



BIOLOGY

BOOKS - A2Z BIOLOGY (HINGLISH)

BIOMOLECULES

**Section A Topicwise Questions Topic 1 Chemical Analysis
Metabolites And Bio Macromolecules**

1. Read the following statements and find out the incorrect statement(s).

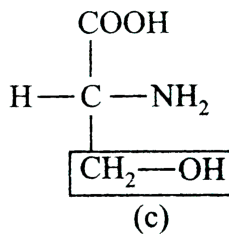
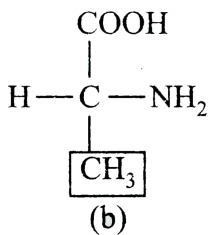
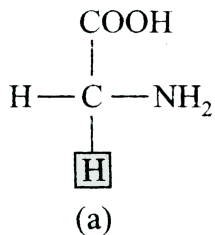
- A. All the elements present in sample of earth's crust are also present in a sample of living tissue.
- B. Relative abundance of carbon and hydrogen with respect to other elements is higher in earth's crust than in any living organisms.
- C. During chemical analysis trichloroacetic acid (Cl_3CCOOH) is used.
- D. All of the above

Answer: B



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2. Recognise the figure and find out the correct matching .



A. a-serine, b-glycine, c-alanine

B. a-glycine, b-serine, c-alanine

C. a-glycine, b-alanine, c-serine

D. a-alanine, b-serine, c-glycine

Answer: C



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3. Element that are found more abundant in earth's crust than in human body are

A. C,H,O,N,S

B. Na, Si, Ca, Mg

C. S, Na, Ca, N

D. Si, H, Mg, O

Answer: B



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4. Element that are found more abundant in human body than in earth's crust are

A. C,H,O,N,S

B. Na, Si, Ca, Mg

C. S, Na, Ca, N

D. Si, H, Mg, O

Answer: A



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5. Find out the correct matching .

Element	% weight of	
	Earth's crust	Human body
C	...a...	18.5
O	...b...	65.0
S	0.03	...c...
Si	...d...	Negligible

A. a-46.6,b-27.7,c-0.03,d-0.3

B. a-0.03,b-46.6,c-0.3,d-46.6

C. a-0.3,b-27.7,c-0.03,d-46.6

D. a-0.3,b-46.6,c-0.03,d-27.7

Answer: B



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6. If one weighs as small amount of a living tissue and dry it. Now if the tissue is fully burnt, all the carbon compounds are oxidised to gaseous form and are removed. What is the remaining called ?

A. Filtrate

B. Retentate

C. Ash

D. Slurry

Answer: C



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7. Fill in the blanks :

1. Based on the nature of ..a.... there are 20 amino acids.
2. Based on number of ...b..and ..c.... groups, there are acidic, basic and neutral amino acids.
3. The R group in serine isd...

A. a-amino, b-R group, c-carboxyl, d-methyl

B. a-carboxyl, b-amino, c-R group, d-hydroxymethyl

C. a-R group, b-carboxyl, c-amino, d-hydroxymethyl

D. a-R group, b-carboxyl, c-amino, d-methyl

Answer: C



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8. Match the column I and II , and choose the correct combination from the options given.

Column I

- a. ~~Acidic amino acid~~
- b. ~~Basic amino acid~~
- c. ~~Neutral amino acid~~
- d. ~~Essential amino acid~~

Column II

1. Valine
2. Glutamic acid
3. Phenylalanine
4. Lysine

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

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

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

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

Answer: A



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9. A fatty acid has a carboxyl group attached to an R group. The number of carbon atoms in a fatty acid may be

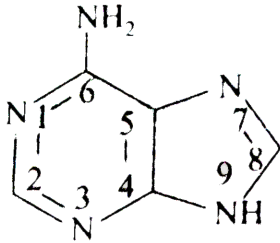
- A. 1 carbon to 19 carbons
- B. 2 carbons to 19 carbons
- C. 1 carbons to 20 carbons
- D. 2 carbond to 20 carbons

Answer: D

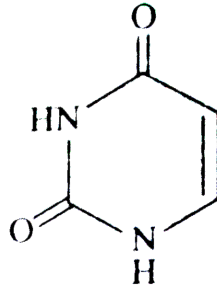


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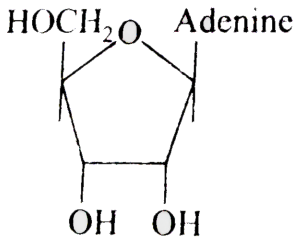
10. Recognise the figure and find out the correct matching .



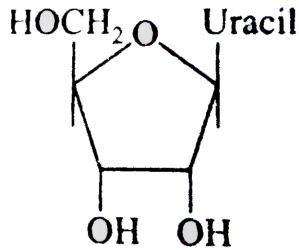
(a)



(b)



(c)



(d)

A. a-adenine,b-thymine,c-adenylic acid,d-uridylic acid

B. a-adenine,b-uracil, c-adenosine,d-uridine

C. a-guanine,b-thymine, c-adenosine, d-uridine

D. a-adenine, b-cytosine, c-adenylic acid, d-uridylic acid

Answer: B



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11. A fatty acid has a carboxyl group attached to an R group. The number of carbon atoms in R group of a fatty acid may be

- A. 1 carbon to 19 carbons
- B. 2 carbons to 19 carbons
- C. 1 carbons to 20 carbons

D. 2 carbond to 20 carbons

Answer: A



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12. Match the column I and II , and choose the correct combination from the options given.

