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BIOLOGY

BOOKS - TRUEMAN BIOLOGY

BIOMOLECULES

Multiple Choice Questions

1. The four elements called "big-four" which make up 95% of all elements found in a living system are

A. C, H, O, N

B. C, H, O , P

C. C, H, O, S

D. C, N, O , P

Answer: A

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2. What is common between NAD and FAD ?

A. Both are coenzymes.

B. Both are derived from proteins

C. Both act as oxygen carriers

D. All of the above

Answer: A

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3. Macromolecules are

A. nucleic acids, proteins and polysaccharides

B. nucleic acids and monosaccharides

C. amino acids and polysaccharides

D. amino acids, lipids and nucleotides

Answer: A

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4. In ATP, the high energy bond is the one which links

A. adenine with ribose

B. adenine with phosphate

C. phosphate to phosphate

D. ribose with phosphate

Answer: C

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5. Every carbohydrate is

A. aldose or ketose

B. ribose or deoxyribose

C. hexose or pentose

D. trioses or tetroses

Answer: A

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6. Glucose is

A. A]aldose hexose sugar

B. B]ketose hexose sugar

C. C]pyranose pentose sugar

D. D]furanose pentose sugar

Answer: A

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7. Oligosaccharides contain

A. A]two monosaccharides

B. B] 2-9 monosaccharides

C. C]numerous monosaccharides

D. D] no monosaccharides.

Answer: B

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8. Reducing sugars are

A. a] glucose, fructose, galactose, maltose and lactose

B. b]glucose, sucrose and cellulose

C. c]lactose, starch, glycogen and trehalose

D. d]all of the above

Answer: A

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9. Reducing sugars like glucose in Fehling solution reduce

A. Fe^{++} to Fe^{+++}

B. Cu^{++} to Cu^{+}

C. Hg^{++} to Hg^{+}

D. Cu^{+} to Cu^{++}

Answer: B

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10. If deoxyribose sugar is supplemented with oxygen at second carbon atom, which one of these is formed ?

A. Erythrose

B. Heptose

C. Ribulose

D. Ribose

Answer: D

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11. Which of the following is the sweetest sugar?

A. fructose

B. glucose

C. sucrose

D. lactose

Answer: A

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12. Deoxyribose is

A. $C_5H_{10}O_5$

B. $C_5H_{10}O_4$

C. $C_6H_{12}O_6$

D. $C_{12}H_{22}O_{11}$

Answer: B

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13. General formula of monosaccharides is

A. $C_nH_{2n}O_5$

B. $(CH_2O)_{n+1}$

C. $C_n(H_2O)_{n-1}$

D. All of these

Answer: D

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14. General formula for disaccharide is

A. $C_nH_{2n}O_n$

B. $C_n(H_2O)_{n+1}$

C. $C_n(H_2O)_{n-1}$

D. $C_{12}H_{22}O_{12}$

Answer: C

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15. The commonest disaccharide has the molecular formula?

A. $C_{10}H_8O_9$

B. $C_{12}H_{24}O_{12}$

C. $C_{18}H_{22}O_{12}$

D. $C_{12}H_{22}O_{11}$

Answer: D

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16. The reagent used to detect sugar in the urine is

A. Ninhydrin solution

B. Benzene

C. Benedict's solution

D. All of the above

Answer: C

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17. Lactose is a disaccharide of

A. glucose only

B. glucose and fructose

C. glucose and galactose

D. all of the above

Answer: C

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18. Maltose is hydrolysed in the presence of mal- tase to

A. glucose

B. glucose & fructose

C. fructose

D. glucose & galactose

Answer: A

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19. Iodine test is used to detect

A. fats

B. malaria

C. typhoid

D. carbohydrates

Answer: D

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20. Fructose is a ketose sugar and also called

A. Aldose

B. fruit sugar

C. cane sugar

D. corn sugar

Answer: B

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21. Before a carbohydrate is utilized as an energy source, it gets first converted into

A. disaccharide

B. oligosaccharide

C. tirose sugars

D. monosaccharide

Answer: D

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22. How many atoms are there in pyaranose ring ?

A. 5

B. 3

C. 6

D. 7

Answer: C

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23. Which of the following are all disaccharides ?

A. Maltose, Sucrose, Lactose

B. Maltose, Lactose, Glucose

C. Glycogen, Lactose, Sucrose

D. All of the above

Answer: A

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24. Invert sugar is mixture of

A. maltose and fructose

B. glucose and galactose

C. glucose and fructose

D. all of the above

Answer: C

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25. A solution of d-glucose in water rotates the plane polarised light

A. towards right

B. towards left

C. towards either side

D. none of the above

Answer: A

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26. $\alpha -$ and $\beta -$ Glucose differ in the orientation of the $(-OH)$ group around:

A. C_3

B. C_1

C. C_5

D. C_2

Answer: 2

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27. A sugar of animal origin is

A. fructose

B. lactose

C. DHAP

D. PGA

Answer: B

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28. Monosaccharide found in nucleus is

A. pentose

B. tetrose

C. erythrose

D. hexose

Answer: A

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29. why sucrose and not glucose is used to preserve fruit products ?

A. Glucose is reactive as it has free CHO group

B. Sucrose is more common in nature

C. Sucrose is easily available and has both glucose and fructos

D. None of the above

Answer: A

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30. In ATP sugar is

A. ribose

B. deoxyribose

C. glucose

D. trioses

Answer: A

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31. Honey has three sugars. They are

A. glucose, fructose and lactose

B. glucose, galactors and inulin

C. dextrose, laevulose and sucrose

D. dextrose, lactose and ribose

Answer: C

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32. Non-reducing sugars have

A. free CHO group and free CO group

B. neither free CO nor free CHO group

C. free CHO and bound CO group

D. free CO group and bound CHO group.

Answer: B

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33. Milk tastes sour when kept in the open for sometime due to formation of

A. carbonic acid

B. citric acid

C. lactic acid

D. malic acid

Answer: C

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34. Which should be given to an athlete for instant energy ?

A. Carbohydrates

B. Proteins

C. Fats

D. Vitamins

Answer: A

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35. Prior to absorption, grape sugar is hydrolyzed by the enzyme.

A. lactase

B. maltase

C. sucrose

D. none of these

Answer: D

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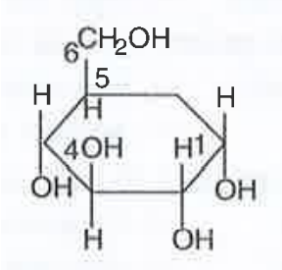
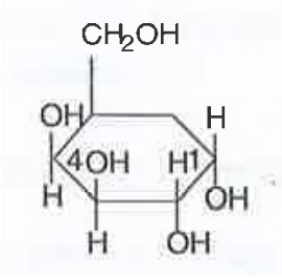
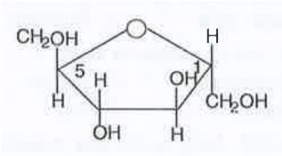
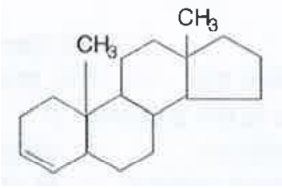
36. Choose the correct molecule for glucose.

A. 

B. 

C. 

D. 

Answer: A

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37. A fat molecule has

A. 3 glycerol and one fatty acid molecule

B. one glycerol and 3 fatty acid molecules

C. one glycerol and one fatty acid molecule

D. 3 glycerol and 3 fatty acid molecule

Answer: B

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38. A Skeleton of four interlocking carbon rings is found in

A. steroids

B. waxes

C. fats

D. glycerol

Answer: A

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39. A fat molecule has three fatty acids. A Phospholipid molecule has how many fatty acids?

A. 3

B. 2

C. 1

D. 0

Answer: B

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40. Most abundant Lipid in cell membrane is

A. phospholipid

B. steroid

C. cholesterol

D. waxes

Answer: A

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41. Amphipathy means

A. presence of polar and non polar end in same molecule

B. water and land habitat

C. presence of dipolar Zwitter ions

D. all wrong

Answer: A

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42. Essential fatty acids are

A. not sythesized in plants

B. not synthesized in animals

C. five in number

D. both (2) and (3)

Answer: B

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

A. carbohydrate

B. fatty acid

C. fat

D. nucleic acid

Answer: B

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44. In Brain, most common types of lipids are

A. glycolipids

B. lipoproteins

C. cholesterol

D. steroids

Answer: A

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45. A saturated fatty acid is

A. Oleic acid

B. Linoleic acid

C. Stearic acid

D. All

Answer: C

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46. Which one is Tetraeonic (four double bond) fatty acid?

A. Arachidonic acid

B. Linoleic acid

C. Oleic acid

D. Palmitic acid.

Answer: A

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47. Which one is absent in wood ?

A. Cellulose

B. Lignin

C. Pectin

D. Fat

Answer: D

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48. Essential fatty acids are present in large amount in

A. butter

B. hydrogenated fats

C. vegetable oils

D. desi ghee

Answer: C

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49. Cholesterol is the precursor of

A. progesterone

B. testosterone

C. estradiol & cortisol

D. all of these

Answer: D

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50. Waxes are esters of higher fatty acids with long chain of

A. monohydric alcohols

B. dihydric alcohols

C. trihydric alcohols

D. all of these

Answer: A

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51. Lecthin and cephalins are

A. nucleic acid

B. phospholipid

C. carbohydrate

D. sphingolipids

Answer: B

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52. Bee wax mainly consists of

A. myricyl palmitate

B. myricyl cerotate

C. cetyl palmitate

D. none of these

Answer: A

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53. Which of the following gives maximum energy in metabolic process?

