely adenosine-5'-tri phosphate, the sequence of linkages among N(base), C(sugar) and P(phosphate) is

A. $C-P-N-P-P$

B. $N-C-P-P-P$

C. $P-C-N-P-P$

D. $P-P-P-C-N$

Answer: B

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11. Incorrect relationship regarding all types of living species is

A. A + G = C+T

B. A + G = C + U

C. (A + T)/(C + G) = 1

D. $\frac{A+T}{C+G} \neq 0$

Answer: C

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12. The reason for double helical structure of DNA is the operation of:

A. Vander waal's forces

B. Dipole-dipole interaction

C. Hydrogen bonding

D. Electrostatic attractions

Answer: C

Watch Video Solution

13. The ratio of the number of ketonic groups in cytosine, thymine and uracil is

A. $1:2:2$

B. $2:1:2$

C. $2:2:1$

D. $1:1:1$

Answer: A

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14. In nucleosides, both base and sugar are joined by

A. Hydrogen bond

B. N-glycoside bond

C. -S-S-bond

D. (1) and (3)

Answer: B

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15. The number of hydrogen bonds present in the sequence of a stretch of a double helical DNA

5. ATGCCTAA 3. is

A. 16

B. 19

C. 24

D. 20

Answer: B

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16. Two samples of DNA, A and B have melting points 340K and 350 K respectively. This is because

A. B has more GC content than A.

B. A has more GC content than B

C. A has more AT content than B

D. Both have same AT content

Answer: C

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17. Which one of the following sequence of groups in AMP ?

A. Sugar- base - phosphate

B. Base - sugar - phosphate

C. Phosphate - sugar -base

D. Phosphate - acid - sugar

Answer: B

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18. The process in which strands of melted DNA hybridise on cooling is known as

A. Melting

B. Freezing

C. Annealing

D. Denaturation

Answer: C

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19. Insulin has two polypeptide chains. These polypeptide chains are held together by

A. Peroxy linkage

B. Disulphide linkage

C. Diazo bonding

D. H-bonding

Answer: B

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20. Which one of the following statement is incorrect regarding the protein synthesis?

A. Protein synthesis takes place from N- terminal amino acid end to C-terminal end.

B. Sequence of amino acids incorporated in protein chain along the chain of mRNA in $5' \rightarrow 3'$ direction.

C. The codon on m-RNA specifies the particular amino acid that is to be incorporated into peptide chain.

D. Same t-RNA can transfer many amino acids to the site of protein synthesis

Answer: D

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21. Through this experiment Avery, Macleod and Mc Carty had showed that DNA is the sole carrier of genetic information

A. Transcription

B. Transduction

C. Transformation

D. Translocation

Answer: C

Watch Video Solution

22. The ratio of phosphates, sugars and nitrogen bases in ds-DNA

A. $1:2:1$

B. $1:1:1$

C. $1:1:2$

D. $3:1:1$

Answer: B

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23. Chargaff did not establish that

A. $A:T=1:1$

B. $G:C=1:1$

C. $A+G:T+C\neq 1:1$

D. $A + T : G + C \neq 1 : 1$

Answer: C

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24. Length of DNA is $1700 A^{\circ}$. The number of nucleotides it contains is

A. 1000

B. 500

C. 3400

D. 850

Answer: A

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25. The minimum and maximum number of hydrogen bonds found in a coil of ds-DNA respectively are

A. 10 and 10

B. 20 and 20

C. 30 and 20

D. 20 and 30

Answer: D

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26. The most unstable molecule is

A. ss DNA

B. ds RNA

C. m RNA

D. t RNA

Answer: C

Watch Video Solution

27. RNA which is almost in the form of a regular double helix is

A. r RNA

B. m RNA

C. ds RNA

D. t RNA

Answer: A

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28. t-RNA can also be called

A. s RNA

B. adaptor RNA

C. interpretor of genetic code

D. genetic RNA

Answer: D

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29. Three major types of RNA are physically brought together during

A. Replication of DNA

B. Autocatalysis of DNA

C. Translation

D. Transcription

Answer: C

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30. What is the ratio of non sense codons to sense codons respectively?

