BIOLOGY

BOOKS - NIKITA PUBLICATION

BIOMOLECULES

Exercise

1. The collection of various types of molecules in a cell is known as cellular pool & cellular pool consists of

A. inorganic materials like water, minerals,gases

B. organic compounds like carbohydrates, proteins, fats amino acids nucleic acids, enzymes

C. both a and b

D. compound which links the non living & living

Answer:

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2. Which of the following is macromolecule?

A. carbohydrates, lipids

B. nucleic acids,

C. proteins

D. all of these

Answer:

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3. The.most abundant substance of living beings

A. vitamins

B. minerals

C. carbohydrates

D. water

Answer:

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4. The percentage of oxygen in the protoplasm of cell.

A. 1

B. 0.7

C. 65

D. 0.5

Answer:

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5. The lipid molecules have less molecular weight than 800 Da. Even then they are considered as macromolecules because they....

A. mostly present in the plasma membrane and other membranes

B. they have high energy

C. they have less oxygen

D. all of these

Answer:

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6. The proportion of hydrogen and oxygen in carbohydrate is the same as in water i.e

A. 4:1

B. 2:1

C. 5:1

D. 3:1

Answer:

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7. Which compounds are simple carbohydrates and participate in metabolic reactions

A. glucose, fructose

B. sucrose, starch

C. cellulose, starch

D. cellulose, sucrose

Answer:

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8. Carbohydratemolecules arealso characterizedby the presence of either

A. aldehyde(-CHO)

B. keton(C=O) group

C. two or more hydroxy1 (-OH) groups

D. all of these

Answer:

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9. Which are simplest sugars are basic units of complex carbohydrates which cannot be further hydrolysedinto smallermolecules?

A. disaccharides

B. monosaccharides

C. oligosaccharides

D. polysacharides

Answer:

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10. Which of the following are soluble, crystalline, sweet sugar?

A. di or oligosaccharides

B. monosaccharides

C. both a and b

D. polysaccharides

Answer:

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11. Ribose sugar is. an important component

A. ATP

B. RNA polymerase and ATP

C. RNA

D. both A and C

Answer:

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12. The covalent bond joins monosaccharide units is called

A. glycosidic bond

B. phosphate bonds

C. hydrogen bonds

D. phosphodiester bonds

Answer:

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13. Disaccharides are composed of two monosaccharide units which of the followingis not disaccharide

A. maltose

B. sucrose

C. lactose

D. cellulose

Answer:

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14. ...is commonly called malt sugar and is intermediate compound in starch digestion.

A. maltose

B. sucrose

C. lactose

D. cellulose

Answer:

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15. When carbohydrate is composed of large number of monosaccharide units it is called as

A. disaccharide

B. oligosaccharide

C. polysaccharides

D. all of these

Answer:

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16. Polysaccharides are

A. insoluble in water

B. tasteless

C. amorphous, not reducing

D. all of these

Answer:

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17. When polysaccharide contain one type of monosaccharides it is called as... & examples are

A. homopolysaccharide and glycogen, starch, cellulose, Chitin

B. heteropolysaccharide and glycogen, starch, cellulose, Chitin

C. homo-oligosaccharide and glycogen, starch, cellulose, Chitin

D. hetero-oligosaccharide and glycogen, starch, cellulose, Chitin

Answer:

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18. A polysaccharide may contain different types of monosaccharides it is called as... and examples are....

A. homopolysaccharide...

B. heteropolysaccharide and pectin, heparin hemicelluloses, hyaluronic acid

C. homo-oligosaccharide

D. hetero-oligosaccharide

Answer:

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19. Which of the following occurs in animal cell coat as binding material (Animal cement).

A. proteins

B. fats and oils

C. vatamins

D. carbohydrates

Answer:

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20. Which of the following is wrong.

A. polysaccharides serve as structural components of cell membrane

B. cell wall of plant cell contain cellulose, starch as reserve food

C. chitin present in cell wall of fungi & insects

D. sucrose is main substrate of anaerobic respiration

Answer:

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21. Which of the following is sweetest sugar

A. starch

B. fructose

C. sucrose

D. cellulose

Answer:

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22. Glycogen is stored in

A. liver and muscles

B. liver only

C. muscles only

D. pancreas

Answer:

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23. To get quick energy one should use.

A. carbohydrate

B. fats

C. vitamins

D. proteins

Answer:

Watch Video Solution

24. Which of the following is not monosaccharide?

A. glucose

B. fructose

C. sucrose

D. galactose

Answer:

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25. Monosaccharide is

A. pentose Sugar, ribose

B. hexose sugar, glucose

C. heptose sugar like sedoheptulose

D. all the above

Answer:

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26. Which of the following is fibrous polysaccharide is

A. starch

B. chitin

C. cellulose

D. hyaluronic acid

Answer:

Watch Video Solution

27. Which of the following polysaccharide is used in tissue culture technique is...

A. heparin

B. agar-agar

C. pectocellulose

D. hyaluronic acid

Answer:

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28. Which of the following is basic unit of carbohydrates?