A. Proteins

B. Nucleic acids

C. Fats

D. Carbohydrates

Answer: C

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54. A fatty acid or amino acid is called essential when

A. cell is unable to synthesize it on its own

B. cell requires it badly and so make it on its own

C. cell badly needs it but does not make it on its own.

D. cell needs it and gets it from adjacent cells

Answer: C

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55. Cholesterol is a

A. simple lipid

B. phospholipid

C. derived lipid

D. glycolipd

Answer: C

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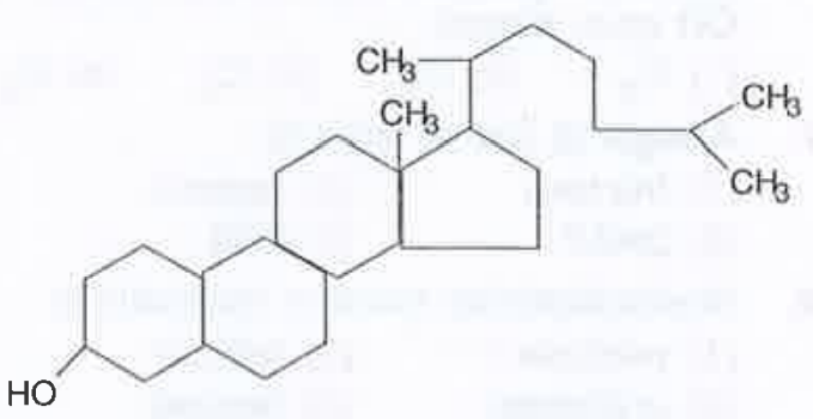
56. This moleucle is related to



A. cholestrol

B. phospholipid

C. lipoprotein

D. mucoprotein

Answer: A

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57. $CH_3(CH_2)_7CH = CH(CH_2)_7.COOH$ is

A. oxalousuccinate

B. oleic acid

C. linolenic acids

D. α-ketoglutarate

Answer: B

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58. Lipids are translocated through blood by

A. glycolipids

B. sulpholpids

C. lipo proteins

D. phospholids

Answer: C

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59. Which of the followig pick up excess cholestrol form plasma and transports it io the liver for disposal?

A. LDL

B. HDL

C. Both (1) & (2)

D. glycolipids

Answer: B

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60. Which amino acid has no asymmetic carbon atom ?

A. Glycine

B. Alanine

C. Proline

D. Threonime

Answer: A

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61. Which of the following sets have combination of an acidic, basic and netural amino acids repestively?

A. Glutamate- Lysine- Glycine

B. Arg-Asp-Val

C. Asp-Val-Phe

D. Phe-Lys-Arg.

Answer: A

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62. The first amino acids taking part in protein synthesis is .

A. Met

B. Val

C. Arg

D. Tryp

Answer: A

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63. Sulphur containing amino acids are

A. valine, lysine and cysteine

B. tryptophan, glutamic acid, aspartic acid

C. citrulline, methionine and glutamic acid

D. cysteine, homocysteine, methionine

Answer: D

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64. Essential amino acids are those which our body can't make and, therefore, we take them from diet. These are usually seven in number and are .

A. leucine, lysine, isoleucine ,valine , tryptophan, phenylalanine , methionine

B. leucine-lysin-isoleucine-valine-tryptophan-phenylalanine -glycine.

C. gly-ala-val-his-try-asp-met

D. none of the above

Answer: A

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65. An amino acid which is precursor of Indole 3-acetic acid (Auxin) is

A. glycine

B. valine

C. glutamic

D. tryptophan

Answer: D

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66. Living organisim have

A. a]α -amino acids and L-sugars

B. b]L-amino acids and D-surgar

C. c]D-amino acids and L-sugar

D. d]α- amino acids and α-sugars.

Answer: B

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67. Which one is an amino acids?

A. $CH_3 - \overset{NH_2}{\overset{|}{C}}H - \overset{O}{\overset{||}{C}} - OH$

B. $CH_3 - CH_2 - \overset{O}{\overset{||}{C}} - O - NH_4$

C. $CH_3 - CH_2 - \overset{O}{\overset{||}{C}} - NH_2$

D. $CH_3 - CH - NH_2 - \overset{O}{\overset{||}{C}} - Cl$

Answer: A

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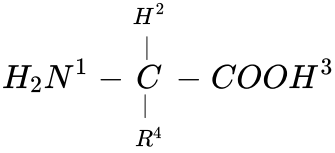
68. Which two groups of the following formula are involved in peptide linkage between different amino acids?



A. 2 and 3

B. 1 and 3

C. 1 and 4

D. 2 and 4

Answer: B

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69. Amino acids usually exist in the form of Zwitter ions. This mean that they consist of

A. the basic NH_2 groups and acidic COOH group

B. the basic NH_3^+ group and the acidic COO^- group

C. basic COO^- group & acidic NH_3^- group

D. None of the above

Answer: B

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70. Peptide linkage is

A. $COHN_2$

B. $-CO.NH$

C. $-COONH_2$

D. $-CH-NH$

Answer: B

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71. Precursor of niacin is

A. lysine

B. theronine

C. tryptophan

D. glycoine

Answer: C

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72. The following one is smallest.

A. maltose

B. Cellulose

C. Glycine

D. Cellbiose

Answer: C

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73. Two of the following amino acids are needed for growth only and are not essential for adults.

A. Cysteine and cystine

B. Lecucine and Valine

C. Tryptophan and isolecucine

D. Arginine and histidine

Answer: D

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74. Glycosidic linkage at place of branching in starch and glycogen is

A. $\alpha - 1 - 4$

B. $\beta, 1 - 4$

C. $\beta, 1 - 6$

D. $\alpha, 1 - 6$

Answer: D

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75. In amylocose units are linked by.

A. $\alpha - 1 - 4$ linkages

B. $\alpha - 1 - 6$ linkage

C. both α -1-4 and α,1-4 linkage

D. all of the above

Answer: A

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76. Which is an unbranched glucan

A. Cellulose

B. Starach

C. Glycogen

D. All the above

Answer: A

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77. The monomer units in strach are

A. Pyarnose frucotose

B. Furannose

C. β-D-Glucose

D. α- D-Glucose

Answer: D

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78. Chitin forming exoskeleton in arthropods is seconds most abundant carbohydrate on this earth. It is a

A. Storage sulphur containing polysaccharide

B. nitrogen containing structural homopolysaccharid

C. mucopolysaccharide

D. strutural oligosaccharide

Answer: B

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79. Which of the following carbohydrates gives a dark blue colour with iodine?

A. Amylopectim

B. Cellulose

C. Strach

D. none of these

Answer: C

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80. The starch and glycogen are two most suitable storage polysaccharides because

A. they occupy less space

B. they do not disturb ph of cell

C. they cannot pass through cell

D. all of the above

Answer: D

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81. Hyaluronic acid is a heteropolysaccharide and has actyl glucosamine + gulcoronic acid. In is a cementing material and found in

A. ovum and synovial fuild

B. vitreous humour

C. skin

D. all of the above

Answer: D

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82. A polysaccharide used as solidyfying agent is

A. pectin

B. silica gel

C. pepton

D. agar

Answer: D

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83. Which one of the following is incorrect regarding glycogen

A. Glycogen is analgous to starch

B. It is non reducing sugar

C. It is a structual polysaccharide

D. It given red colour with iodine solution

Answer: C

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84. Which is a wrong statement?

A. Cellulose is the most abundant homopolysaccharide

B. Waxes are simple lipids

C. Glycogen and glucose are two common carbohydrates in animals.

D. Steroid is a fatty acid

Answer: D

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85. The polysaccharide used in evaluting the function of human nephron is attined form the ____of Dahlia plant.

A. root

B. stem

C. seeds

D. fruit

Answer: A

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86. A polysaccharide of cartilage is

A. chondrin

B. ossein

C. chondriotion sulphate

D. cartilagin

Answer: C

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87. Nucleoprotein is

A. structural portien

B. simple portein

C. conjugated protein

D. fibrous protein

Answer: C

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88. P' protein refers to

A. phloem protein

B. plasma protien

C. platelet protein

D. primary protein

Answer: A

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89. Primary structure of protein is due to

A. hydrogen bonds

B. peptide bonds

C. $-s-s$ linkages

D. ionic bonds

Answer: B

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90. A storgae protein is

A. keratin

B. collage

C. haemogolbin

D. glutelin

Answer: D

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91. Which chemical characterstic is not common to all living beings?

A. Types of protein present in the body

B. Similar triplet code for amino acids

C. Energy is stored in high phosphate bonds

D. None of the above

Answer: A

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92. The most abundant protein in the plant world is found in

A. chloroplasts

B. mitochondria

C. viruses

D. roots

Answer: A

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93. Proteins are made up of amino acids. Sequence of amino acids in protein was determined by a two time Nobel laureate

A. Sanger

B. Summer

C. Pauling

D. Wilkinds

Answer: A

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94. Immunglobulinds (antibodies) of the blood plasma are

A. glucoproteins

B. liporoteins

C. flavoproteins

D. all of these

Answer: A

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95. Which makes the protein active and globular /Which structure provides specific shape and function to the protein?