Column I		Column II	
a. Palmitic acid	K.	3	
b. Arachidonic acid	L.	4	
c. Cholesterol	M.	16	
d. Glycerol	N.	20	
e. Alanine	Q.	27	

A. a-M,b-N,c-Q,d-K,e-L

B. a-N,b-M,c-Q,d-L,e-K

C. a-M,b-N,c-Q,d-K,e-K

D. a-N,b-Q,c-M,d-L,e-L

Answer: C



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13. Read the following statement and find out the incorrect statement(s)

A. Palmitic acid is saturated while arachidonic acid is unsaturated fatty acid

B. Monoglycerides, diglycerides and triglycerides are lipids having both glycerol and fatty acids.

C. Saturated fatty acids have one or more C=C double bonds while unsaturated fatty acids are without double bonds.

D. Fats and oils are differentiated on the basis of melting point.

Answer: C



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14. Some tissues have lipids with more complex structures especially the

A. neural tissue

B. Connective tissues

C. Muscular tissues

D. Epithelial tissues

Answer: A



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15. Which of the following groups represent only primary metabolites?

A. Glucose, ribose, glycine, alanine, cholesterol

B. Lactin, serine, glycerol, palmitic acid, nucleotide

C. Adenosine, nucleosides, nitrogen bases, adenylic acid, triglyceride

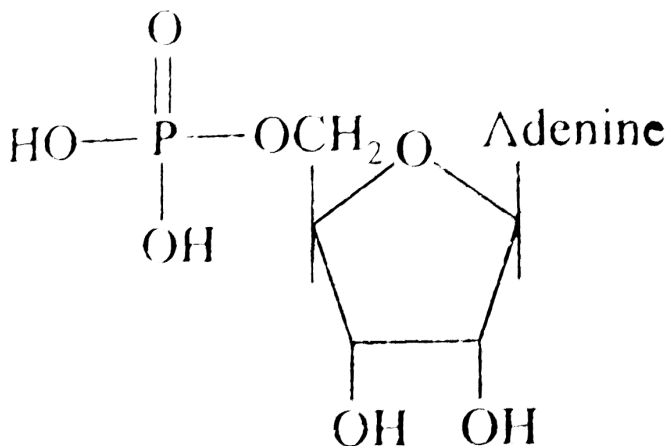
D. All of the above

Answer: D



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16. Recognise the figure and find out the correct statement.



- A. This compound is a nucleoside called adenosine
- B. This compound is a nucleoside called adenylic acid
- C. This compound is a nucleotide called adenosine
- D. This compound is a nucleotide called adenylic acid

Answer: D



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17. The compound having identifiable functions and play known roles in normal physiological processes are called

- A. Primary metabolites
- B. Secondary metabolites
- C. Biomacromolecules
- D. Polymeric substances

Answer: A



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18. Find the incorrect matching.

A. Essential oils-Lemon grass oil

B. Terpenoids- Monoterpenes, diterpenes

C. Polymeric substance- Rubber , gums, nucleotides

D. Pigment-Carotenoids, anthocyanins

Answer: C



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19. Read the following statement and find out the incorrect statement.

A. Secondary metabolites are found in plant, fungal

an microbial cells and we do not understand the

role of these secondary metabolites in host organisms.

B. Many secondary metabolites like rubber, drugs, spices, scents and pigments are useful to human welfare.

C. Some secondary metabolites have ecological significance.

D. Flavonoids, antibiotics, coloured pigments and lecithin are secondary metabolites.

Answer: D



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20. Which of the following feature(s) is common to all those compounds found in acid soluble pool or filtrate ?

A. They are called macromolecules or biomacromolecules.

B. The molecular weight is more than ten thousands Dalton or above.

C. They have molecular weight ranging from 18 to around 800 Da approximately.

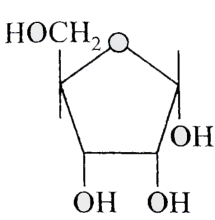
D. Both A and B

Answer: C

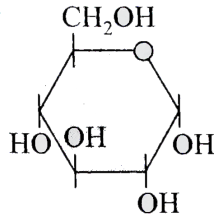


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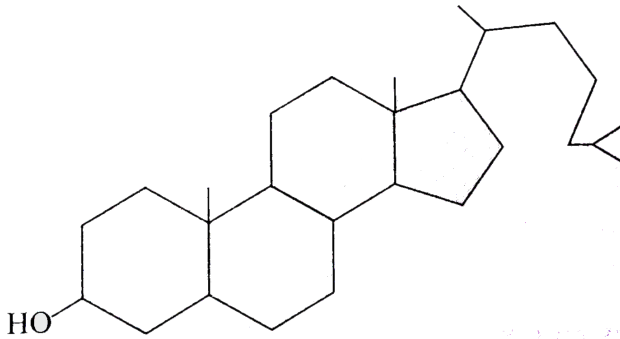
21. Recognise the figure and find out the correct matching



(a)



(b)



(c)

A. a-glucose,b-fructose,c-lecithin

B. a-fructose,b-glucose,c-glycerol

C. a-ribose,b-glucose,c-chloesterol

D. a-glucose,b-ribose,c-cholesterol

Answer: C



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22. Which is/are true about the macromolecules or biomacromolecules?