A. diasaccharide

B. trisaccharide

C. pentasaccharide

D. monosaccharides

Answer:

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29. The smallest and common oligosaccharides are

A. trisaccharides

B. pentasaccharides

C. polysaccharides

D. diasaccharides

Answer:

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30. Sucrose is formed by condensation of

A. molecule each of fructose and lactose

B. molecule each of lactose and maltose

C. molecule each of glucose and fructose

D. molecule each of fructose and maltose

Answer:

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31. The least sweet sugar present about 7% in milk

A. glucose

B. maltose

C. lactose

D. galactose

Answer:

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32. Chitin is a polysaccharide found in the exoskeleton of

A. Prawn

B. Crabs

C. Insects

D. all of these

Answer:

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33. After water..... are most abundant compounds in protoplasm.

A. proteins

B. fats and oils

C. vitamins

D. carbohydrates

Answer:

Watch Video Solution

34. The differences among the species are due to differences in their

A. carbohydrate component

B. protein components

C. fats and oils

D. vitamin

Answer:

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35. All proteins consist of.....in addition to the carbon, hydrogen arid oxygen

A. magnesium

B. potassium

C. calcium

D. nitrogen

Answer:

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36. The cell organelles concerned with protein synthesis

A. lysosome

B. ribosome

C. Golgi body

D. peroxisome

Answer:

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37. In protein, the amino group $(-NH_2)$ of one.amino acid is linked to the

A. another amino group

B. nitrogen group

C. `-COOH group

D. CH_4 group

Answer:

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38. In protein the amino acid are linked by

A. sulphur bond

B. glycosidic bond

C. peptide bond

D. hydrogen bond

Answer:

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39. When proteins are composed of only amino acids or their derivatives, they are called as

A. simple protein

B. derived protein

C. conjugated protein

D. primary protein

Answer:

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40. When proteins having amino acids with some non protein part called prosthetic group they are called as

A. simple protein

B. derived protein

C. conjugated protein

D. primary protein

Answer:

Watch Video Solution

41. Lipoproteins,Nucleoprotein, Glycoproteins, Chromo-proteins are

A. simple proteins

B. derived proteins

C. primary proteins

D. conjugated proteins

Answer:

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42. Which types of proteins on hydrolysis it gives intermediate products like proteases, peptones?

A. simple protein

B. derived protein

C. primary protein

D. conjugated protein

Answer:

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43. In addition topeptidebond,aminoacids are linked by..... bonds form between oxygen of one amide group and hydrogen of another amide group.

A. glycosidic bonds

B. phosphate bonds

C. hydrogen bonds

D. phosphodiester bonds

Answer:

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44. The..... structure of protein is highly unstable &

....is most stable structure of protein

A. primary, secondary

B. quaternary , primary

C. secondary, quaternary

D. secondary, quaternary

Answer:

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45. Which of the following is/are role of protein

A. they acts as enzymes

B. many hormones are protein

C. some proteins form parts of tissues e.g keratin in hair

D. all of these

Answer:

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46. Which is most abundant protein in our body?

A. keratin

B. elastin

C. collagen

D. insulin

Answer:

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47. Which proteins helps in contraction and relaxation of muscles?

A. keratin

B. elastin

C. Collagen

D. Tropomyosin

Answer:

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48. Which proteins helps in transport of O_2 in our body

A. keratin

B. haemoglobin

C. collagen

D. action and myosin

Answer:

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49. Which are building block of proteins?

A. sugars

B. minerals

C. vitamins

D. amino acids

Answer:

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50. Milk protein is

A. lactogen

B. myosin

C. casein

D. pepsin

Answer:

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51. In India the best source for proteins in herbivorous persons is

A. pulses

B. potato

C. cereales

D. fruits

Answer:

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52. Variations in proteins are due to

A. sequence of amino acids

B. number of amino acids

C. number of R-group

D. number of COOH group

Answer:

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53. Proteins maintain acid base balance in cell due to

A. absence of acidic and basic groups

B. presence of acidic and basic groups

C. they are neutral

D. none of these

Answer:

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54. How many amino acids used in formation of proteins are

A. 35

B. 20

C. 10

D. 25

Answer:

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55. The molecular weight of hemoglobin is

A. 15000 Daltons

B. 10000 Daltons

C. 20000 Daltons

D. 64000 Daltons

Answer:

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56. Which of the following are structural constituents of cell?

A. vitamins

B. glucose

C. protein

D. starch

Answer:

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57. Two amino acids are condensed by removal of a water molecule to form a

A. amide linkage

B. peptide linkage

C. disulphide linkage

D. monosulphide linkage

Answer:

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58. Which of the following is transport protein?

A. actin

B. myosin

C. Haemoglobin

D. glycoprotein

Answer:

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59. Immuenoglobulins are

A. offensive protein

B. defensive protein

C. contractile protein

D. transport protein

Answer:

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60. A straight chain of amino acids liked by peptide bonds to form

A. primary structure

B. secondary structure

C. tertiary structure

D. quarternary structure

Answer:

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61. Secondary structure of proteins refers to

A. straight chain

B. spirally coiled

C. two or more polypeptide chains unite

D. chain does not form helix

Answer:

62. The specificity of any protein, its physical & enzymatic properties depends upon

A. absence of amino acids

B. linear sequence of amino acids

C. amono acid without any sequence

D. number essential of amino acids

Answer:

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63. Match column I (organic compound) with column II (examples) and choose the correct combination from the given options.