A. Primary structure

B. Secondary Structure

C. Tertiary structure

D. Sulphide bonds and peptide bonds

Answer: C

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96. Most abundant protein on earth is

A. kertain

B. rubisco

C. RuBP

D. fibrinogen

Answer: B

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97. Two types of secondary structures of proteins are

A. α- helix and β -helix

B. α - helix and β-helix

C. α-helix and β- pleated sheet

D. Helix and rod.

Answer: C

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98. The most diverse chemical is

A. phosphopild

B. Cellulose

C. proteins

D. carbohydrates

Answer: C

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99. The enormous diversity of protien moleucles is due to the diversity of

A. amino groups in amino acids

B. R group in amino acids

C. amino acids sequences

D. peptide bonds

Answer: C

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100. In β- pleated protein, polypeptide chains lie parallely and held together by

A. S-S bond

B. CONH bond

C. H-bond

D. none of these

Answer: C

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101. The major fibrous protein of connective tissue is

A. myosin

B. myoglobin

C. collagen

D. keratin

Answer: C

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102. The protein of red muscles to store oxygen is

A. haemoglobin

B. myoglobin

C. myosin

D. actin

Answer: B

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103. The helical structure of protein is stabilised by:

A. glycosidic bonds

B. dipeptide bonds

C. hydrogen bonds

D. all of these

Answer: C

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104. The sequence in which amino acids are linked to one another in a protein molecule is called its:

A. Primary structure

B. Secondary Structure

C. tertiray structure

D. all of these

Answer: A

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105. Formation of proteins is a type of

A. dehydration synthesis

B. dehydrogenation

C. hydration synthesis

D. hydrogenation

Answer: A

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106. Point out the incorrect statement regarding proteins.

A. Most of enzymes and many hormones are proteins

B. Proteins are stuctural components of membrane.

C. Proteins are high energy yielding compounds.

D. Immunglobulins are proteins.

Answer: C

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107. Denautration of proteins changes its

A. strurcture and properties

B. structure and not property

C. property but not sturcture

D. neither structure not property.

Answer: A

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108. Natural silk fibre is

A. polyester

B. protein

C. lipids

D. polysaccharide

Answer: B

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109. Keratin and chitin are chemically

A. carbohydrates& are functionally similar

B. carbohydrates but functionally different

C. proteins and functionally similar

D. different but functionally similar.

Answer: D

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110. Which of the following groups is present invariably at the two terminals of protein ?

A. Methyl and ethyl

B. Aldehyde and ketone

C. Amino and carboxylic

D. Acid and alcohol

Answer: C

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111. The spider webs are built of

A. fat

B. fibroin protein

C. protamines

D. proteoglycans

Answer: B

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112. Structural proteins are usually

A. fibrous

B. globular

C. enzymatic

D. soluble

Answer: A

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113. Biochemical reagents are widely used for detection of biomolecules. A reagent that specifically detects a carbonyl group (C=0) in a biomolecule will yield a positive test with

A. protein

B. carbohydrate

C. Fats

D. all of these

Answer: B

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114. Sulphur is needed for

A. glucose formation

B. ATP synthesis

C. DNA duplication

D. protein synthesis

Answer: D

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115. Glycosidic bond is

A. $C - O - C$

B. CONH

C. $> C - O$

D. CHO

Answer: A

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116. Cellulose in plant cell wall is made up of

A. unbranched chain of glcoside molecules linked by $\alpha\ 1 \rightarrow 6$ glycose bond

B. unbranched chain of glucose molecules linked by $\beta, 1 \rightarrow 4$ glucose molecule

C. branched chain of glucose molecules linked by $\alpha, \rightarrow 6$ glycosidic bond in straight chain & $\beta \rightarrow 1,4$ at the site of branching.

D. branched chains have $\alpha \rightarrow 1,4$ bond and $\beta \rightarrow 1,6$ glycosidic bonds both

Answer: B

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117. A carbohydrate unique to arthropods is

A. chitin

B. hyaluronic acid

C. chondriotion sulphate

D. waxes

Answer: A

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118. Which one of the following has no free aldehyde or ketone group ?

A. Fructose

B. Maltose

C. Sucrose

D. Galactose

Answer: C

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119. EFA is

A. linolenic acid

B. oleic acid

C. palmitic acid

D. caproic acid

Answer: A

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120. ^{18}C unsaturated fatty acid which has three double bonds is

A. oleic acid

B. linoleic acid

C. linolenic acid

D. arachidonic acid

Answer: C

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121. Arachidonic acid is

A. non-essential fatty acid (NEFA)

B. polyunsaturated fatty (PUEA)

C. Both (1) & (2)

D. saturated fatty acid

Answer: B

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122. Phospholipids are

A. amphipathic

B. amphibolic

C. hydrophobic

D. none of these

Answer: A

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123. Select the odd from the following

A. Glutamic acid

B. Stearic acid

C. Butyric acid

D. Oleic acid

Answer: A

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124. Excess of amino acids are stored in

A. kidney

B. liver

C. spleen

D. none

Answer: D

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125. The difference between one amino acid and another is found on the

A. Carboxyl Group

B. Amino group

C. R group

D. peptide bonds

Answer: C

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126. Relationship between amino acid and protein is similar to one found between

A. glucose and fructose

B. nucleotides and nucleic acid

C. nucleosides and nucleic acid

D. purines and pyrimidines

Answer: B

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127. Non essential amino acid is

A. not needed in the diet

B. not essential for growth

C. not synthesized in body

D. not required for protein synthesis

Answer: A

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128. If the molecular mass of an amino acid is 150 daltons, the molecular mass of a tripeptide will be

A. 450

B. 486

C. 504

D. 414

Answer: D

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129. α-helix is stabilized by H-bonds between the

A. NH and CO group of side chain

B. NH and CO group of main chain

C. NH and NH group of same chain

D. NH and COOH group of all chain

Answer: B

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130. Largest macromolecule in cell is

A. DNA

B. cellulose

C. chitin

D. glycogen

Answer: A

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131. Histones are

A. basic proteins

B. glycoproteins

C. acid proteins

D. mucoproteins

Answer: A

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132. All enzymes are

A. proteins

B. lipids

C. fats

D. inorganic catalysts

Answer: A

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133. Quarternary structure of protein is

A. arrangement of amino acids in polypeptide chain

B. inter-relationship of amino acids in a polypeptide chain

C. inter-relation between polypeptide chains of a protein having more than two polypeptide chains

D. all of the above

Answer: C

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134. Which of the following is nutritionally essential amino acid for humans?

A. Arginie

B. Aspartic acid

C. Glycine

D. Phenylalanine

Answer: D

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

A. Kuhne

B. Pasteur

C. Buchner

D. Sumner

Answer: C

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136. Most of the enzymes when secreted are in inactive form (called proenzymes or zymogens) otherwise they will mainly destroy

A. cell proteins

B. cell DNA

C. cell mitochondrion

D. cell wall and membrane

Answer: A

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137. Enzymes are required in traces because they

A. have high turnover number

B. remain unused at the end of reaction and are reused

C. show cascade effect

D. all correct

Answer: D

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138. An enzyme extract when subject to electric field, separated into two fractions each catalyzing the same reaction. These fractions are

A. allsoteric enzyme

B. isoenzyme

C. apoenzyme

D. activator

Answer: B

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139. The inorgainc part of enzyme is known as

A. holoenzyme

B. coenzyme

C. apoenzyme

D. activator

Answer: D

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

A. Ribozyme discovered by Cech (1981)

B. Ribonuclease discovered by Altman (1983)

C. Both correct

D. DNA/RNA polymerase.

Answer: C

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141. The digestive enzymes are

A. oxidoreductases

B. transferases

C. hydrolases

D. ligases

Answer: C

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142. Coenzyme is

A. always a protein

B. often a vitamin

C. hydrolases

D. often a metal

Answer: B

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143. Why is heat used to sterilize nonliving objects in tissue culture?

A. Proteins are denatured at temperatures above $55^{\circ} C$

B. Proteins lose their primary structures due to break down of hydrogen bonds

C. Both correct

D. Only (1) is correct

Answer: A

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144. A high fever is dangerous to a human because

A. proteins are used up qucikly

B. fats are oxidised

C. enzymes are denatured

D. BMR is Lowered

Answer: C

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145. According to IUB system, isomerases belong to which class?

A. I

B. III

C. V

D. IV

Answer: C

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146. IUB has divied enzymes into classes

A. 6

B. 5

C. 8

D. 4

Answer: A

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147. Enzymes which breakdown compounds without using H_2O are called.

A. lyases

B. ligases

C. hydrolases

D. proteases

Answer: A

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148. Which part of enzyme in a holoenzyme (conjugated enzyme) determines specificity of enzyme ?

A. Aponezyme

B. Prosthetic group

C. Metalo activator

D. None of these

Answer: A

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149. The function of an enzyme is to

A. cause chemical reaction

B. change the rate of chemical reaction

C. change the equailibrum

D. change the directions of reactions

Answer: B

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150. Which of the following is correct in an enzyme-controlled reaction ?

A. $E + S \Leftrightarrow E + P$

B. $E + S \Leftrightarrow ES \Leftrightarrow EP \Leftrightarrow E + P$

C. $E + S \Leftrightarrow ES \Leftrightarrow E$

D. $E + S \Leftrightarrow P \Leftrightarrow E + P$

Answer: B

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151. Enzymes have

A. same pH and temperature optima

B. same pH but different temperature optima

C. different pH but same temperature optima

D. all wrong

Answer: D

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152. Feed back term refers to

A. effect of substrate on rate of enzymatic reaction.

B. effect of end product on rate of reaction

C. effect of enzyme concentration on rate of reaction

D. effect of external compound on rate of reaction.

Answer: B

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153. Enzymes get rate of chemical reaction by

A. lowering energy of activation

B. increasing energy of activation

C. maintaining energy of activation

D. without affecting activation energy but increasing reaction time.

Answer: A

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154. Enzymes get denatured (killed) due to

A. sudden changes in pH

B. decrease in temperature

C. decrease in hydration

D. all of the above

Answer: A

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155. Cyanide kills animlas by inhibiting cytochrome oxidase (an enzyme of respiration) by binding irreversibly with copper. It does not bind with active site. This is an example of

A. competitive inhibition

B. non competitive inhibition

C. feed back inhibition

D. all of the above

Answer: B

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156. In competitive inhibition

A. inhibitor resembles the substrate in molecular structure

B. inhibitor binds to allosteric site and block it

C. inhibitor has no effect on active site

D. all correct

Answer: A

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157. prosthetic group is a part of holoenzyme it is

A. inorganic part loosely attached

B. accessory non prtoein organic substance attached firmly

C. organic part attached loosely

D. none of these

Answer: B

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158. Coenzyme is a part of enzyme

A. inorganic metal activator

B. nonprotein organic part attached firmly

C. nonprotein orgainc part attached lossely

D. vitamin A

Answer: C

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159. Which inactivates an enzyme by occupying its active site ?