A. $61:3$

B. $3:61$

C. $1:20$

D. $20:1$

Answer: C

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31. According to recent concept the number of types of t RNA is equal to

A. No.of sense codons

B. No.of non sense codons

C. Total no. of triplet codons

D. No. of termination codons

Answer: A

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32. If the DNA of a zygote has $20\ \%$ Adenine, Thymine in the gametic DNA is

A. $40\ \%$

B. $20\ \%$

C. $30\ \%$

D. $15\ \%$

Answer: B

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33. Length of DNA with 200 nucleotides is

A. $680A^\circ$

B. $68A^\circ$

C. $34A^\circ$

D. $340A^\circ$

Answer: D

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34. Number of phosphodiester bonds in one turn of DNA

A. 14

B. 16

C. 18

D. 20

Answer: C

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35. The t RNA molecules with the following anti codons do not exist in cells

A. AUU, ACU, AUC

B. AUA, ACA AUC

C. AAU, ACU, ACC

D. ACC, AUC, ACU

Answer: A

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36. A fragment of DNA has 480 nucleotides out of which 110 are those of adenine. The number of cytosine nucleotides is

A. 110

B. 130

C. 220

D. 240

Answer: B

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37. How many H-bonds are formed between the two strands of dsDNA of $170A^{\circ}$ length if the cytosine is 20%

A. 130

B. 110

C. 120

D. 180

Answer: A

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38. If the DNA fragment of length $102A$ has 8 adenines, what is the number of G=C pairs in that DNA fragment?

A. 7

B. 16

C. 44

D. 22

Answer: D

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39. How many hydrogen bonds are present between complementary nitrogen bases of a DNA with 5 turns and 20 Adenines?

A. 130

B. 90

C. 100

D. 80

Answer: A

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40. Chargaff rule is not applicable to

A. Rice dwarf virus

B. $\phi \times -174$ bacteriophage

C. Wound tumour virus

D. Reo viurs

Answer: B

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41. The length of DNA in one chromosome is $510A^{\circ}$. It has 20% of 6-aminopurines. The total number of nucleotides and hydrogen bonds in that chromosome respectively, are

A. 300 & 390

B. 150 & 390

C. 150 & 190

D. 120 & 156

Answer: A

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42. How many coded nitrogen bases are present in m-RNA from which a polypeptide chain with 60 amino acids is formed in bacteria cells, (including nonsense codon)?

A. 200

B. 60

C. 180

D. 183

Answer: D

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43. An organism exclusively with 70S type of ribosomes contains one of the following

A. DNA enclosed with in a nuclear membrane

B. Circular naked DNA

C. Double stranded DNA with protein coat

D. Single stranded DNA with protein coat

Answer: B

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44. The arrangement of atoms and molecular groups in DNA and RNA can be studied using

A. Centrifugation

B. Spectrophotometer

C. X- ray diffraction

D. Histochemistry

Answer: C

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45. Arrange the following in ascending order based upon their molecular weights

A) Nucleotide

B) Phosphate

C) Nucleoside

D) Sugar

A. A - B - C -D

B. A - C - D - B

C. B - D - C - A

D. A- C- B -D

Answer: D

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46. In DNA the oxygen atom is lost from the pentose sugar molecule at this carbon

A. 5

B. 4

C. 2

D. 1

Answer: C

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47. The term nucleic acids was given by

A. Altmann

B. Meishcer

C. Fishcher

D. Watson

Answer: A

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48. Nucleic acids were discovered in the nuclei of

A. Blood cells

B. Pus cells

C. Meristamatic cells

D. Muscle Cells

Answer: B

Watch Video Solution

49. $\phi \times -174$ bacteriophage has

A. Single strand DNA

B. Double strand RNA

C. Double strand DNA

D. Single strand RNA

Answer: A

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50. If there is a double stranded DNA virus particle with 20,000 base pairs, how many nucleotides will be present in it ?