Column-I	Column-II
A. Fatty acid	I. Glutamic acid
B. Phospholipid	II. Tryptophan
C. Aromatic amino acid	III. Lecithin
D. Acidic amino acid	IV. Palmitic acid

A. A-III, B-IV, C-I, D-II

B. A-IV, B-III, C-II, D-I

C. A-II, B-III, C-IV, D-I

D. A-I, B-II, C-III, D-IV

Answer:

64. Which of the following is a storage protein in wheat?

A. ferroprotein

B. mucoprotein

C. glutenin

D. zein

Answer:

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65. Total number of amino acid found in protoplasm and involved in protein synthesis are

A. 8

B. 20

C. 30

D. 35

Answer:

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66. Which one of the following is an example of conjugated protein?

A. casein

B. albumin

C. globulin

D. glutelin

Answer:

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67. The major fibrous protein that provide external protection to vertebrate parts ilike Nails, horns and hoofs contain

A. collagen

B. keratin

C. elastin

D. Hb

Answer:

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68. Which of the folliowing is true for lipids?

A. animal fat is often solid

B. plants there are liquid

C. waxes are produced by plants and animals

D. all of these

Answer:

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69. Lipids are insoluble in water but freely soluble in organic solvents like

A. benzene

B. chloroform

C. hot alcohol

D. all of these

Answer:

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70. Compounds of:C, H, O but the ratio of Hydrogen and Oxygen is. not 2:1and amount of oxygen is considerably very less in....

A. sugars

B. vitamins

C. lipids

D. amino acids

Answer:

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71. Which compounds provide more than double energy as compared to carbohydrates.

A. Fats

B. amino acids

C. proteins

D. organic acids

Answer:

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72. Which are esters of fatty acids with alcohol.

A. compound lipids

B. simple lipids

C. derived lipids

D. complex lipids

Answer:

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73. Which of thefollowing is true?

A. monoglyceride is formed of one molecule of glycerol and molecule of fatty acid

B. diglycerid is formed of on glycerol and two fatty acid molecules

C. triglycerides are formed of one glycerol and three fatty acid molecules

D. all of these

Answer:

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74. The fatty acids which do not have double bond between carbon atoms of its chain and consist off

maximum possible hydrogen atoms are

A. unsaturated

B. saturated

C. essential fatty acids

D. none of these

Answer:

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75. Which fatty acids are less reactive-so they tend to store in body and cause obesity?

A. unsaturated

B. saturated

C. essential fatty acids

D. none of these

Answer:

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76. The fatty acids contain one or more double.bonds between carbon atoms of its chain

are unsaturated fatty acid & they are also called as essential fatty? acids because

A. animals can synthesize

B. plants are unable to synthesize

C. animals are unable to synthesize

D. they are availabel from animals only

Answer:

77. Which fatty acids are more reactive so they tends. to metabolise in body and provide energy?

A. unsaturated

B. saturated

C. non essential fatty acids

D. none of these

Answer:

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78. Fats containing ..... fatty acids are liquid at room temperature and are called oils:

A. saturated

B. unsaturated

C. none essential fatty acids

D. both (a)and (b)

Answer:

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79. Which of the following is true

A. most of the plant fats are unsaturated fatty acids

B. animal fats like butter are saturated fats and are solid at room temperature

C. both animal and plant fats are liquid at room temperature

D. both (a)and (b)

Answer:

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80. Which are recommended by physicians for persons who suffers from high blood cholesterol or cardio-vascular diseases.

A. oils with polyunsaturates

B. oil with polysaturates

C. animal fats like butter

D. fats solid at room temperature

Answer:

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81. When lipids, contain some additional groups are present in addition to fatty acids and alcohol such as nitrogen,phosphorous, sulphur, protein are called as

A. compound lipids

B. simple lipids

C. derived lipids

D. complex lipids

Answer:

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82. Which are the most abundant lipids and are major constituents of cell membrane

A. simple lipids

B. glycolipids

C. phospholipids

D. derived lipids

Answer:

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83. Which lipids are the hydrolytic products of lipids?

A. simple lipids

B. compound lipids

C. derived lipids

D. complex lipids

Answer:

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84. Which of the folloiwng are derived lipids?

A. steroids

B. waxes

C. carotenoids, essential oils

D. all of these

Answer:

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85. Which of the folloiwng are animals steroid?

A. cholesterol

B. aldosterone

C. testosterone

D. all of these

Answer:

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86. Plant waxes are

A. esters of sturated fatty acids with long chain alcohols and keton

B. have high melting point & not digested by animals

C. are secreted by epidermis and form a covering on aerial parts

D. all of these

Answer:

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87. All of the folloiwng are roles of lipid except.