A. competitive inhinition

B. allosteric inhibitor

C. non-competitive inhibitor

D. all of these above

Answer: A

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160. Which one inactivates an enzyme by changing the enzyme shape ?

A. Allosteric inhibitor

B. Competitve inhibitor

C. Conezyme

D. Irreversible inhibitor

Answer: A

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161. Turn over number of an enzyme means

A. number of substrate molecules acted upon by one molecule of an enzyme per second.

B. number of enzyme molecules acting on one molecule of substrate per mintue.

C. number of molecules of end product produced by an enzyme in one minute.

D. number of subsrate molecules acted upon by an enzyme per second.

Answer: A

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162. The value of K_m (Michaelis-Menten constant) varies form 10^6 to 10^{-6} M but for allosteric enzyme, there is no constant k_m value. This K_m is .

A. substrate concentration at which the enzymatic reaction attains half its maximum velocity $\left(\frac{1}{2}V_{\max}\right)$

B. enzyme concentration at which the reaction attains $\frac{1}{2}V_{\max}$.

C. end product concentration at which reaction attains $\frac{1}{2}V_{\max}$.

D. none of the above statements is correct.

Answer: A

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163. The lower value of K_m means

A. higher substrate affinity of enzyme

B. higher enzyme activity

C. no effect on reaction

D. lower the affinity of enzyme with substrate.

Answer: A

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164. In a diluated starch solution , α-salivary amylase is added at ph 1.6 and kept at $35^{\circ}C$ for half an hour and then iodine solution is added, what would be the result?

A. There will be a red colour

B. There will be blue solution

C. Solution will be clear and colorless

D. The solution will be sweet

Answer: B

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165. Most of the enzymes when secreted are in inactive form (called proenzymes or zymogens) otherwise they will mainly destroy

A. isonzymes

B. conezymes

C. zymogens

D. apenzyme

Answer: C

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166. Which is best evidence for Lock and key theory (Template theroy)?

A. Competitve inhibition

B. Feed back inhibition

C. Allosteric competition

D. Non-competitive inhibition

Answer: A

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167. which is an enzyme that joins two segments of replicated DNA?

A. Ligases

B. Lyase

C. Endonuclease

D. Topoisomerases

Answer: A

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168. Apoenzyme and coenzyme collectively produce

A. holoenzyme

B. enzyme-product complex

C. cofactor

D. prosthetic group

Answer: A

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169. Which vitamins is incporported into the structure of NAD/NADP?

A. Riboflavin

B. Vitamin PP

C. Nicotinic acid

D. All correct

Answer: C

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170. Mutases and epimerases are

A. isomerases

B. hydrolases

C. lyases

D. ligases

Answer: A

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171. The enzymatic function of a protein is due to

A. Primary structure

B. tertiary structure

C. secondary structure

D. helix structure

Answer: B

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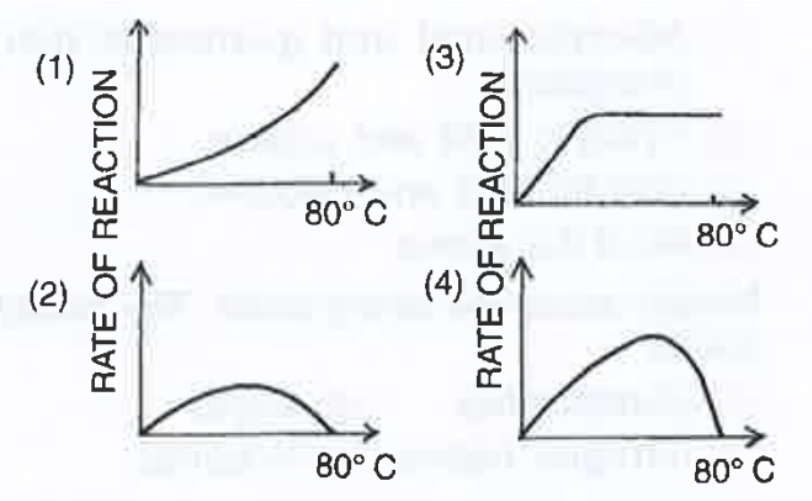
172. Which one of the following diagrams represents the most common relationships between temperature and enzyme activity when the temperature is raised gradually from 0- 80° C?



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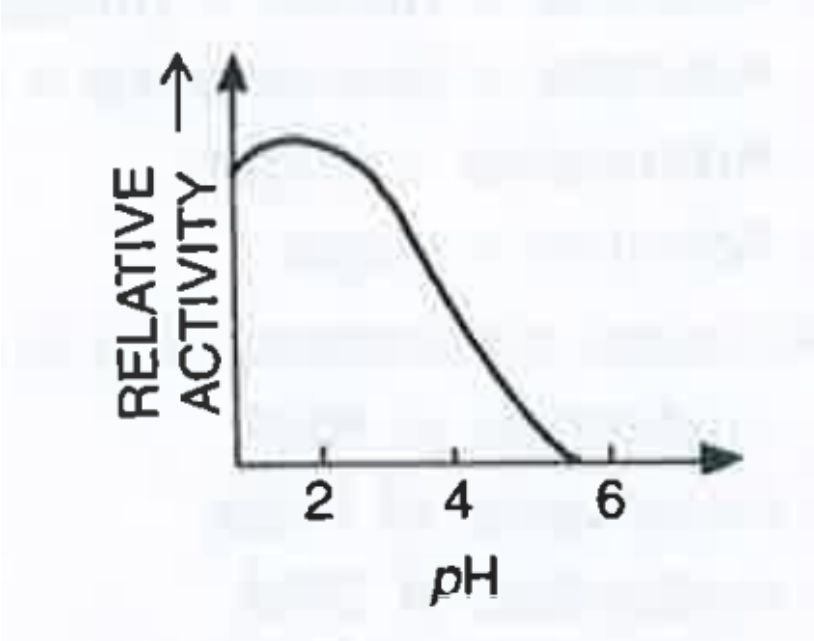
173. The enzyme depicted in the below graph is



A. amylase

B. pepsin

C. trypsin

D. alchol dehydrogenease

Answer: B

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174. Lipase acting of fats breaks

A. ester bond

B. peptide bond

C. hydrogen bonds

D. glyosidic bond

Answer: A

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175. Earliest known enzyme was

A. sucrase

B. zymases

C. diastase

D. ureases

Answer: B

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176. No cell could live without

A. enzymes

B. cytochromes

C. cholroplast

D. phytochromes

Answer: A

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177. The protein part of a conjugated enzyme is

A. holoenzyme

B. conezymes

C. prothetic group

D. apoenzyme

Answer: D

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178. Enzyme that catalyse endergoinc synthesis coupled with exergonic hydrolysis of ATP are

A. Ligases

B. Lyases

C. Hydrolases

D. Oxidoreductase

Answer: A

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179. Cofactors are

A. non-protein organic molecules

B. vitamins

C. metallic ions

D. all of the above

Answer: D

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180. The region that contains the binding and catalytic sites is termend as

A. active site

B. apoenzyme

C. holoenzyme

D. allosteric site

Answer: A

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181. Enzyme/Proteins contain regulatory sites called

A. allosteric sites

B. active sites

C. folding sites

D. buttressing site

Answer: A

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182. Exnzyme concerned with the transfer of electrons is

A. oxidoreductases

B. cytochrome oxidase

C. dehydrogenase

D. all of these

Answer: D

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

A. activators

B. inhibitors

C. promoters

D. modulators

Answer: D

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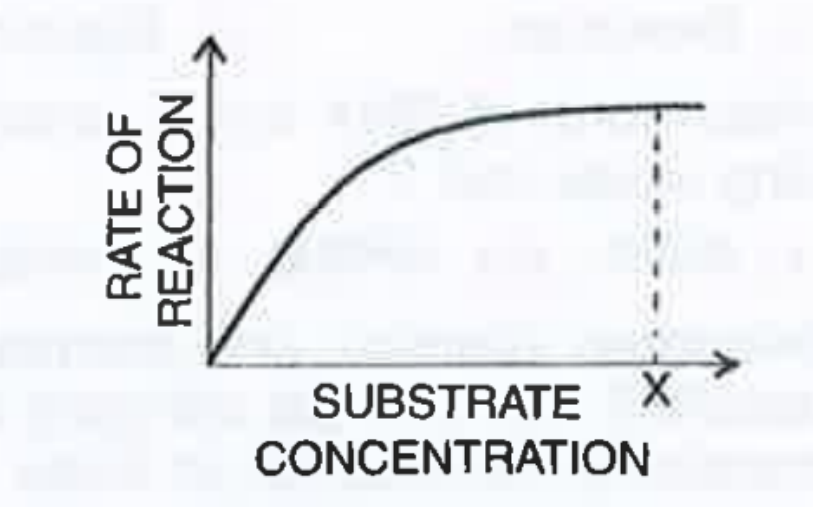
184. The given graph is showing the relationship between the rate of enzyme reaction and concentration of substrate. At concentration of substrate greater than X, the



A. rate of reaction is limited by the enzyme concentration

B. substrate has an inhibitory effect

C. rate of reaction tends towards zero

D. product of the reaction has an inhibitory effect.

Answer: A

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185. In case of competitive inhibition of an enzyme,

A. $V_{\max}$ is increased

B. k_m increased

C. Extent of inhibition remains the same in high substrate concentrations

D. None of the above

Answer: B

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186. Which of the following remains unchanged in reversible competitive inhibition?