A. These are found in acid insoluble fraction or retentate.

B. With the exception of lipids these are polymeric substances.

C. They have molecular weight range of ten thousands daltons and above (exception is lipid whose molecular weight do not exceeds 800 Da)

D. All of the above

Answer: D



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23. Match the column I and II, and choose the correct combination from the option given

Column I (Component)	Column II (% of the total cellular mass)
a. Ions	i. 1
b. Lipids	ii. 2
c. Carbohydrates	iii. 3
d. Nucleic acids	iv. 5–7
e. Proteins	v. 10–15

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

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

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

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

Answer: A



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24. Molecules having charged groups of opposite polarity are

A. Zwitter ions

B. Anions

C. Cations

D. Negative ions

Answer: A



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25. Pick out lectin from those given below:

A. Gum

B. Diterpene

C. Concanavaline A

D. Curcumin

Answer: C



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26. $CH_3(CH_2)_{14}COOH$ is chemical formula of

A. Palmitic acid

B. Stearic acid

C. Glycerol

D. Galactose

Answer: A



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27. Select the wrong statement:

- A. Majority of enzymes contains a non-protein part called prosthetic group
- B. Thylakoids are arranged one above the other like stack of coins forming a granum.
- C. Building block of lipid are amino acids.

D. Crossing-over occurs at pachytene stage of meiosis I.

Answer: C

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28.
$$H_2N - \overset{\overset{H}{|}}{C} - COOH$$
 is general formula of amino acid. Here R stand for

acid. Here R stand for

A. An amino acid

B. A carboxylic group

C. A variable group

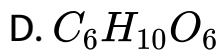
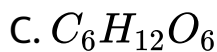
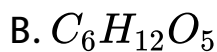
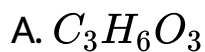
D. A hydroxyl group

Answer: C



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29. Which one is a glucose ?



Answer: C



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30. Which is not a pyrimidine?

A. Guanine

B. Thymine

C. Uracil

D. Cytosine

Answer: A



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31. Phospholipids are important cell membrane constituents because they

- A. contain, glycerol
- B. combine covalently with proteins
- C. contain polar and non-polar parts
- D. can form bilayers in water.

Answer: C



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32. Which of the following amino acids is not optically active

A. Glycine

B. Leucine

C. Isoleucine

D. Valine

Answer: A



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

A. Three

B. Four

C. Five

D. Six

Answer: B



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34. Which is not a macromolecule?

A. Cellulose

B. DNA

C. glycogen

D. Cholesterol

Answer: D



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35. Triglyceride consists of

- A. Three fatty acids + two glycerols
- B. Three fatty acids + one glycerol
- C. One fatty acid + one glycerol
- D. One fatty acid + three glycerols

Answer: B



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36. Most abundant component of cell is

A. Protein

B. Water

C. Cellulose

D. Lipid

Answer: B



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37. Differences in amino acids are due to their

A. Carboxyl group

B. Amino group

C. Peptide bond

D. R-Group

Answer: D



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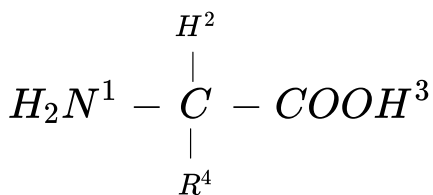
38. Adenine, pentose sugar and phosphate interact to form

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

Answer: B

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



A. 2 and 3

B. 1 and 4

C. 1 and 3

D. 2 and 4

Answer: C



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40. Phosphorus is a constituent of

A. Carbohydrate

B. Protein

C. Fat

D. Nucleotide

Answer: D



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

A. Water

B. Protein

C. Lipid

D. DNA

Answer: B



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Section A Topicwise Questions Topic 2 Proteins

1. Read the following statements and find out the incorrect statement.

A. Dietary proteins are the source of non-essential amino acids.

B. Non-essential amino acids are synthesised in our body.

C. A homopolymer has only one type of monomers repeating 'n' number of times.

D. Some proteins are enzymes, some are hormones, some transport nutrients across cell membrane.

Answer: A



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2. Taste receptor, smell receptor and hormone receptor are made up of

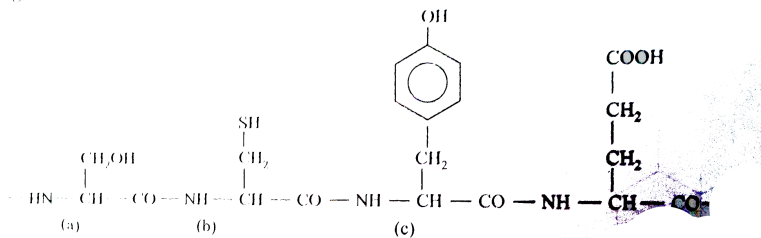
- A. Protein
- B. Carbohydrates
- C. Lipids
- D. Nucleic acids

Answer: A



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3. Recognise the figure and find out the correct matching .