A. act as reserve food material for energy

B. acts as insulator for heat in skin

C. wax reduce the rate of transpiration

D. cholesterol take part in the synthesis of vitamin-A

Answer:

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88. Cholesterol takes part in the synthesis of vitamin

A. vitamin D

B. vitamin-A

C. vitamin-C

D. vitamin-B complex

Answer:

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89. Fast in the body are formed when

A. Glycogen is formed from glucose

B. Sugar level becomes stable in blood

C. Extra glycogen storage in liver and muscles is stopped

D. All of them

Answer:

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90. Tri glycerides are

A. Acidic fats

B. Basic fats

C. Neutral fats

D. compound lipids

Answer:

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91. Secondary metabolites such as nicotine, strychnine and caffeine are produced by plant for their

A. Defence action

B. Effect on reproduction

C. Nutritive value

D. Growth responds

Answer:

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92. Identify the basic amino acid from the following

A. Lysine

B. Valine

C. Tyrosine

D. Glutamic Acid

Answer:

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93. Match the following:

i) Inhibitor of catalytic activity	p) Ricin
ii) Possess peptide bonds	q) Malonate
iii) Cell wall material in fungi	r) Chitin
iv) Secondary metabolites	s) Collagen

A. r s p q

B. q r p s

C. q s r p

D. r p s q

Answer:

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94. Identify the substances having glycosidic bond and peptide bond, respectivley in their structure.

A. Cellulose, lecithin

B. Inulin, insulin

C. Chitin, cholesterol

D. Glycerol, trypsin

Answer:

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95. Sugar, amino acids and nucleotides unite to their respective subunits to form.....

A. bioelements

B. micromolecules

C. macromolecules

D. all of these

Answer:

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96. The.most abundant substance of living beings

A. vitamins

B. minerals

C. carbohydrates

D. water

Answer:

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97. The percentage of oxygen in the protoplasm of cell.

A. 1

B. 0.7

C. 0.65

D. 0.5

Answer:

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98. The lipid molecules have less molecular weight than 800 Da. Even then they are considered as macromolecules because they....

A. mostly present in the plasma membrane

B. they have high energy

C. they have less oxygen

D. all of these

Answer:

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99. Glycosidic bond is found in.....

A. Disaccharide

B. Nucleosides

C. Polysaccharides

D. all of these

Answer:

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100. Which are simplest sugars are basic units of complex carbohydrates which cannot be further

hydrolysedinto smallermolecules?

A. disaccharides

B. monosaccharides

C. oligosaccharides

D. polysaccharides

Answer:

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101. Amino acids in a polypetide are joined by.....bond.

A. Disulphide

B. glycosidic

C. hydrogen bond

D. peptide bond

Answer:

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102. Lipids associated with cell membrane are.....

A. Spingomycelin

B. Isoprenoids

C. Phospholipids

D. Cholestrol

Answer:

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103. Linoleic, Linolenic and.....acids are referred as essential fatty acids since they cannot be synthesized by the body and hence must be included in daily diet.

A. Arachidonic

B. Oleic

C. Steric

D. Palmitic

Answer:

104. When polysaccharide contain one type of monosaccharides it is called as... & examples are

A. homopolysaccharieandglycogen,starch,cellulose, Chitin

B. heteropolysacchare andglycogen,starch,cellulose, Chitin

C. homooligosaccharie and glycogen, starch, cellulose, Chitin

D. heterooligosaccharide and glycogen, starch,cellulose,Chitin

Answer:

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105. Haemoglobin is a type of.....protein, which plays indispensable part in respiration.

A. simple

B. derived

C. conjugated

D. complex

Answer:

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106. When inorganic ions or metallo-organic molecules bind to apoenzyme, they together form.....

A. isoenzyme

B. holoenzyme

C. denatured enzyme

D. none of these

Answer:

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107. Which of the following is main fuel of body or main source of energy?

A. proteins

B. fats & oils

C. vitamins

D. carbohydrates

Answer:

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108. Which of the following polysaccharide is used in tissue culture technique is...

A. heparin

B. agar-agar

C. pectocellulose

D. hyaluronic acid

Answer:

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109. After water..... are most abundant compounds in protoplasm.

A. proteins

B. fats & oils

C. vitamins

D. carbohydrates

Answer:

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110. In protein, the amino group $(-NH_2)$ of one.amino acid is linked to the

A. another amino group

B. nitrogen group

C. (-)COOH group

D. CH4 group

Answer:

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111. In enzyme kinetics, Km - Vmax/2. If Km value is lower, it indicates.....

A. enzyme has less affinity for substrate

B. enzyme has higher affinity towards substrate

C. There will be no product formation

D. all active sites of enzymes are saturated

Answer:

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112. When proteins are composed of only amino acids or their derivatives, they are called as

A. simple protein

B. derived protein

C. conjugated protein

D. primary protein

Answer:

Watch Video Solution

113. When proteins having amino acids with some non protein part called prosthetic group they are called as

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114. Lipoproteins,Nucleoprotein, Glycoproteins, Chromo-proteins are

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D. conjugated proteins

Answer:

Watch Video Solution

115. Which types of proteins on hydrolysis it gives intermediate products like proteases, peptones?

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B. derived protein

C. primary protein

D. conjugated protein

Answer:

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116. Which is most abundant protein in our body?

A. keratin

B. elastin

C. collagen

D. insulin

Answer:

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117. In addition topeptidebond,aminoacids are linked by..... bonds form between oxygen of one amide group and hydrogen of another amide group.

A. glycosidic bonds

B. phosphate bonds

C. hydrogen bond

D. phosphodiester bond

Answer:

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118. Which proteins helps in contraction and relaxation of muscles?