A. $V_{\max}$

B. K_m

C. Both

D. None of these

Answer: A

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187. Which is common among Amylase, rennin and tryosin?

A. All are proteins

B. All act at a pH lower than 7

C. All are proteolytic enzymes

D. All are produced in stomach

Answer: A

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188. Silph drugs/sulphanilamide kill bacteria by inhibting of which of the following ?

A. Para-aminobenzoic acid

B. Felic acid

C. Phenylalanine

D. Methionin

Answer: B

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189. One molecule of an enzyme is able to catalyse conversion of two molecules of substrate into products in 5 mintutes. Ten molecules of enzyme and 25 molecules of substrate are mixed in a test tube. At the end of 10 minutes the test tube will have

A. products only

B. products and 5 molecules of unreacted substrate

C. products, enzyme and 5 molecules of unreacted substrate

D. products and enzyme

Answer: D

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190. ATP was discovered by

A. Lipmann

B. Karl Lohman

C. Bowman

D. Blackman

Answer: B

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

A. tRNA

B. mRNA

C. hnRNA

D. rRNA

Answer: A

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

A. are exclusively synthesized in the body of a living organism as at present

B. help in regulating metabolism

C. enhance oxidative metabolism

D. are conjugated proteins

Answer: B

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193. 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. Non-competitive inhibitors often bind to the enzyme irreversibly.

C. Non-compeititve inhibtitve of an enzyme can be overcome by adding large amount of substrate.

D. Competitive inhibition is seen when the substrate and the inhibitor compelte the active site on the enzyme

Answer: D

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

A. the ph of optimium value

B. formation of the porduct

C. the K_m value

D. molecular size of the enzyme

Answer: C

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195. Which one is a nucleotide ?

A. Adenylic acid and guanosine mono- phosphate

B. Cytidylic acid and uridine

C. Uridylic acid and cytosine

D. All of the above

Answer: A

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196. Nucleic acids are strong acids. The acidity is due to

A. phosphates

B. sugar

C. nitrogen bases

D. H-bonds

Answer: A

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197. Adenylic acid is

A. Adenine + ribose + phosphate

B. Adenine + deoxyribose + phosphate

C. Adenosine + sugar

D. Adenine + sugar

Answer: A

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198. Adenosine monophosphate is a

A. nucleotide of RNA

B. nucleoside of RNA

C. nucleotide of DNA

D. nucleoside of DNA

Answer: A

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199. In DNA model of Watson & Crick, the major grooves are site of

A. binding of histone proteins

B. binding of acidic proteins

C. binding of RNA molecules

D. binding of glycoproteins

Answer: B

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200. At $82 - 92^{\circ} C$ the H-bonds between nitrogen bases of complementary strands of DNA break to uncoil and separate two strands. This is called

A. denaturation (melting)

B. renaturation (reannealing)

C. recombination DNA

D. DNA finger printing

Answer: A

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201. On cooling the two separated strands of DNA again recoil. It is called

A. Chain reaction

B. annealing

C. both (1)&(2)

D. palindrome

Answer: B

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202. If DNA has 10 spirals the length of DNA will be

A. $34Å$

B. $340Å$

C. $640Å$

D. $64Å$

Answer: B

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203. What would be the length of DNA containing 10000 base pairs?

A. $68000Å$

B. $34000Å$

C. $10000Å$

D. Im

Answer: B

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204. How many nucleotides are found in one spiral of B-DNA?

A. 5

B. 10

C. 20

D. 25

Answer: C

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205. How many spirals (twins or helices) a DNA of 2000 base pairs will have?

A. 2000

B. 4000

C. 200

D. 45.5

Answer: C

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206. How many nucleotides will be present in a DNA of 20000 base pairs?

A. 4000

B. 40000

C. 20000

D. 2000

Answer: B

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207. RNA differs from DNA in nature of

A. sugar and purines

B. sugar and pyrimidines

C. purines and phosphate

D. sugar and phosphate

Answer: B

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208. A condensation product of nitrogen base and pentose sugar is

A. nucleoitde

B. nucleic acid

C. nucleoside

D. None of these

Answer: C

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209. In nucleoside, nitrogen base is attached to pentose sugar at

A. 1

B. 2

C. 3

D. 5

Answer: A

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210. Basic unit (monomer) of DNA molecule is

A. nitrogenous base

B. deoxyribose nucleotide

C. deoxyribose-nucleoside

D. pentose sugar

Answer: B

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211. In DNA and RNA, pentose sugar has fura- nose ring. It is

A. aldose type

B. ketose type

C. pyranose

D. nonreducing type

Answer: A

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212. The bases of RNA are of

A. 4 types

B. 6 types

C. 1 type

D. 2 types

Answer: A

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213. Which one is covalent bond ?

A. Peptide bond

B. Phosphodiester bond

C. Both correct

D. Both wrong

Answer: C

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214. DNA was first discovered by-

A. Miescher

B. Altman

C. Watson

D. Wilkins

Answer: A

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215. A molecule of ATP is structurally most similar to a molecule of

A. RNA nucleotide

B. DNA nucleotide

C. Amino acid

D. RNA nucleoside

Answer: A

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216. Adenosine is :

A. nucleoside

B. nucleotide

C. a purine

D. a pyrimdine

Answer: A

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217. Thymine differs from uracil in having

A. CH_3 group

B. $C = O$ group

C. CHO group

D. COOH group

Answer: A

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218. The difference in deoxyribose and ribose sugar is in the

A. first carbon

B. second carbon

C. 4th carbon

D. 5th carbon

Answer: B

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219. In purines, N is at position _____in its two rings.

A. 1,3,7,9

B. 1,5

C. 7,9

D. 1&9

Answer: A

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220. In pyrimidines, N is at _____position in its one ring.

A. 1,3

B. 7,9

C. 1

D. 1&9

Answer: A

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221. The similarity between DNA and RNA is that both are

A. are double-stranded

B. have similar sugars

C. are polymers of nucleotides

D. have similar pyrimidines

Answer: C

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222. Two strands of a molecule of DNA are linked sidewise by

A. ester bonds

B. glycosidic bonds

C. purine-pyrimidine hydrogen bonds

D. all the above

Answer: C

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223. The smallest RNA is :-

A. tRNA

B. mRNA

C. rRNA

D. genetic RNA

Answer: A

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224. In double helix of DNA, the two DNA strands are

A. coiled upon itself around a common axis

B. coiled around each other

C. coiled differently

D. coiled over protein sheath

Answer: A

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225. The type of RNA responsible for proper sequence of amino acids in protein synthesis is

A. rRNA

B. tRNA

C. mRNA

D. hnRNA

Answer: C

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226. Which of the following RNAs have clover leaf structure?

A. transfer RNA

B. messenger RNA

C. ribosomal RNA

D. heterogenous RNA

Answer: A

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227. DNA strands are termed antilparallel be cause of

A. H-bonds

B. phospho-diester bonds

C. disulphide (S-S bonds)

D. none of the above

Answer: B

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228. In the double helix modle of DNA , how far is each base pair from the next base pair

A. 0.034nm

B. 3.4 nm

C. 0.34 nm

D. 34 nm

Answer: C

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229. The base sequence for a nucleic acid segment is given as GAG AGG GGA CCA. From this it can be cocluded that it is a segment of a

A. DNA strand

B. mRNA strand

C. tRNA strand

D. data insufficient

Answer: D

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230. Which is correct sequence according to increasing molecular weight ?

A. tRNA- DNA- rRNA

B. tRNA - rRNA - DNA

C. rRNA- DNA- tRNA

D. DNA- tRNA - rRNA

Answer: B

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231. The area of DNA rich in A - T base pairs is called

A. high melting area

B. low melting area

C. microsatellite

D. pallindrome

Answer: B

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232. Purines of RNA are

A. guanine & adenine

B. uracil & thymine

C. adenine & cytosine

D. uracil & guanine

Answer: A

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233. Deoxyribose is

A. $C_5H_{10}O_5$

B. $C_5H_{10}O_4$

C. $C_6H_{12}O_6$

D. $C_6H_{14}O_5$

Answer: B

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234. The double stranded helical structure of DNA is maintained by

A. amide bonds

B. H-bonds

C. covalent bonds

D. phosphodiester bonds

Answer: B

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235. if A=120 and C120, then a piece of DNA will have _____nucleotides.

A. 240

B. 280

C. 480

D. data insufficient

Answer: C

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236. In E. coli DNA has 18% of bases of cytosine. What will be the fraction of adenine?

A. 0.18

B. 0.32

C. 0.36

D. data insufficient

Answer: B

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237. In 'B' model of DNA,the diameter is 20Å. It is _____in Z DNA.

A. $23Å$

B. $18Å$

C. $21Å$

D. $26Å$

Answer: B

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238. Which statement is wrong about DNA ?

A. Some viruses have SsDNA

B. Some viruses have dsRNA

C. Z' DNA has 12 base pairs per helix

D. Length of one helix in 'B' DNA is 45Å and 'Z' DNA is 34Å

Answer: D

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239. The helical model for DNA given by Watson and Crick was

A. B type right handed

B. Z type left handed

C. B type left handed

D. Z type right handed

Answer: A

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240. Which one of the following ratios is variable but constant for a species?