- A. a-cysteine, d-tyrosine, c-glutamic acid, b-serine
- B. b-cysteine, c-tyrosine, d-glutamic acid, a-serine
- C. d-cysteine, a-tyrosine, b-glutamic acid, c-serine
- D. c-cysteine, b-tyrosine, a-glutamic acid, d-serine

Answer: B

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4. Which enables glucose transport into cells?

A. GLUT-1

B. GLUT-2

C. GLUT-3

D. GLUT-4

Answer: D



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5. Read the following statements and find out the incorrect statement(s)

- A. In proteins, only left handed helices are observed.
- B. 3° structure of protein is hollow woolen ball like.
- C. Adult human haemoglobin(Hb) consists of 4 subunits. Two subunits of α -type and two subunits of β -type
- D. All of the above

Answer: A

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6. A protein is imagined as a line, the left end is represented by first amino acid and the right end is

represented by the last amino acids. The first and last amino acids are called as

A. N-terminal amino acid and C-terminal amino acid, respectively

B. C-terminal amino acids and N-terminal amino acid, respectively

C. O-terminal amino acids and C-terminal amino acid, respectively

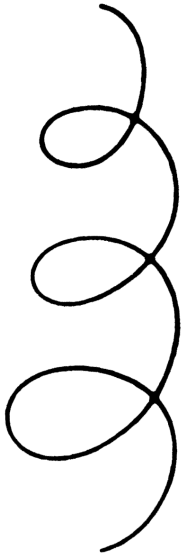
D. NH_2 -terminal amino acids and $COOH$ -terminal amino acid, respectively

Answer: A

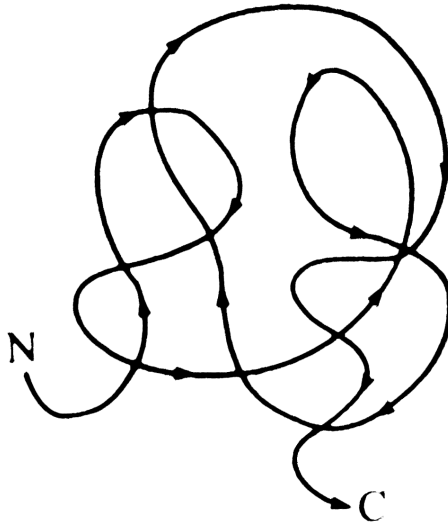


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7. Recognise the figure and find out the correct matching.



(a)



(b)

A. a-Primary structure

b-Secondary structure

B. a-Secondary structure

b-Primary structure

C. a-Secondary structure

b-Tertiary structure

D. a-Tertiary structure

b-Quaternary structure

Answer: C



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8. The 3-dimensional view of a protein is provided by

A. Primary structure

B. Secondary structure

C. Tertiary structure

D. Quaternary structure

Answer: C



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9. Which structure is absolutely necessary for the many biological activities of proteins?

A. Primary structure

B. Secondary structure

C. Tertiary structure

D. Quaternary structure

Answer: C



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10. Some proteins are an assembly of more than one polypeptide or subunits. The manner in which these individuals folded polypeptides are subunits are arranged with respect to each other is the achitecture of a protein otherwise called the

A. Primary structure

B. Secondary structure

C. Tertiary structure

D. Quaternary structure

Answer: D



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Section A Topicwise Questions Topic 3 Polysaccharide Nucleic Acids Bonding And Living State

1. Read the following statements and find out the incorrect statement.

A. Oils have lower melting point(e.g. gingely oil) and hence remain as oil in winters.

B. Adenosine, guanosine, cytosine, uridine and thymidine are nucleosides.

C. Adenylic acid, thymidylic acid, guanylic acid, uridylic acid and cytidylic acid are nucleotides.

D. Nucleic acids like DNA and RNA consists of nucleotides only.

Answer: B



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2. Inulin is a polymer of

A. Glucose

B. Fructose

C. Galactose

D. Sucrose

Answer: B



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3. Read the following statements and find out the incorrect statement.

A. Glycogen is a branched polymer of glucose

B. Cellulose does not contain complex helices and

hence cannot give Iodine test.

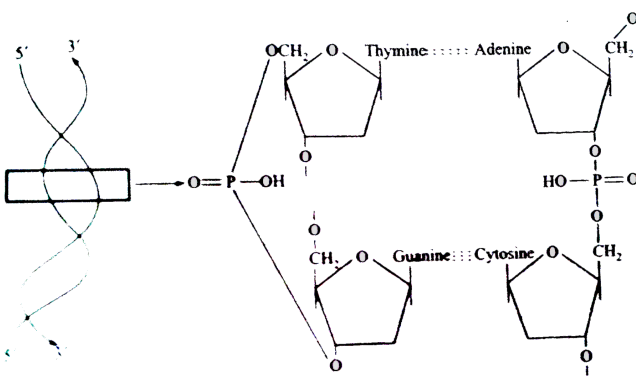
C. Paper made from plant pulp is cellulosic.

D. Chitin is heteropolymer.

Answer: D

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4. Recognise the figure and find out the correct statement .



- A. This figure shows the primary structure of DNA
- B. This figure shows the primary structure of RNA
- C. This figure shows the secondary structure of DNA
- D. This figure shows the tertiary structure of DNA.