A. 20000

B. 10000

C. 5000

D. 40000

Answer: D

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51. A+G = C+T, then it is

A. ss RNA

B. ds RNA

C. ss DNA

D. ds DNA

Answer: D

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52. The unit which is formed by sugar and nitrogen- base linked by glycosidic bond is called

A. Nucleoside

B. Nucleotide

C. Glycoside

D. Purine

Answer: A

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53. The proteins associated with nucleic acids are

A. Scleroproteins

B. Albumins

C. Histones

D. Globulins

Answer: C

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Exercise Ii Enzymes

1. The enzyme which is added to baby foods to predigest them is

A. zymase

B. protease

C. streptokinase

D. trypsin

Answer: B

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2. An enzyme which increases the rate of permeability across the membrane is

A. permease

B. catalase

C. gelatinase

D. amylase

Answer: A

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3. Which of the following reactions is not enzyme-mediated in biological system ?

A. Dissolving CO_2 in water

B. Unwinding the two strands of DNA

C. Hydrolysis of sucrose

D. Formation of peptide bond

Answer: A

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4. Refer to the given reactin.

$$\underset{\text{Maltose}}{C_{12}H_{22}O_{11}} + H_2O \xrightarrow{Enzyme\,A} \underset{\text{Glucose}}{2C_6H_{12}O_6}$$

Enzyme A used in the reaction, belongs to which class of enzymes ?

A. Dehydrogenases

B. Transferases

C. Hydrolases

D. Lyases

Answer: A

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5. Which of the following statements is incorrect regarding enzymatic activity ?

A. It increases with increase in substrate concentration upto the saturation point

B. It is highest at optimum pH value

C. It initially decreases with increase in pH value

D. It initially increases with increase in temperature and then decreases

Answer: B

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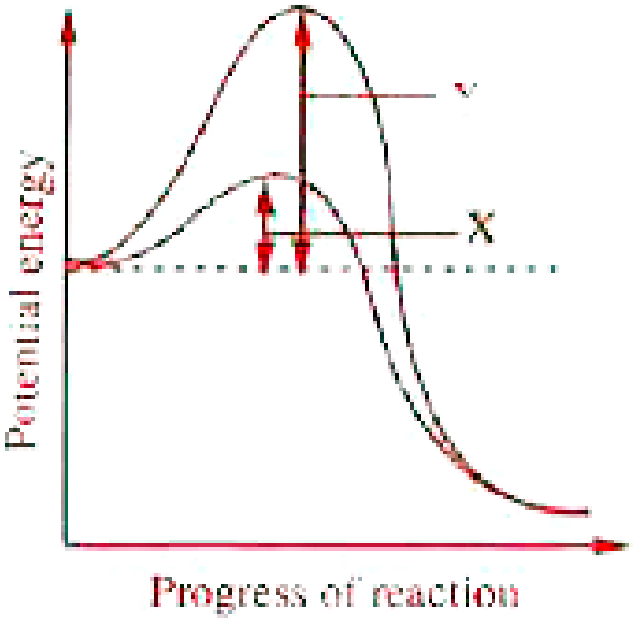
6. What is denoted by X and Y in the given graph?



X	Y
1) Activation energy without enzyme	Activation energy with enzyn
2) Activation energy with enzyme	Activation energy without en
3) Substrate concentration with enzyme	Substrate concentration witl
4) Substrate concentration without enzyme	Substrate concentration with

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7. Enzymes that catalyse removal of groups from substrates by mechanisms other than hydrolysis, and addition of groups to double bonds, are called

A. ligases

B. lyases

C. hydrolases

D. dehydrogenases

Answer: B

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8. Feedback inhibition of an enzyme is influenced by

A. enzyme itself

B. external factors

C. end product

D. substrate

Answer: C

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9. Michaelis Menten Constant (K_m) is equal to

A. the rate of reaction

B. the rate of enzymatic activity

C. substrate concentration at which the reaction attains half of its maximum velocity

D. substrate concentration at which the rate of reaction is maximum

Answer: C

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10. Which of the following is an example of isozyme ?