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

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

C. $\frac{[A+U]}{[G+C]}$

D. None of these

Answer: A

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241. if one chain of a DNA molecule has the base order 5'ATTGACGT3' . . . . .

Then the base order of its complementary chain will be

A. 3' ATTGACGT 5'

B. 5' TGCAGTTA 3'

C. 5' TUUCTGCU 3'

D. 3' TAACTGCA 5'

Answer: D

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242. The amino acid attaches to the tRNA at its

A. 5 end where OH is present

B. 3' end where OH is present

C. recognition site

D. DHU loop

Answer: B

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243. Which is recognition site of tRNA?

A. Anticodon

B. Loop I

C. Loop IV

D. 5'-OH end

Answer: A

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244. tRNA attached to mRNA by its

A. I loop

B. II loop

C. III loop

D. IV loop

Answer: B

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245. The ribosomal binding loop of tRNA is

A. DHU loop

B. anticodon loop

C. T ΨC loop

D. III loop

Answer: C

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246. RNA is synthesized on

A. both strands of DNA

B. on sense strand of DNA

C. on anti sense strand of DNA

D. on cDNA

Answer: C

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247. Which one of the following has minimum life span?

A. mRNA

B. rRNA

C. tRNA

D. DNA

Answer: A

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248. Which one of the following is not given by Erwin Chargaff ?

A. Base composition of DNA varies from one species to another

B. The base composition of DNA does not change with age, nutrition or changes in the environment

C. Molar amounts of adenine are equal to the molar amounts of thymine

D. DNA can transcribe RNA

Answer: D

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249. Genetic information in a DNA molecule is coded in the

A. sequence of nucleotides

B. base pairing

C. turning pattern of helix

D. distance between base pairs

Answer: A

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250. The two polynucleotide chains of DNA are complementary, means

A. if one starts with 5' end the other must start with 3' end

B. if the sequence of bases of one chain is known, that of other can be determined

C. two chains are held up by hydrogen bonds

D. all of the above

Answer: B

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251. DNA is present in

A. E.R. and ribosomes

B. ribosomes and chloroplasts

C. ribosomes and mitochondria

D. mitochondria and chloroplastis

Answer: D

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252. Which of the following nitrogenous base is double ringed?

A. Guanine

B. Uracil

C. Thymine

D. Cytosine

Answer: A

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253. In a 3.2 Kbp long piece of DNA , 820 adenine bases were found. What would be number of cyosine bases

A. 1560

B. 1480

C. 780

D. 740

Answer: C

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254. Match the following

(1)	Abrin	- (P) Anti-cancer drug
(2)	Vinblastin	- (Q) Alkloid
(3)	Gums	-(R) Toxin
(4)	Morphine	-(S) Protein
(5)	GLUT - 4	- (T) Polymeric secondary metabolite

A. (1)-(R), (2)-(P), (3)-(T), (4)-(Q), (5)-(S)

B. (1)-(P), (2) -(R), (3) -(T), (4) - (Q), (5)- (S)

C. (1)-(R), (2)-(P), (3)-(Q), (4) - (T), (5)- (S)

D. (1)-(Q), (2)-(T), (3)-(P), (4)-(R), (5)- (S)

Answer: A

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255. Go through the following statements.

(i) In proteins, right handed and left handed helices are observed

(ii) In B-DNA, at each step of ascent, the strand turns 36°.

(iii) Living process is a steady - state in equilibrium.

(iv) The rate of reaction doubles or decreases by half for every 10° C change in either direction.

Find out the correct statement ?

A. (i), (iii) & (iv)

B. (ii) & (iv)

C. (i) & (iv)

D. All are correct

Answer: B

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256. Go through the following statements.

(i) Lipids are not strictly macromolecules.

(ii) In a polysaccharide , the left end is called the non-reducing chain, the right end called the reducing end.

(iii) Cellulose contains complex helices and hence cannot hold I_2.

(iv) Collagen is the most abundant protein most abundant protein in the whole of the biosphere.

Find out the correct statements .

A. (i), (ii) & (iii)

B. (i), (iii) & (iv)

C. (i) ,(ii) &(iv)

D. (i) & (iv)

Answer: D

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257. Match the following .

(1) Valine	(A) Aromatci essential amino acid
(2) Tyrosine	(B) Fatty acid with 20 carbon atoms
(3) Arachidonic acids	(C) Netural amino acids
(4) Lysine	(D) Fatty acid with 16 carbon atoms
(5) Palmitic acid	(E) Aromatic amino acid
	(F) Basic amino acid

A. $(1)-(E),(2)-(A),(3)-(D),(4)-(F),(5)-(D)$

B. $(1)-(E),(2)-(A),(3)-(D),(4)-(F),(5)-(B)$

C. $(1)-(C),(2)-(A),(3)-(B),(4)-(F),(5)-(B)$

D. $(1)-(C),(2)-(E),(3)-(B),(4)-(F),(5)-(D)$

Answer: D

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258. Given below is a comparision of elements present in non-living and living matter. Which of these is incorrect:

A.

Element	% weight of Earth's crust	% weight of Human body
(1) Silicon	27.7	Negligible

B.

Element	% weight of Earth's crust	% weight of Human body
(2) Carbon	0.03	18.5

C.

Element	% weight of Earth's crust	% weight of Human body
(3) Calcium	10	15

D.

Element	% weight of Earth's crust	% weight of Human body
(4) Nitrogen	Very little	3.3

Answer: C

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259. All the following statement describing lipids are true except:

A. Oxygen content may be more than carbon and hydrogen

B. They are poorly soluble in water

C. They are structural components of membranes

D. They are intracellular energy source

Answer: A

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260. The fastest enzyme is

A. Zymase

B. Carbonic anhydrase

C. Amylase

D. Hexokinase

Answer: B

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261. Select out the correct sequence according to increase in complexity.

A. Maltose, Fructose, Triose, Oligosaccharide, Starch

B. Fructose, Maltose, Triose, Starch, Oligosaccharide

C. Fructose, Maltose, Triose, Oligosaccharide, Starch

D. Fructose, Maltose , Oligosaccharide, starch

Answer: D

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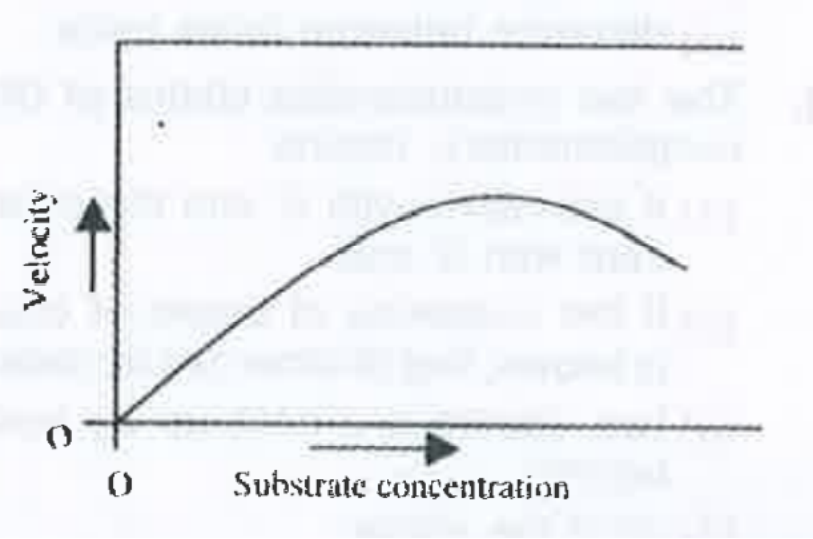
262. What does the graph indicate ?

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



A. The rate of enzyme reaction is directly proportional to the substrate concentration.

B. Presence of an enzyme inhibitor in the reaction mixture

C. Formation of an enzyme-substrate complex

D. At higher substrate concentration the ph increase

Answer: B

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263. The bonds between the enzyme and substrate must be

A. Weak and long-lived

B. Weak and short-lived

C. Strong and long-lived

D. Strong and short-lived

Answer: B

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264. Consider the following fatty acids

1. Linolenic 2.Epimers

3. Aldohexoses 4. Monosaccharides.

which of the above statements are correct ?

A. 1 only

B. 1 and 2

C. 3 and 4

D. 2,3 and 4

Answer: B

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265. Consider the following statement.

D-glucose, D-galactose and D-fructose are all.

1. Isomers

2. Epimers

3. Aldohexoses

4.Monosaccharides .

Which of these is/are unsaturated fatty acids ?

A. 1 and 4

B. 2 and 4

C. 1,2and 4

D. 1,2 and 4

Answer: A

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266. Which one of the following statements is not correct?