A. keratin

B. haemoglobin

C. collagen

D. actin & myosin

Answer:

Watch Video Solution

119. Which proteins helps in transport of O_2 in our body

A. keratin

B. haemoglobin

C. collagen

D. actin & myosin

Answer:

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120. Secondary structure of proteins refers to

A. straight chain

B. spirally coiled

C. two or more polypeptide chains unite

D. chain does not form helix

Answer:

121. Which of the following is a storage protein in wheat?

A. ferroprotein

B. mucoprotein

C. glutenin

D. dnomoproteins

Answer:

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122. The major fibrous protein that provide external protection to vertebrate parts ilike Nails, horns and hoofs contain

A. collagen

B. keratin

C. elastin

D. Hb

Answer:

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123. Which are esters of fatty acids with alcohol.

A. compound lipids

B. simple lipids

C. derived lipids

D. complex lipids

Answer:

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124. The fatty acids which do not have double bond between carbon atoms of its chain and

consist off maximum possible hydrogen atoms are

A. unsaturated

B. saturated

C. essential fatty acids

D. none of these

Answer:

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125. Which fatty acids are less reactive-so they tend to store in body and cause obesity?

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B. saturated

C. essential fatty acids

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Answer:

Watch Video Solution

126. The fatty acids contain one or more double.bonds between carbon atoms of its chain

are unsaturated fatty acid & they are also called as essential fatty? acids because

A. animals can synthesize

B. plants are unable to synthesize

C. animals are unable to synthesize

D. they are available from animals only

Answer:

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127. Which lipids are the hydrolytic products of lipids?

A. simple lipids

B. compound lipids

C. derived lipids

D. complex lipids

Answer:

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128. Which of the folloiwng are derived lipids?

A. steroids

B. waxes

C. carotenoids, essential oils

D. all of these

Answer:

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129. All of the folloiwng are roles of lipid except.

A. act as reserve food material for energy

B. act as insulator for heat in skin

C. wax reduce the rate of transpiration

D. cholestrol takes part in the synthesis of vitamin A

Answer:

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130. A nucleotide is formed of

A. purine, pyrimidine and phosphate

B. purine, sugar and phosphate

C. purine, sugar and nitrogen base

D. pyrimidine/purine sugar and phosphate

Answer:

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131. DNA is present in

A. nuclear

B. mitochondrial matrix

C. chloroplast stroma

D. all of these

Answer:

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132. Major groove is site for binding.....

A. histone proteins

B. non histone proteins

C. non protein groups

D. none of these

Answer:

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133. Which type of RNA is longest in there types

A. mRNA

B. tRNA

C. rRNA

D. all of these

Answer:

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134. The acceptor arm which do not have loops & amino acids are attached to.....of this arm.

A. 3' end of longer arm

B. 5' end of longer arm

C. 3' shorter end

D. 5' of shorter arm

Answer:

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135. It is said that elemental composition of living organisms and that of in animate objects (like earth's crust) are similar in the sense that all the majorelements are present in both. Then what would be the difference between these two groups? Choose a correct answer from among the following:

A. Living organisms have more gold in them than inanimate objects

B. Living organisms have more water in their body than inanimate objects

C. Living organisms have more carbon, oxygen and hydrogen per unit mass than inanimate objects

D. Living organisms have more calcium in them than inanimate objects.

Answer:

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136. Many elements are found in living organisms either free or in the form of compounds. One of

the following is not, found in living organisms.

A. Silicon

B. Magnesium

C. Iron

D. Sodium

Answer:

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137. Aminoacids, as the name suggests, have both an amino group and a carboxyl group in their

structure. In addition, all naturally occurring aminoacids (those which are found in proteins) are called L aminoacids. From this, can you guess from which compound can the simplest aminoacid be made?

A. Formic acid

B. Methane

C. Phenol

D. Glycine

Answer:

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138. Many organic substances are negatively charged e.g., acetic'acid, while others are positively charged e.g., ammonium ion. An aminoacid under certain conditions would have both positive and. negative charges simultaneously in the same molecule.Such a form of aminoacid is called.

A. Positively charged form

B. Negatively charged form

C. Neutral form

D. Zwitterionic form

Answer:

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139. Sugars are technically called carbohydrates, referring to the fact that their formulae are only multiple of C(H2O). Hexoses therefore have six carbons, twelve hydrogens.and six oxygen atoms. Glucose is a hexose. Choose from among the following another hexose.

A. Fructose

B. Erythrose

C. Ribulose

D. Ribose

Answer:

140. When you take cells or tissue pieces and grind them with an acid in a mortar and pestle, all the small biomolecules dissolve in the acid proteins, polysaccharides and nucleic,acids are insoluble in mineral acid and get precipitated. (The acid soluble compounds include aminoacids,

nucleosides, small sugars etc). When one adds a phosphate group to a nucleoside one gets another acid soluble biomolecule called.

A. Nitrogen base

B. Adenine

C. Sugar phosphate

D. Nucleotide

Answer:

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141. When we homogenise any tissue in an acid the acid solubel pool represents.

A. Cytoplasm

B. Cell membrane

C. Nucleus

D. Nucleic acid

Answer:

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142. The most abundant chemical is living organisms could be.

A. Protein

B. Water

C. Sugar

D. Mitochondria

Answer:

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143. A homopolymer has only one type of buildingblock called monomer repeated 'n'number of times. A heteropolymer has more than one type of monomer. Proteins are heteropolymers made of aminoacids. While a nucleic acid like DNA or RNA is made of only 4 types of nucleotide monomers, proteins are made of.