A. α-Amylase

B. Glucokinase

C. Lactate dehydrogenase

D. All of these

Answer: D

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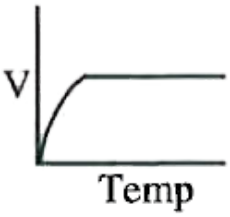
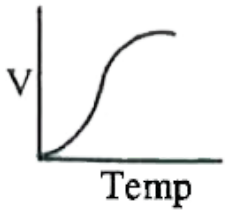
11. Which one of the given graphs shows the effect of temperature on the velocity of a typical enzymatic reaction ?

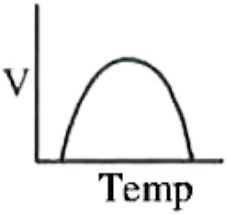
A.



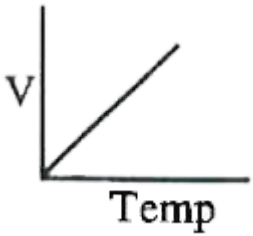
B.



C.



D.



Answer: C

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12. Holoenzyme is the complete enzyme consisting of an apoenzyme and a co-factor. Select the option that correctly identifies the nature of apoenzyme and co-factor.

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Exercise Iii Previous Aipmt Neet Questions

1. Anaphase Promoting Complex (APC) is a protein degradation machinery necessary for proper mitosis of animal cells. If APC is defective in a human cell, which of the following is expected to occur?

A. Chromosomes will not condense

B. Chromosomes will be fragmented

C. Chromosomes will not segregate

D. Recombination of chromosome arms will

Answer: C

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2. Which of the following are not polymeric ?

A. nucleic acids

B. proteins

C. polysaccharides

D. lipids

Answer: D

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3. The two polypeptides of human insuluin are linked together by:-

A. covalent bond

B. disulphide bridges

C. hydrogen bonds

D. phosphodiester bond

Answer: B

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4. A typical fat molecule is made up of .

A. one glycerol and one fatty acid molecule

B. three glycerol and three fatty acid molecules

C. three glycerol molecules and one fatty acid molecule

D. one glycerol and three fatty acid molecules

Answer: D

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5. The chitinous exoskeleton of arthropods is formed by the polymerisation of

A. N-acetyl glucosamine

B. Lipoglycans

C. Keratin sulphate and chondroitin sulphate

D. D-glucosamine

Answer: A

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6. Which one of the following is not applicable to RNA

A. Heterocyclic nitrogenous bases

B. Chargaff's rule

C. Complementary base pairing

D. 5' phosphoryl and 3' hydroxyl ends

Answer: B

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7. Which of the following statements regarding fats is true

A. Arachidonic acid has 20 carbons excluding the carboxyl carbon

B. Glycerol is trihydroxy propane

C. Palmic acid has 18 carbons including the carboxyl carbon

D. Oils have higher melting points than fats

Answer: B

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

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

A. $\begin{matrix} A & B & C & D \\ I & II & III & IV \end{matrix}$

B. $\begin{matrix} A & B & C & D \\ I & III & II & IV \end{matrix}$

C. $\begin{matrix} A & B & C & D \\ IV & III & II & I \end{matrix}$

D.
A	B	C	D
IV	I	II	III

Answer: C

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9. Which one of the following is a non-reducing carbohydrates ?

A. Maltose

B. Sucrose

C. Lactose

D. Ribose 5-phosphate

Answer: B

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10. A phosphoglyceride is always made up of

A. Only a saturated fatty acid esterified to a glycerol molecule to which a phosphate group is also attached

B. Only an unsaturated fatty acid esterified to a glycerol molecule to which a phosphate grouup is also attached

C. A saturated or 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 phosphate group which is also attached to a glycerol molecule

Answer: C

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11. 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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12. Select the two correct statements out of the four given below about lac operon.

(i) Glucose or galactose may bind with the repressor and inactivate it.

(ii) In the absence of lactose the repressor binds with the operator region

(iii) The z-gene codes for permease

(iv) This was elucidated by Francois jacob and Jacque monod are:

A. b and c

B. a and c

C. b and d

D. a and b

Answer: C

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13. Seminal plasma in human males is rich in

A. Fructose and calcium

B. Glucose and calcium 2

C. DNA and testosterone

D. Ribose and potassium

Answer: A

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14. Injury to adrenal cortex is not likely to affect the secretion of which one of the following ?