A. All fatty acids have a carboxyl group at one end

B. Like carbohydrates, fatty acids have more oxygen than hydrogen

C. Saturated fatty acids are solids at room temperature

D. Glycerol is a component of phospho lipids

Answer: B

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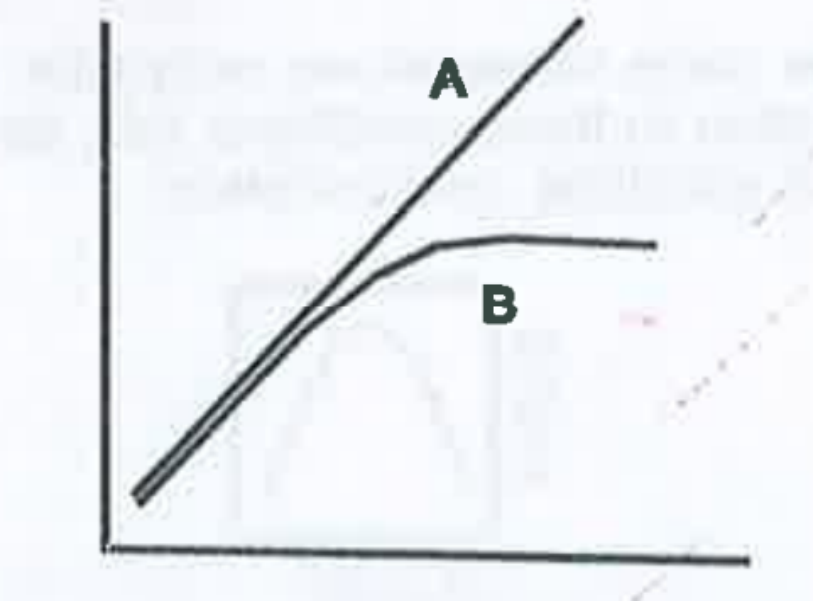
267. The same enzyme catalyzed reaction showed two different kinetic patterns as shown in the graph. Y-axis indicates product formed and X-axis indicates time. Mark the correct interpretation.



A. Reaction A is carried out at higher tempreature than B

B. Reaction B is carried out at a pH higher than that for reaction A.

C. Substrate in replenished form time to time in reaction A and not in B

D. Only reaction A is carried out at optimum concentration

Answer: C

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268. Listed below are certain proteins. Which of them are the only structural proteins ?

(i) Collagen (ii) Trypsin

(iii) Keratin (iv) Actin

(v) Albumin (vi) Tubulin

A. (i),(iii),(iv)

B. (ii),(iv),(v), (vi)

C. (i),(iii),(vi)

D. (i),(iii), (iv),(v),(vi)

Answer: C

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269. Which of the following amino acids have side chain that are negatively charged under physiogical conditions ?

A. Aspartic acid

B. Histidine

C. Tryosine

D. Serine

Answer: A

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270. When the following amino acids are separated by running them on Agraose ge l at pH 7, which one then will migrate slowest to anode ends ?

A. Aspartic acid

B. Valine

C. Glycine

D. Lysine

Answer: D

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271. Atherogenic lipoproteins are all EXCEPT

A. LDL

B. HDL

C. VLDL

D. Chylomicrons

Answer: B

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272. An enzyme that can stimulate germination of barley seeds is

A. protease

B. invertase

C. α-amylase

D. lipase

Answer: C

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

A. aponezyme

B. isoenzyme

C. conenzyme

D. holoennzyme

Answer: C

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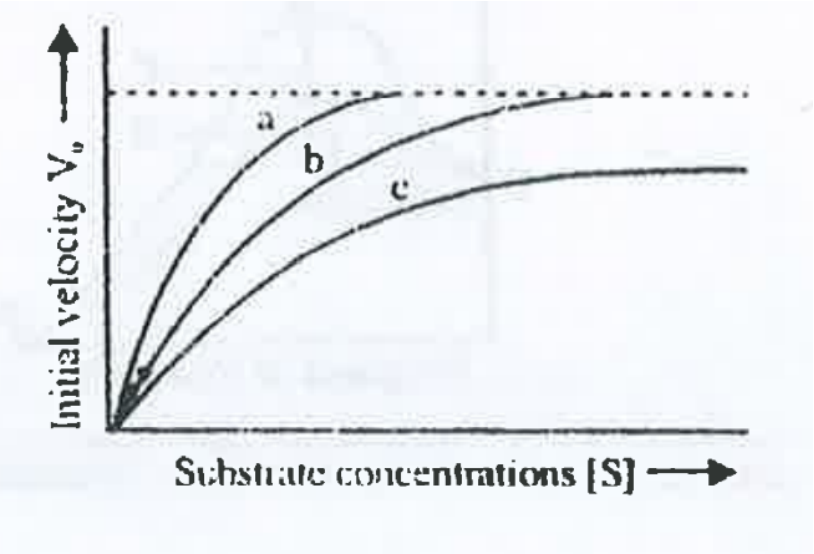
274. The figure given below shows three velocity -substrate concentration curves for an enzyme reaction. What do the curves a,b and c depit

respectively ?



A. a-normal enzyme reaction, b-competitive inhibtion, c-non-competitive inhibition .

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

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

D. a-normal enzyme reaction, b-non-copetitive inhibitor added, c-allosteric inhibitior added

Answer: A

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275. Purines are generally abbreviated as

A. R

B. Y

C. C

D. U

Answer: A

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276. Quaternary structure is present in

A. Histone

B. Haemoglobin

C. Globulin

D. Elastin

Answer: B

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277. Inulin is a polymer of

A. Amino acids

B. Glucose

C. Fructose

D. None of the above

Answer: C

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

A. Enzymes required optimum pH for maximal activity.

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

C. Enzyme are highly specific

D. Most enzyme are proteins but some are lipids .

Answer: D

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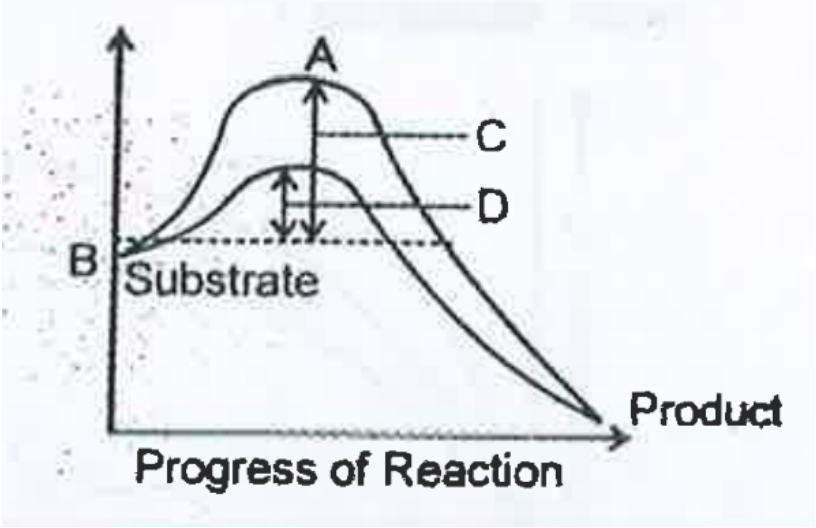
279. The figure given below shows the conversion of a substrate into product by an enzyme . In which one of the four options (a-d) the

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



A. A-Potential energy , B -Transition state, C- Activation energy without enzyme , D Activation energy without enzyme

B. A- Transition state, B - Potential energy , C- Activation energy without enzyme D-Activation energy without enzyme .

C. A-Potential energy, B- Transition state, C-Activation energy with enzyme, D-Activation energy without enzyme.

D. A- Activation energy with enzyme, B-Transition state, C- Activation energy without enzyme , D- Potential energy.

Answer: B

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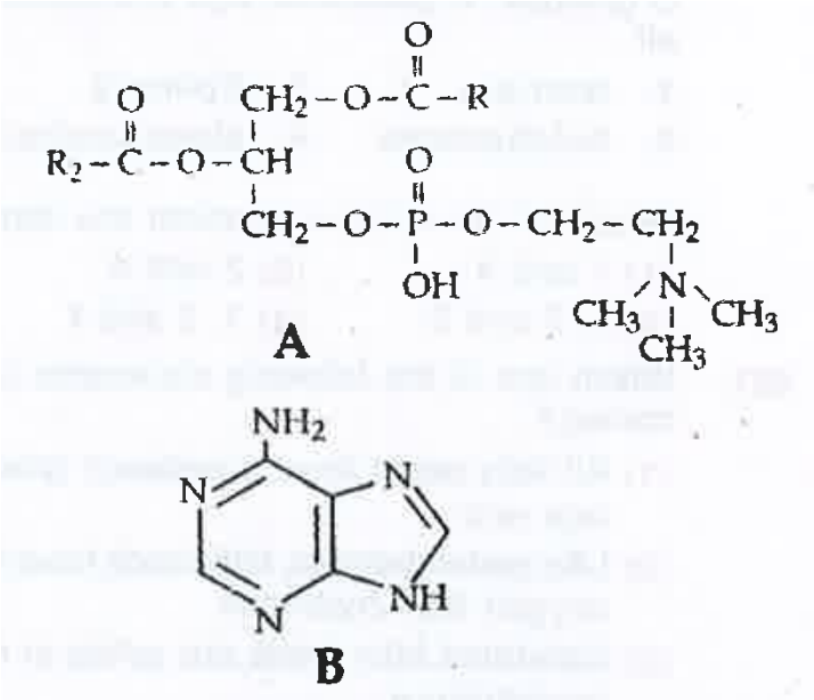
280. Which one fo the following structuraal formulae of two orgainc compounds is correctly identified along with its related function ?