Answer: C



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5. Heterocyclic ring is formed in

- A. Nitrogen bases
- B. Pentose sugar
- C. Lecithin

D. All of the above

Answer: A



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6. In a polysaccharide (like glycogen), the right end and left end are called

A. N-terminal amino acids and C-terminal amino acid, respectively

B. C-terminal amino acids and N-terminal amino acid, respectively

C. Reducing end and non-reducing end, respectively

D. Non-reducing end and reducing end, respectively

Answer: C



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7. The true macromolecule(s) of the cell is /are

A. Polysaccharides

B. Polypeptides

C. Polynucleotides

D. All of the above

Answer: D



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8. Read the following statements and find out the incorrect statement.

A. A nucleotide has three chemically distinct components. One is a heterocyclic compound, the second is a monosaccharide and the third is a phosphoric acid or phosphate.

B. For nucleic acid, the building block is a nucleotide.

C. The positional information in a protein is called the primary structure of a protein.

D. None of the above.

Answer: D



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9. Peptide bond is formed when the

A. Carboxyl group of one amino acid reacts with the carboxyl group of the next amino acid

B. Amino group of one amino acid reacts with the amino group of the next amino acids

C. Carboxyl group of one amino acids reacts with amino group of the next amino acids

D. Amino group of one amino acid react with
carboxyl group of the next amino acid

Answer: C



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10. Glycosidic bond is formed between

A. Carbon and oxygen atoms of two adjacent
monosaccharides

B. Carbon and hydrogen atoms of two adjacent
monosaccharides

C. Hydrogen and oxygen atoms of two adjacent monosaccharides

D. Two carbon atoms of two adjacent monosaccharides

Answer: D



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11. In a nucleic acid a phosphate moiety links the

A. 3'-carbon of the sugar of one nucleotide to the

5'-carbon of the sugar of the succeeding nucleotide

B. 5'-carbon of the sugar of one nucleotide to the 3'-carbon of the sugar of the succeeding nucleotide

C. 3'-carbon of the sugar of one nucleotide to the 5'-carbon of the sugar of the preceding nucleotide

D. Sugar on one hand and nitrogenous base on another hand

Answer: A



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12. The bond between the phosphate and hydroxyl group of sugar is called

- A. Glycosidic bond
- B. Phosphoanhydride bond
- C. Ester bond
- D. Peptide bond

Answer: C



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13. Which of the following bond formation is dehydration synthesis ?

- A. Peptide bond
- B. Glycosidic bond
- C. Phosphodiester bond
- D. All of the above

Answer: D



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14. The word famous Watson -Crick double helical model of B-DNA exhibits

- A. Secondary structure
- B. Tertiary structure

C. Quaternary structure

D. All of the above

Answer: A



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15. The backbone of the DNA is formed by

A. Sugar-base-sugar chain

B. Base-phosphate-sugar chain

C. Sugar-phosphate-sugar chain

D. Base-phosphate-base chain.

Answer: C



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16. Read the following statement and find out the incorrect statement .

- A. A and G of one strand compulsorily base pairs with C and T ,respectively on the other strand
- B. There are two hydrogen bonds between A and T and three hydrogen bonds between G and C.
- C. At each step of ascent the strand turns 36°
- D. The pitch of B-DNA is 3.4 nm

Answer: A



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17. In B-DNA, the rise per base pair would be

A. 0.34 nm

B. 3.4 nm

C. 34nm

D. 34Å

Answer: A



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18. Which of the following is an uncatalysed metabolic conversion in living system ?

A. CO_2 dissolving into water

B. Glucose converted in pyruvic acid

C. Glucose becomes lactic acid in our skeletal muscle

D. None of the above.

Answer: D



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19. When a simple structure form a more complex structure, for example, acetic acid becomes cholesterol is

called

- A. Anabolic pathway
- B. Catabolic pathway
- C. Biosynthetic pathway
- D. Both A and C

Answer: D



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20. When a more complex structure form a simple structure, for example, glucose becomes lactic acid in our skeletal muscle, is called

A. Amphibolic pathway

B. Anabolic pathway

C. Catabolic pathway

D. Both A and C

Answer: C



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21. Assembly of protein from amino acids is

A. Anabolic pathway

B. Catabolic pathway

C. Biosynthetic pathway

D. Both A and C

Answer: D



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22. Anabolic pathways....a..... energy and catabolic pathways.....b.... energy

A. a-consume, b-release

B. a-release, b-consume

C. a-consume, b-consume

D. a-release, b-release

Answer: A



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23. Energy currency of the cell is

A. AMP

B. ADP

C. ATP

D. All of the above

Answer: C



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

A. 4.0-5.0 mM

B. 4.5-5.5 mM

C. 5.0-5.5mM

D. 4.5-5.0 mM

Answer: D



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25. The living state is define as a/an

A. Non-equilibrium steady state to not be able to perform work

B. Equilibrium non-steady state to be able to perform

C. Non-equilibrium steady state to be able to perform work

D. Non-equilibrium non-steady state to be able to perform work

Answer: C



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26. The metabolic pathways from glucose to pyruvic acid is called glycolysis and occurs in

- A. 9 metabolic steps
- B. 10 metabolic steps
- C. 11 metabolic steps
- D. 12 metabolic steps.