A. Aldosterone

B. Both androstenedione and dehydrooepi- androsterone

C. Adrenalin

D. Cortisol

Answer: A

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15. Carrier ions like Na^+ facilitate the absorption of substances like

A. Amino acids and glucose

B. Glucose and fatty acids

C. Fatty acids and glyerol

D. Fructose and some amino acids

Answer: A

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16. The 3'-5' phosphodiester linkages inside a polynucleotide chain serve to join

A. One DNA strand with the other DNA strand

B. One nucleoside with another nucleotide

C. One nucleotide with another nucleotide

D. One nitrogenous base with pentose sugar

Answer: B

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17. Which one of the following enzyme is responsible for the synthesis of DNA from RNA

A. DNA polymerase

B. RNA polymerase

C. Reverse transcriptase

D. DNA ligase

Answer: C

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18. In eukaryotic cell transcription, RNA splicing and RNA capping take place inside the

A. Ribosome

B. Nucleus

C. Dictyosomes

D. ER

Answer: B

Watch Video Solution

19. The 3'-5' phosphodiester linkages inside a polynucleotide chain serve to join

A. One DNA strand with the other DNA strand

B. One nucleoside with another nucleotide

C. One nucleotide with another nucleotide

D. One nitrogenous base with pentose sugar

Answer: C

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

A. Enzymes require optimum pH for maximal activity

B. Enzymes are highly specific

C. Most enzymes are proteins but some are lipids

D. Enzymes are denatured at high tempratures but in certain exceptional organisms they are effective even at tempratures $80^\circ - 90^\circ C$

Answer: C

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21. T.O. Diener discovered as

A. Free infectious DNA

B. Infectious protein

C. Bacteriophage

D. Free infectious RNA

Answer: D

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22. There is no DNA in

A. Mature RBC's

B. A mature spermatozoan

C. Hair root

D. An enucleated ovum

Answer: A

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23. Which one of the following pairs is wrongly matched ?

A. Alcohol - nitrogenase

B. Fruit juice - pectinase

C. Textile - amylase

D. Detergents - lipase

Answer: A

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24. In the DNA molecule

A. The total amount of purine nucleotides and pyramidine nucleotides is not always equal

B. There are two strands which run parallel in the $5' \rightarrow 3'$ direction

C. The proportion of adenine in relation to thymine varies with the organism

D. These are two strands which run antiparallel one in $5' \rightarrow 3'$ direction and other in $3' \rightarrow 5'$

Answer: D

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

A. Thymine, Uracil - Pyrimidines

B. Uracil, Cytosine Pyrimidines

C. Guanine, Adenine Purines

D. Adenine, Thymine - purines

Answer: D

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26. Modern detergents contain enzyme preparation of

A. Acidophiles

B. Alkaliphiles

C. Thermoacido philes

D. Theromphiles

Answer: C

Watch Video Solution

27. Which one of the following is the competitive inhibitor of succinic dehydrogenase, which participates in Kreb's cycle?

A. Malonate

B. Oxaloacetate

C. α - ketoglutarate

D. Malate

Answer: A

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28. The linking of antibiotic resistance gene with the plasmid vector became possible with:

A. DNA ligase

B. Endonuclease

C. DNA polymerase

D. Exonuclease

Answer: A

Watch Video Solution

29. Which one of the following is not a part of cell membrane ?

A. Cholestrol

B. Glycolipids

C. Proline

D. Phospholipids

Answer: C

Watch Video Solution

30. The two polynucleotide chains in DNA are

A. Parallel

B. Discontinuous

C. Antiparallel

D. Semiconservative

Answer: C

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31. 98% of living organism is formed of six elements-carbon, hydrogen, nitrogen, oxygen and

A. Phosphorous and sulphur

B. Sulphur and magnesium

C. Magnesium and sodium

D. Calcium and phosphorous

Answer: A

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32. Antiparallel strands of a DNA molecule means that

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

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

C. One strand turns clockwise

D. One strand turns anti clockwise

Answer: B

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33. One turn of the helix in a β-form of DNA is approximately