A. 20 types of monomers

B. 40 types of monomers

C. 3 types of monomers

D. Only one type of monomer

Answer:

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144. Proteins perform many physiological functions. For example, some functions-as enzymes. One of the following represents an additional function -that some proteins discharge

A. Antibiotics

B. Pigment conferring colour to skin

C. Pigments making colours of flowers

D. Hormones

Answer:

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Example

1. Which are different cell components?

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2. The exoskeleton of insects is made up of chitin.

This is a.....

A. mucoprotein

B. lipid

C. lipoprotein

D. polysaccharide

Answer:

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3. Why do high cholesterol level in the blood cause heart diseases?

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4. Polyunsaturated fatty acids are believed to decrease blood cholesterol level. How?

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5. Which of the following is a simple protein.

A. nucleoprotein

B. mucoprotein

C. chromoprotein

D. globulin

Answer:

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6. Which enzyme is needed to digest food reserve in castor seed?

A. amylase

B. diastase

C. lipase

D. protease

Answer:

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7. Co-enzyme is....

A. often a metal

B. often a vitamin

C. always an organic molecule

D. always an inorganic molecule

Answer:

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8. Name the chemical found in the living cell which has necessary message for the production of all enzymes required by it.

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9. What are building blocks of life?

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10. Explain the peptide bond.

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11. How many types of polysaccharides you know?

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12. What is reducing sugar?

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13. Difference between DNA and RNA because of

A. sugar and base

B. sugar and phosphate

C. phosphate and base

D. sugar only

Answer:

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14. Medicines are either man made (i.e.,synthetic) or obtained from living organisms like plants, bacteria, animals etc. and hence the latter are called natural products. Sometimes natural products are chemically altered by man to reduce toxicity or side effects. Write against each of the following whether they were initially obtained as a natural product or as a synthetic chemical.

Penicillin_____.

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15. Medicines are either man made (i.e.,synthetic) or obtained from living organisms like plants, bacteria, animals etc. and hence the latter are called natural products. Sometimes natural products are chemically altered by man to reduce toxicity or side effects. Write against each of the following whether they were initially obtained as a natural product or as a synthetic chemical.

Sulfonamide_____.

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16. Medicines are either man made (i.e.,synthetic) or obtained from living organisms like plants, bacteria, animals etc. and hence the latter are called natural products. Sometimes natural products are chemically altered by man to reduce toxicity or side effects. Write against each of the following whether they were initially obtained as a natural product or as a synthetic chemical.

Vitamin C_____.

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17. Medicines are either man made (i.e.,synthetic) or obtained from living organisms like plants, bacteria, animals etc. and hence the latter are called natural products. Sometimes natural products are chemically altered by man to reduce toxicity or side effects. Write against each of the following whether they were initially obtained as a natural product or as a synthetic chemical.

Growth Hormone_____.

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18. Select an appropriate chemical bond among ester bond, glycosidic bond, peptide bond and hydrogen bond and write against each of the following:

Polysaccharide_____.

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19. Select an appropriate chemical bond among ester bond, glycosidic bond, peptide bond and hydrogen bond and write against each of the

following:

Protein____.

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20. Select an appropriate chemical bond among ester bond, glycosidic bond, peptide bond and hydrogen bond and write against each of the following:

Fat_____.

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21. Select an appropriate chemical bond among ester bond, glycosidic bond, peptide bond and hydrogen bond and write against each of the following:

Water_____.

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22. Wrtie the name of any one amino acid, sugar nucleotide and fatty acid.

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23. Reaction given below is catalysed by oxido reductase between two substrates A and A', complete the reaction. A reduced +A' oxidised.

24. How are prosthetic groups different from co-factors?

25. Glycine and Alanine are different with respect to one substituent on the a-carbon. What are the other common substituent groups?

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26. Starch, Cellulose, Glycogen, Chitin are polysaccharides found among the following. Choose the one appropriate and write against each.

Cotton fibre_____.

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27. Starch, Cellulose, Glycogen, Chitin are polysaccharides found among the following. Choose the one appropriate and write against each.

Exoskeleton of cockroach_____.

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28. Starch, Cellulose, Glycogen, Chitin are polysaccharides found among the following. Choose the one appropriate and write against

each.

Liver_____.

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29. Starch, Cellulose, Glycogen, Chitin are polysaccharides found among the following. Choose the one appropriate and write against each.

Peeled potato_____.

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30. What is the role of each component of cell?

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31. Enlist the natural sources, structural units and functions of the following polysaccharides. starch, glycogen and cellulose.

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32. List name of structural polysaccharides.

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33. What are Carbohydrates? OR

Define Carbohydrates

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34. Write a note on oligosaccharide and glycosidic bond.

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35. Differentiate between the saturated and unsaturated fats.

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36. All proteins are made up of the some amino acids then how proteins found in human beings and animals may be different from those of other?

Watch Video Solution

37. Differentiate between the saturated and unsaturated fats.

Watch Video Solution

38. If double stranded DNA has 14% C (cytosine) what percent A (adenine), T(thymine) and G(gaunine) would you expect?

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39. Plant fats are liquid at room temperature while animal fats are solid.