Answer: B



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27. How do living organisms derive their energy ? How do they store this energy and in what form? How do

they convert this energy into work ? We study and understand all this under a sub-discipline called

- A. Biofortification
- B. Biomagnification
- C. Bioinformatics
- D. Bioenergetics

Answer: D



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28. Removal of CO_2 from amino acids make an amino acid into

A. Carboxylic acid

B. Amine

C. Carbylamine

D. Bioenergetics

Answer: B



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29. Milk sugar is

A. Fructose

B. Glucose

C. Lactose

D. Sucrose

Answer: C



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30. Formation of peptide and glycosidic bonds involves

A. Esterification

B. Hydration

C. Dehydration

D. Acidification

Answer: C



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31. Starch is a polymer of

A. Glucose

B. Fructose

C. Maltose

D. Sucrose

Answer: A



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32. A non-reducing table sugar is

A. Glucose

B. Sucrose

C. Galactose

D. Mannose

Answer: B



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33. Which of the following is not a disaccharide

A. Maltose

B. Sucrose

C. Lactose

D. Galactose

Answer: D



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34. In a protein, amino acids are linked by

- A. Peptide bond
- B. Glycosidic bond
- C. Hydrogen bonds
- D. All of the above

Answer: A



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35. Which of the following is not a disaccharide

A. Lactose

B. Sucrose

C. Maltose

D. Starch

Answer: D



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36. Which of the following is a polysaccharide ?

A. Fructose

B. Glucose

C. Sucrose

D. Cellulose

Answer: D



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37. The sugar present in *DNA* is :

A. Dextrose

B. Levulose

C. Glucose

D. Deoxyribose

Answer: D



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38. RNA contains :

A. Hexose sugar

B. Dextrose sugar

C. Ribose sugar

D. Deoxyribose sugar

Answer: C



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39. Nucleotide is composed of

- A. Sugar
- B. Phosphoric acid
- C. Nitrogenous base
- D. All of the above

Answer: D



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40. Starch and cellulose are

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

Answer: D



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41. In which of the following groups all are polysaccharides ?

- A. Glycogen, sucrose and maltose
- B. Sucrose, glucose and fructose

C. Maltose , lactose and fructose

D. Glycogen, cellulose and starch

Answer: D



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42. Which one yields protein on hydrolysis ?

A. Fatty acid

B. Nucleic acid

C. Amino acid

D. None of the above.

Answer: D



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43. Maximum amount of cellulose occurs in

A. Cotton

B. Coir

C. Hemp

D. Flax

Answer: A



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Section A Topicwise Questions Topic 4 Enzymes

1. Almost all enzymes are proteins. The enzymes have

A. 1° structure

B. 2° structure

C. 3° structure

D. All of the above

Answer: D



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2. In an enzyme, active sites/pockets/crevices are present on

- A. 1° structure
- B. 2° structure
- C. 3° structure
- D. All of the above

Answer: C



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3. Enzyme catalyse differ from inorganic catalysts as

- A. Inorganic catalysts work efficiently at high temperatures and high pressure, while enzymes get damaged at high temperatures (above $40^{\circ}C$)
- B. Enzyme increases the activation energy while inorganic catalyst decreases
- C. Enzymes are used up in a reaction while inorganic catalyst remain unchanged
- D. All of the above

Answer: A



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4. Thermal stability is an important quality of enzymes isolated from

- A. Acidophilic organisms
- B. Basophilic organisms
- C. Barophilic organisms
- D. Thermophilic organisms

Answer: D



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5. Which one of the following is /are a physical process ?

- A. Change in shape without breaking of bonds
- B. Change in state of matter (when ice melts into water, or when water becomes a vapour)
- C. Hydrolysis of starch into glucose
- D. Both A and B

Answer: D



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6. Hydrolysis of starch into glucose is a/an

- A. Physical process
- B. Inorganic chemical reaction

C. Organic chemical reaction

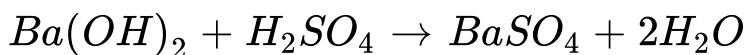
D. Both A and C

Answer: C



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7. The following reaction is a/an



A. Physical process

B. Inorganic chemical reaction

C. Organic chemical reaction

D. Both A and C

Answer: B



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8. Read the following statements and find out the incorrect statement.

A. Rate can also be called velocity if the direction is specified.

B. A general rule of thumb is that rate double or decrease by half for every $10^{\circ} C$ change in either direction.

C. Endothermic reactions are also called spontaneous reaction while an exothermic reaction is called energy requiring reaction.

D. Energy difference between substrate and transition state is called activation energy.

Answer: C



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9. If 'P' (product) is at a lower level than 'S' (substrate), the reaction is an

A. Exothermic reaction

B. Endothermic reaction

C. Spontaneous reaction

D. Both A and C

Answer: D



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10. The following reaction is catalysed by



A. Carboxypeptidase

B. Carbonic anhydrase

C. Carbonic dehydrogenase

D. Both A and B

Answer: B



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11. Carbonic anhydrase accelerate the rate of reaction by about

A. 200 times

B. 6,00,000 times

C. 10 million times

D. 10 billion times

Answer: C



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12. In absence of any enzymes this reaction ($CO_2 + H_2O \rightarrow H_2CO_3$) is very slow , with about

A. 6,00,000 molecules of H_2CO_3 formed in one second

B. 200 molcules of H_2CO_3 being formed in one second

C. 200 molecules of H_2CO_3 being formed in one minute

D. 200 molecules of H_2CO_3 being formed in one hour.

Answer: D



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13. By using the carbonic anhydrase enzyme the reaction ($CO_2 + H_2O \rightarrow H_2CO_3$) speeds dramatically with about

- A. 6,00,000 molecules being formed every hour
- B. 6,00,000 molecules being formed every second
- C. 36 million molecules being formed every minute

D. Both B and C

Answer: D



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14. The activity of an enzyme can be affected by a change in the condition which can alter the

- A. 1° structure of protein
- B. 2° structure of protein
- C. 3° structure of protein
- D. All of the above

Answer: C



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15. Which factor(s) affects the enzymatic activity ?