A. 0.34 nm

B. 3.4 nm

C. 2nm

D. 20nm

Answer: B

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34. Antibodies in our body are complex

A. Sterodis

B. Prostaglandins

C. Glycoproteins

D. Lipoproteins

Answer: C

Watch Video Solution

35. Telomerase is an enzyme which is a

A. Respective DNA

B. RNA

C. Simple proteins

D. Ribonucleo protein

Answer: D

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36. Enzymes, vitamins and hormones can be classified into a single category of biological chemicals, because all of these

A. Help in regulating metabolism

B. Are exclusively synthesized in the body of a living organism as at present

C. Are conjugated proteins

D. Enhance oxidative metabolism

Answer: A

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37. The catalytic efficency of two different enzymes can be compared by the

A. Formation of the product

B. pH optimum value

C. Km value

D. Molecular size of the enzyme

Answer: C

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38. Which one of the following hydrolyses internal phosphodiester bonds in a polynucleotide chain?

A. Lipase

B. Protease

C. Endonuclease

D. Exonuclease

Answer: C

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

A. Competitive inhibition is seen when a substrate competes with an enzyme for binding to an inhibitor protein

B. Competitive inhibition is seen when the substrate and the inhibitor compete for the active site on the enzyme

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

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

Answer: B

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40. Chemically hormones are

A. Biogenic amines only

B. Proteins, steroids, and biogenic amines

C. Proteins only

D. Steroids only

Answer: B

Watch Video Solution

41. Which one of the following pairs is not correctly matched?

A. $Vita\ \min\ B_{12}$ - Pernicious anemia

B. Vitamin B_6 - Loss of appetite

C. Vitamin B_1 - Beri - beri

D. Vitamin B_2 - Pellagra

Answer: D

Watch Video Solution

42. ATPase enzyme needed for muscle contraction is located in

A. Actinic

B. Troponin

C. Myosin

D. Actin

Answer: C

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43. In a mutational event, when adenine is replaced by guanine, it is the case of

A. Frameshift mutation

B. Transcription

C. Transition

D. Transversion

Answer: C

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44. DNA fingerprinting refer to

A. Molecular analysis of profiles of DNA samples

B. Analysis of DNA samples using imprinting devices

C. Techniques used for molecular analysis of different specimens of DNA

D. Techniques used for identification of finger printss of individuals

Answer: A

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45. In which one of the following enzymes, is copper necessarily associated as an activator -

A. Carbonic anhydrase

B. Tryptophanase

C. Lactic dehydrogenase

D. Tyrosinase

Answer: D

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46. Which of the following hormones is not a secretory product of human placenta?

A. Human chorconic gonadotropin

B. Prolactin

C. Estrogen

D. Progesterone

Answer: B

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47. Which one of the following is the correct matching of a vitamin, its nature and its deficiency disease?

A. Vitamin A - Fat - soluble - Night blindness

B. Vitamin K - Fat - soluble - Beri - beri

C. Vitamin A - Fat - soluble Beri - beri

D. Vitamin K - Water - soluble Pellagra

Answer: A

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48. During transcription , the nucleotide sequence of the DNA strand that is being coded is ATACG, then the nucleotide sequence in the mRNA would be

A. TATGC

B. TCTGG

C. UAUGC

D. UATGC

Answer: C

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49. Restriction endonucleases:

A. Are present in mammalion cells for degradation of DNA when the cells dies

B. Are used in genetic engineering for ligating two DNA molecules

C. Are used for invitro DNA syntnesis

D. Are synthesized by bacteria as part of their defense mechanism

Answer: D

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50. The maximum growth rate occurs in

A. Stationary phase

B. Senescent phase

C. Lag phase

D. Expotential phase

Answer: D

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51. The following ratio is generally constant for a given species

A. $\frac{A+G}{T+C}$

B. $\frac{C+T}{G+A}$

C. $\frac{G+C}{A+T}$

D. $\frac{A+C}{T+G}$

Answer: C

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52. Which form of RNA has a structure resembling clover leaf ?