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40. Schematically represent primary, secondary and tertiary structures of a hypothetical polymer say for example a protein.

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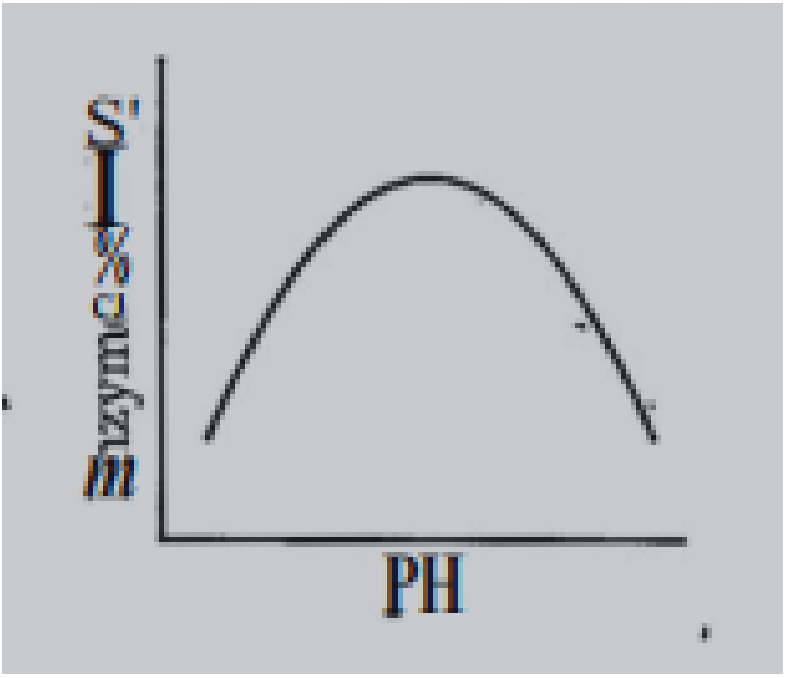
41. Enzymes are proteins. Proteins are long chains of aminoacids linked to each other by peptide bonds. Amino acids have many functional groups in their structure. These functional groups are, many of themat least, ionisable. As they are weak acids and bases in chemical nature, this ionization is influenced by pH of the solution. For many enzymes, activity isinfluenced by surrounding pH.

This is depicted in the curve below, explain briefly.



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42. Is rubber a primary metabolite or a secondary metabolite? Write four sentences about rubber.

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43. Nucleic acids exhibit secondary structure, justify with example.

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44. Comment on the statement "living state is non-equilibrium steady-state to be able to perform work".

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45. What are lipids? Classify them and give at least one example of each.

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46. What are conjugated proteins? How do they differ simple ones? Give one example of each.

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47. What is nucleotide? How is it formed? Mention the names of all nucleotides.

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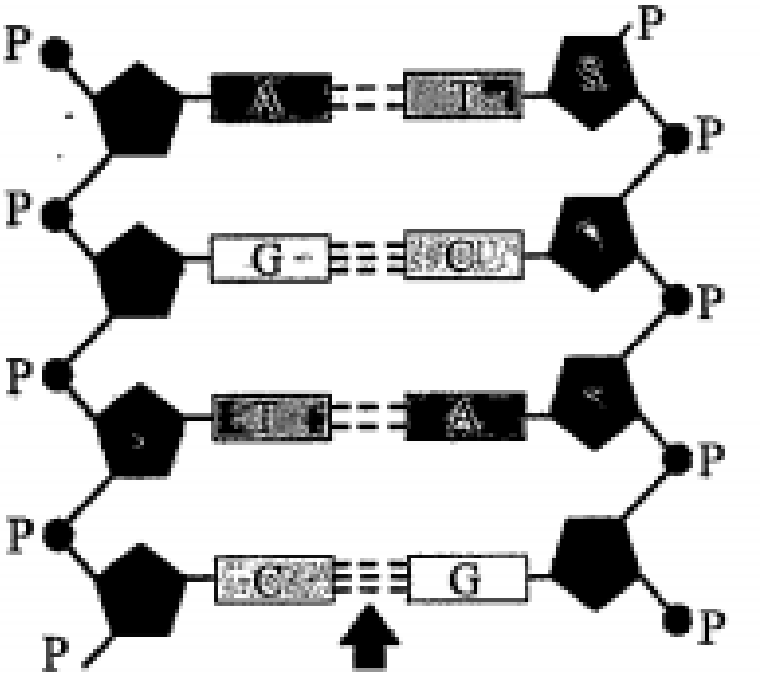
48. Observe the following figure and name the type of bond shown by arrow in the structure.



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49. Enlist the significance of carbohydrates.

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50. Explain secondary structure of protein with examples.

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51. Explain the induced fit model for mode of enzyme action.

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52. Describe the concept of metabolic pool.

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53. How do secondary metabolites useful for mankind?

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54. Complete the following chart.

Protein - Physiological role

Collagen - provide strength and structure.

Actin & myosin.....

Immunoglobulin.....made by the body to fight a new infection.....IgG.

Haemoglobin.....