A. B: Adenine- a nucleotide that makes up nucleic acids

B. A : Triglyceride - major source of enery

C. B: Uracil - a component of DNA

D. A: Lecithin - a component of cell membrane.

Answer: D

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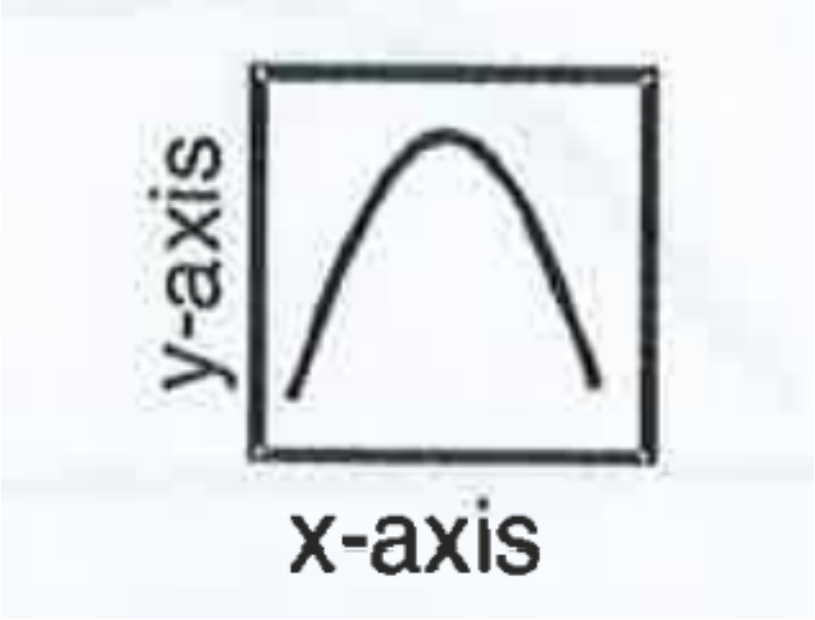
281. The curve below showns enzymatic acitvity in relation to three conditions (pH, temperature and substrate concentration).



What do the axises (x and y) represent ?

A. (1) x-axis: enzymeatic activity; y-axis: pH

B. (2) x-axis: temperature; y-axis: enzyme activity

C. (3) x-axis: Substrate concentration; y-axis: enzymatic activity

D. (4) x-axis: enzymatic activity; y-axis: tempertaure

Answer: B

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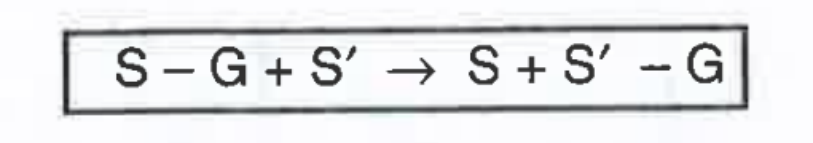
282. Select the types of enzyme involved in the following reaction:



A. dehydrogenases

B. transferases

C. hydrolases

D. lyase

Answer: B

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283. Most abundant RNA in a cell is :

A. rRNA

B. mRNA

C. tRNA

D. snRNA

Answer: A

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284. For its activity, carboxypeptidase requires

A. Niacin

B. Copper

C. Zinc

D. Iron

Answer: C

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285. which one of the following biomolecules is correctly characterized ?

A. Adenylic acid -adenosine with a glucose phosphate molecule

B. Alanine amino acid- Contains an amino group and an acidic group and acidic group anywhere in the molecule

C. Lecithin -a phosphorylated glyceride found in cell membrane.

D. Palmitic acid- an unsaturated fatty acid with 18 carbon atoms

Answer: C

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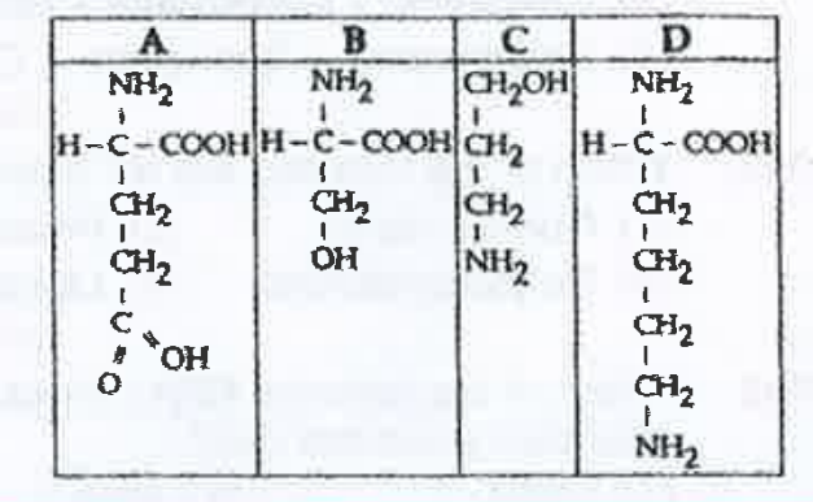
286. Which one out of A- D given below correctly represents the structural formula of the basic amino acids ?



A. D

B. A

C. B

D. C

Answer: A

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287. Which one is the most abundant protein in the animal world

A. haemoglobin

B. Collagen

C. Insulin

D. Trypsin

Answer: B

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288. Macro molecule chitin is:

A. Suluphur containing polysaccharide

B. simple polysaccdaride

C. nitrogen containing polysaccharide

D. phosphorus containg polysaccharide

Answer: C

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289. A phosphoglyceride is always made up of

A. a saturated or unsaturated fatty acid esterified to a glycerol molecule to which a phosphorus group is also attached

B. a saturated or unsaturated fatty acid esterified to a phosphate group which is also attached to a glycerol is also attached

C. only a saturated fatty acid esterified to glycerol molecule to which a phosphate group is also attached

D. only an unsaturated fatty acid esterified to a glycerol molecule to which a phosphate group is also attached

Answer: A

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

A. transient and unstable

B. permanent and stable

C. transient but stable

D. permanent but unstable

Answer: A

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291. Which one of the following is a non-reducing carbohydrate?

A. Ribose 5-phosphate

B. Malotose

C. Sucrose

D. Lactose

Answer: C

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

A. Malonate is a competitive inhibitor of succinate dehydrogenase

B. Substrate binds with enzyme at its active site

C. Addition of a lot of succinate does not reverse inhibition of succinic dehydrogenase by malonate

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

Answer: C

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293. Which one of the following statements is incorrect ?

A. In comopetitive inhibition, the inhibitor molecule is not chemically changed by the enzyme

B. The competitive inhibitor does not affect the rate of breakdown of the enzyme substrate complex

C. The presence of the competitive inhibitor decerases the km of the enzyme for the substrate

D. A competitive inhibitor reacts reversibly with the enzyme to form an enzyme-in-hibitior complex .

Answer: C

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294. The chitinous exoskeleton of arthropods is formed by the polymerisation of :

A. Kertain sulphate and chondroition sulphate

B. D-glucosamie

C. N-acetly glucosamie

D. Lipoglycans

Answer: C

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295. Which of the following biomolecules does have a phosphodiester bond ?

A. Fatty acids

B. Monosaccharides

C. amino acids

D. Nucleic acids

Answer: D

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296. A typical fat molecule is made up of

A. One glycerol and three fatty acid molecules

B. One glycerol and one fatty acid molecule

C. Three glycerol and the three fatty acid molecules

D. Three glycerol molecules and one fatty acid molecule

Answer: A

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297. Which one of the following statements is worng ?

A. Cellulose is a polysaccharide

B. Uracil is a pyrmidine

C. Glycine is a sulphur containg amino acid

D. Sucrose is a disaccharide

Answer: C

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298. Which of the following is the least likely to be involved in stabilizing the three-dimensional folding of most proteins

A. Hydrogen bonds

B. Electrostatic interaction

C. Hydrophobic interaction

D. Ester bonds

Answer: D

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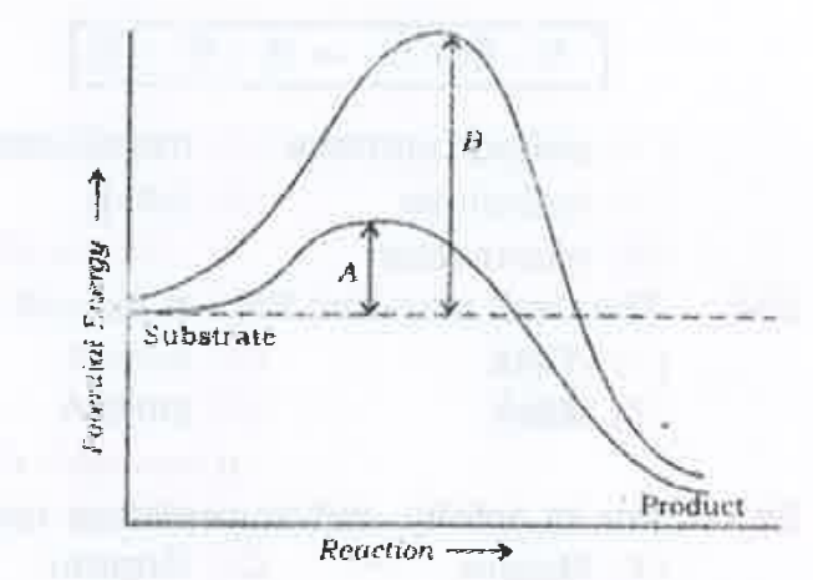
299. Which of the following describes the given graph correctly ?



A. Endothermic reaction with energy A in presence of enzyme and B in absense of enzyme

B. Exothermic reaction with energy A in presence of enzyme and B in absence of enzyme .

C. Endothermic reaction with enezyme and B in absence of enzyme .

D. Exothermic reaction with energy A in absence of enzyme and B in presence on enzyme .

Answer: B

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300. Which one of the following statements is correct with reference to enzymes

A. Aponezyme = Holoenzyme + Conezyme

B. Holoenzyme = Apoenzyme + Coenzyme

C. Coenzyme = Apoenzyme + Holoenzyme

D. Holoenzyme = Coenzyme + Co-factor.

Answer: B

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301. Which of the following are not polymeric

A. Nucleic acid

B. Proteins

C. Polysaccharides

D. Lipids

Answer: D

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302. Which of the following RNAs should be most abundant in animal cell

A. r-RNA

B. t-RNA

C. m-RNA

D. mi-RNA

Answer: A

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303. The two functional groups characteristic of sugars are

A. carbonly and hydroxly

B. carbonyl and phosphate

C. carbonyl and methyl

D. hydroxyl and methyl

Answer: A

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