A. r RNA

B. hn RNA

C. m RNA

D. t RNA

Answer: D

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53. During replication of a bacterial chromosome DNA synthesis stars from a replication origin site and

A. RNA Primers are involved

B. Facilitated by telomerase

C. Moves in one direction of the site

D. Moves in bidirectional way

Answer: D

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54. During translation initiation in prokaryotes , a GTP molecule is needed in

A. Binding of 30s subunit of ribosome with m-RNA

B. Association of 30s m RNA with formyl met- t-RNA

C. Association of 50s subunit of ribosome with initiation complex

D. Formation of formyl-met-t RNA

Answer: C

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55. Which one of the following concerns photophosphorylation ?

A. $\text{ADP}+\text{Inorganic}\ \ PO_4 \xrightarrow{\text{light energy}} \text{ATP}$

B. $\text{ADP}+\text{Inorganic}\ \ PO_4 \rightarrow \text{ATP}$

C. $\text{AMP}+\text{Inorganic}\ \ PO_4 \xrightarrow{\text{light energy}} ATP$

D. $ADP + AMP \xrightarrow{\text{light energy}} ATP$

Answer: A

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56. Which one of the following triplet codes , is correctly matched with its specificity for an amino acid in protein synthesis or as start or stop codon ?

A. UUU-stop

B. UGU-Leucine

C. UAC-Tyrosine

D. UCG-start

Answer: C

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57. Which one of the following pairs is not correctly matched?

A. Vitamin B_2-Pellagra

B. Vitamin B_{12}-Pernicious anaemia

C. Vitamin B_6-Beri-Beri

D. Vitamin C-Scurvy

Answer: A

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58. During transcription , the DNA site at which RNA polymerase binds is called

A. Regulator

B. Receptor

C. Enhancer

D. Promotor

Answer: D

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59. Which one of the following pairs correctly matches a hormone with a disease resulting from its deficiency?

A. Prolaction-cretinism

B. Parathyroid hormone-Tetany

C. Insulin-Diabetes insipidus

D. Relaxin-Gigantism

Answer: B

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60. Which is a reducing sugar?

A. Galactose

B. Gluconic acid

C. β-methyl galactoside

D. Sucrose

Answer: A

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61. Change in the sequence of nucleotide in DNA is called as

A. Mutagen

B. Mutation

C. Recombination

D. Translation

Answer: B

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62. Adrenaline directly affects

A. S.A node

B. B-cell of langerhans

C. Dorsal root of spinal cord

D. Epithelial cells of stomach

Answer: A

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63. Sequence of which of the following is used to know the phylogeny : -

A. mt-DNA

B. r-RNA

C. t-RNA

D. DNA

Answer: A

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64. In a DNA percentage of thymine is 20 . What is the percentage of guanine ?

A. $20\ \%$

B. $40\ \%$

C. $30\ \%$

D. $60\ \%$

Answer: C

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65. Which of the following enzymes are used to join bits of DNA

A. Ligase

B. Primase

C. DNA polymerase

D. Endonuclease

Answer: A

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

A. Hydrophilic

B. Hydrophobic

C. Neutral

D. Zwitter ions

Answer: A

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67. Collagen is

A. Fibrous protein

B. Globular protein

C. Lipid

D. Carbohydrate

Answer: A

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68. Enzyme involved in nitrogen fixation

A. Nitrogenase

B. Nitrate reductase

C. Transferase

D. Transaminase

Answer: A

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69. Which one is correctly mactched ?

A. Vitamin E - tocopherol

B. Vitamin D - riboflavi

C. Vitamin B - calciferol

D. Vitamin A - thiamine

Answer: A

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70. Which of the following cut the DNA from specific places : -

A. Restriction endonuclease

B. Ligase

C. Exonuclease

D. Alkaline phosphatege

Answer: A

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71. Caulimo (Cauliflower Mosaic) viruses have

A. ss RNA

B. ds RNA

C. ds DNA

D. ss DNA

Answer: C

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72. Most abundant organic compound on earth is

A. Protein

B. Cellulose

C. Lipids

D. Steroids

Answer: B

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73. Types of RNA polymerase required in nucleus for RNA synthesis : -

A. 1

B. 2

C. 3

D. 4

Answer: C

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74. Spoilage of oil can be detected by which fatty acid ?