A. Temperature and pH

B. Change in substrate concentration

C. Binding of specific chemicals that regulates its
activity

D. All of the above

Answer: D



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16. Enzymes catalysing a transfer of a group, other than hydrogen is placed in group

A. Dehydrogenases

B. Hydrolases

C. Lyases

D. Transferases.

Answer: D



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

A. Dyhydrogenases

B. Hydrolases

C. Lyases

D. Transferases.

Answer: C



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

A. Ligases

B. Isomerases

C. Hydrolases

D. Transferases.

Answer: B



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19. Optimum temperature is the temperature at which and enzyme

- A. work at its best
- B. is not destroyed
- C. action is reversed
- D. is inactivated

Answer: A



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20. Which one is a cofactor of carbonic anhydrase ?

- A. Fe
- B. Zn
- C. Cu

D. Mg

Answer: B



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21. Arrange the steps of catalytic action of an enzyme in order and choose the right option

(A) The enzyme releases the products of the reaction and the enzyme is free to bind to another substrate

(B) The active site of enzyme is in close proximity of the substrate and breaks the chemical bonds of the substrate

(C) The binding of substrate induces the enzyme to alter its shape fitting more tightly around the substrate

(D) The substrate binds to the active site of the enzyme fitting into the active site

A. D,C,B,A

B. C,B,A,D

C. D,B,A,C

D. C,D,A,B

Answer: A



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22. Class of enzymes containing in lysosome

A. Lyases

B. Ligases

C. Hydrolases

D. Transferases.

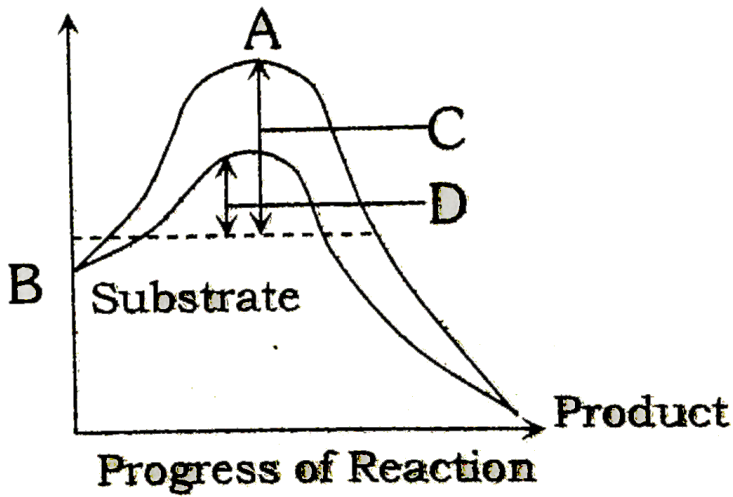
Answer: C



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23. 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-1,b-2,c-3,d-4

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

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

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

Answer: B



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24. Formation of a peptide bond involves

- A. Two amino acids
- B. Two monosaccharides
- C. A condensation reaction
- D. Both A and C

Answer: D



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25. Enzymes catalysing removal of group and formation of double bond are

A. Transferases

B. Ligases

C. Lyases

D. Oxidoreductases

Answer: C



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

A. Ligases

B. Isomerase

C. Oxidoreductases

D. Hydrolase

Answer: B



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27. Enzymes are basically or All enzymes contain

A. Nucleic acids

B. Protein

C. Fats

D. Vitamins

Answer: B



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28. A metal ion required for normal functioning of an enzymes is

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

Answer: C



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29. Non-protein part of enzyme is called

A. Prosthetic group

B. Active site

C. Cofactor

D. Catalytic agent

Answer: C



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30. NAD is

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

Answer: C



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31. Digestive enzymes are

- A. Hydrolases
- B. Transferases
- C. Oxidoreductases

D. Ligases

Answer: A



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

Or

Non-protein part of an enzyme is known as

A. Isoenzyme

B. Coenzyme

C. Apoenzyme

D. Holoenzyme

Answer: B



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33. Which enzyme shows greatest substrate specificity

A. Nuclease

B. Trypsin

C. Pepsin

D. Sucrase

Answer: D



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

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

Answer: A



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

- A. Product
- B. Molecular size
- C. K_m value
- D. Optimum value

Answer: C



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

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

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

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

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

Answer: B



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37. Which is incorrect about coenzyme?

A. Every enzyme is a cofactor and every cofactor is a coenzyme.

B. Every coenzyme is a cofactor but every cofactor is not a coenzyme

C. Most of the coenzymes are nucleotides and are composed of vitamins

D. Coenzymes are the active constituents of enzymes.

Answer: A



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38. Which is not a hydrolase?