Fibrinogen -

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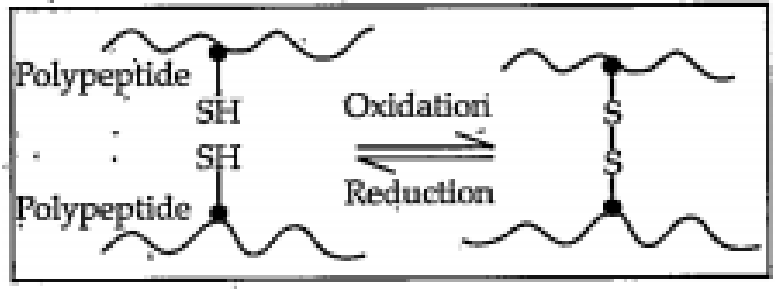
55. Answer the questions with reference to the following figure.



Name the type of bond formed between two polypeptides.

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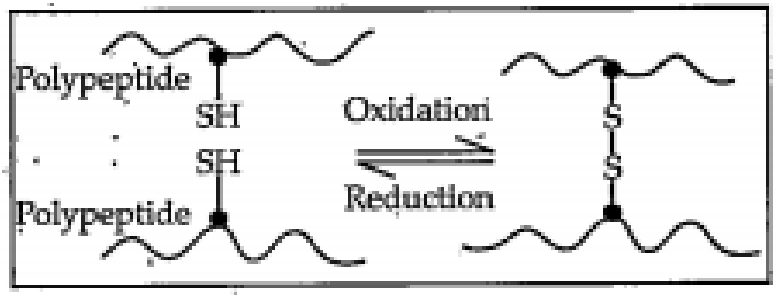
56. Answer the questions with reference to the following figure.



Which amino acid is involved in the formation of such bond?

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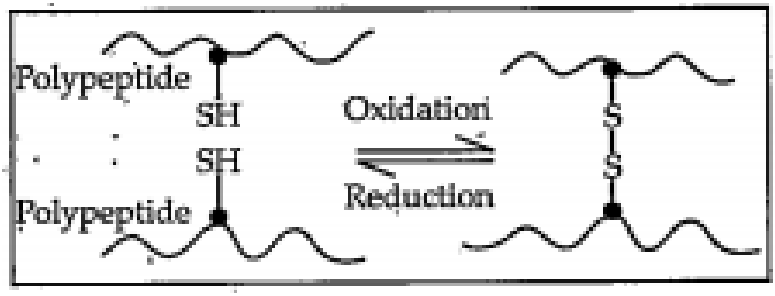
57. Answer the questions with reference to the following figure.



Amongst I, II, III and IV structural level of protein, which level of structure includes such bond?

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58. Match the following items given in column I and II.

Column - I	Column - II
i. RNA	a. Induced fit model
ii. Yam plant	b. Flax seeds
iii. Koshland	c. Hydrolase
iv. Omega-3-fatty acid.	d. Uracil.
v. Sucrase	e. Anti-fertility pills.

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59. Describe the structure of DNA molecule as proposed by Watson and Crick.

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60. Difference between DNA and RNA because of

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61. List the important poperties of enzymes.

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62. Enlist the examples of simple protein and add their significance.

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63. What is RNA? Enlist types of RNA.

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64. What are building blocks of life?

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65. Explain the classes of carbohydrates with example.

Watch Video Solution

66. Describe the types of lipids and mention their biological significance.

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67. Explain the chemical nature, structure and role of phospholipids in biological membrane.

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68. Describe classes of protein with their importance.

Watch Video Solution

69. What are enzymes? How are they classified? Mention example of each class.

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70. Describe the factors affecting enzyme action.

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71. What are nucleic acids? Enlist the point of difference among DNA and RNA.

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72. What are the types of RNA? Mention the role of each class of RNA.

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73. What is metabolism? How metabolic pool is formed in the cell.

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74. Formation of enzyme-substrate complex (ES) is the first step in catalysed reactions. Describe the other steps till the formation of product.

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75. What are different classess of enzymes? Explain any two with the type of reaction they catalyse.

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76. Nuclei acids exhibit secondary structure. Describe through Watson-Crick Model.

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77. What is the difference between a nucleotide and nucleoside? Give two examples of each.

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78. What are macromolecules? Give examples.

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79. Illustrate a glycosidic, peptide and a phospho-diester bond.

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80. What is meant by tertiary structure of proteins?

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81. Find and write down structures of 10 interesting small molecular weight biomolecules. Find if the there is any industry which manufactures the compounds by isolation. Find out who are the buyers.

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82. Proteins have primary structure. If you are given a method to know which amino acid is at either of the two termini (ends) of a protein, can you connect this information to purity or homogeneity of a protein?

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83. Find out and make a list of proteins used as therapeutic agents. Find other application of proteins (e.g. Cosmetics etc.)

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84. Explain the composition of triglyceride.

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85. Can you describe what happens when milk is converted into curd or yoghurt, from your understanding of proteins.

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86. Can you attempt building models of biomolecules using commercially available atomic models (Ball and Stick models).

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87. Attempt titrating an amino acid against a weak base and discover the number of dissociating (ionizable) functional groups in the amino acid.

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88. Draw the structure of the amino acid, alanine.

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89. List the important poperties of enzymes.

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90. What are gums made of? Is fevicol different?

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91. Find out how much cellulose is made by all the plants in the biosphere and compare it with how much of paper is manufactured by man and hence what is the consumption of plant material by man annually. What a loss of vegetation.

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