A. Oleic acid

B. Linolenic acid

C. Linoleic acid

D. Erusic acid

Answer: D

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75. m RNA is synthesized on DNA template in which of the following direction

A. $5' \rightarrow 3'$

B. $3' \rightarrow 5'$

C. Both direction

D. Any direction

Answer: A

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76. Enzymes are absent in

A. Algae

B. Fungi

C. Cyanobacteria

D. Viruses

Answer: D

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77. Enzymes enhance the rate of reaction by

A. Forming a reactant product complex

B. Enanging the equilibrium piont of the reaction

C. Combining with the product as soon as it is formed

D. Lowering the activation energy of the reaction

Answer: D

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78. Feed back inhibition of enzyme action is affected by

A. End product

B. Substrate

C. Enzyme

D. Rise in temperature

Answer: A

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79. Conjugated proteins containing carbohydrates as prosthetic group are known as

A. Chromoprotiens

B. Glycoprotiens

C. Lipoprotiens

D. Nucleoprotiens

Answer: B

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80. The transfer RNA molecule in 3D appears

A. L shaped

B. Y shaped

C. E shaped

D. S shaped

Answer: A

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81. One turn of the helix in a β-form of DNA is approximately

A. 3.4 nm

B. 2nm

C. 0.34nm

D. 20 nm

Answer: A

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82. One of the similarities between DNA and RNA is that both

A. Are polymers of nucleotides

B. Are capable of replicating

C. Have similar sugars

D. Have similar pyrimidine bases

Answer: A

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83. Which is an essential amino acid

A. Serine

B. Aspartic acid

C. Glycine

D. Phenylalanine

Answer: D

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84. ATP is a

A. Nucleotide

B. Nucleosome

C. Nucleside

D. Purine

Answer: A

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Exercise Iii Previous Aipmt Neet Questions Enzymes

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

A. Substrate binds with enzyme at its active site.

B. Addition of lot of succinate does not reverse the inhibition of succinic dehydrogenase by malonate

C. A non- competitive inhibitor binds the enzyme at a site distinct from that which binds the substrate

D. Malonate is a competitive inhibitor of succinic dehydrogenase

Answer: B

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2. Transition state structure of the substrate fomed during an enzymatic reaction is

A. Transient but stable

B. Permanent but unstable

C. Transient and unstable

D. Permanent and stable

Answer: C

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3. The essential chemical components of many coenzymes are

A. Proteins

B. Nucleic acids

C. Carbohydrates

D. Vitamins

Answer: D

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4. The initial step in the digestion of milk in hu- mans is carried out by

A. Trypsin

B. Pepsin

C. Rennin

D. Lipase

Answer: C

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

A. Enzymes required optimum pH for maximal activity

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

C. Most enzymes are proteins but some are lipids

D. Enzymes are highly specific to their substrates

Answer: C

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6. An organic substance bound to an enzyme and essential for its activity is

A. coenzymes

B. apoenzyme

C. isoenzyme

D. holenzyme

Answer: B

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7. An enzyme that stimulates germination of barley seeds is

A. lipase

B. protease

C. invertase

D. α- amylase

Answer: D

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8. Telomerase is an enzyme which is a

A. RNA

B. Simple protein

C. Repetitive DNA

D. Ribonucleoprotein

Answer: D

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

A. Competitive inhibition is seen when a substrate competes with inhibitor to occupy other than active site.

B. Competitive inhibition is seen when the substrate and the inhibitor compete for the active site on the enzyme

C. Noncompetitive inhibition of an enzyme can be overcome by adding large amount of substrate

D. Noncompetitive inhibitors often bind to the enzyme irreversibly

Answer: B

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10. The catalytic efficency of two different enzymes can be compared by the

A. the Km value

B. the pH optimum value

C. formation of the product

D. molecular size of the enzyme

Answer: A

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11. Which of the following are not polymeric?

A. Proteins

B. Polysaccharides

C. Lipids

D. Nucleic Acids

Answer: C

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