A. Protease

B. Dehydrogenase

C. Sucrase

D. Amylase

Answer: B



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39. Which one is not a conenzyme ?

A. NAD^+

B. NADPH

C. FAD

D. ATP

Answer: D



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40. Ribozyme is

A. RNA with enzyme activity

B. RNA without sugar

C. RNA without phosphate

D. RNA with extra phosphate

Answer: A



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41. Enzyme required for joining two molecules is

A. Ligases

B. Lyase

C. Polymerase

D. Hydrolase

Answer: A



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42. Mathematical explanation for enzyme action on substrate was provide by

- A. van't Hoff
- B. Hans Krebs
- C. Michaelis and Menten
- D. Calvin

Answer: C



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43. K_m value is dependent upon

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

Answer: B



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44. Non-proteinaceous part of enzyme is

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

Answer: D



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45. Enzyme required for joining two molecules is

- A. Ligases
- B. Transferases
- C. Oxidoreductases

D. Lyases

Answer: A



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

A. Cofactor

B. Coenzyme

C. Prosthetic group

D. Activator

Answer: C



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47. One molecule of an enzyme is able to catalyse conversion of two molecules of substrate into products in 5 minutes. 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. Product only
- B. Products and enzymes molecules
- C. Products and 5 unreacted substrate molecules

D. Products,enzyme molecules and 5 molecules of substrate

Answer: B



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48. K_m value of enzyme is substrate concentration at

A. $1/4 V_{max}$

B. $2 V_{max}$

C. $1/2 V_{max}$

D. $4 V_{max}$

Answer: C



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49. Which is true about enzymes ?

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

Answer: A



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50. Enzymes enhance rate of reaction by

- A. Combining with product
- B. Forming reactant-product complex
- C. Changing equilibrium of reaction
- D. Lowering activation energy

Answer: D



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51. K_m value is related to

- A. Chromatography

B. ES complex

C. ABO complex

D. Morphometry

Answer: B



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Section B Assertion And Reason Question

1. Assertion : Amino acid are called α -amino acids

Reason : Amino acid are organic compound containing an amino group and a carboxyl group as substituents on the same carbon, i.e., the α -carbon.

- A. If both assertion and reason are true and the reason is the correct explanation of the assertion
- B. If both assertion and reason are true and the reason is not the correct explanation of the assertion
- C. If assertion is true but reason is false
- D. If both assertion and reason are false

Answer: A



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2. Assertion : The acid soluble pool represents roughly the cytoplasmic composition.

Reason : The macromolecules from cytoplasm and organelles become the acid insoluble fraction.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion

B. If both assertion and reason are true and the reason is not the correct explanation of the assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: B



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3. Assertion : Starch give Iodine test.

Reason : Starch can hold I_2 molecules in the helical portion.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion

B. If both assertion and reason are true and the reason is not the correct explanation of the assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: A



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4. Assertion : High temperature destroys enzymatic activity.

Reason : Protein are denatured by heat.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion

B. If both assertion and reason are true and the reason is not the correct explanation of the assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: A



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5. Assertion : With the increase in substrate concentration, the velocity of the enzymatic reaction rise at first. The reaction ultimately reaches a maximum velocity which is not exceeded by any further rise in

concentration of the substrate.

Reason : The enzyme molecules are fewer than substrate molecules and after saturation of these molecules, there are no free enzymes to bind with the additional substrate molecules.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion

B. If both assertion and reason are true and the reason is not the correct explanation of the assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: A



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6. Assertion : Competitive inhibitors are often used in the control of bacterial pathogens .

Reason : When the inhibitor closely resembles the enzyme in its molecular structure is knoww as competitive inhibitor.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion

B. If both assertion and reason are true and the reason is not the correct explanation of the

assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: C



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7. Assertion : Most of the enzymes have been classified into different groups based on the types of reactions they catalyse.

Reason : Enzymes are divided into 6 classes each with 4-13 subclasses and named accordingly by a six-digit number.

- A. If both assertion and reason are true and the reason is the correct explanation of the assertion
- B. If both assertion and reason are true and the reason is not the correct explanation of the assertion
- C. If assertion is true but reason is false
- D. If both assertion and reason are false

Answer: C



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8. Assertion : Cofactor play a crucial role in the catalytic activity of the enzymes.

Reason : Catalytic activity is lost when the co-factor is removed from the enzyme.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion

B. If both assertion and reason are true and the reason is not the correct explanation of the assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: A



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9. Assertion : The essential chemical components of many coenzymes are vitamins.

Reason: Coenzymes NAD and NADP contain the vitamin niacin.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion

B. If both assertion and reason are true and the reason is not the correct explanation of the assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: B



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10. Assertion: Catalase and peroxidase catalyse the breakdown of H_2O to H_2O_2 and O_2

Reason : Haem is the coenzyme and it is a part of the active site of the enzyme catalase and peroxidase.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion

B. If both assertion and reason are true and the reason is not the correct explanation of the assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: D



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11. Assertion : Co-enzymes serves as co-factors in a number of differen enzymes catalysed reaction.

Reason : Association of co-enzyme with the apoenzyme

is only transient, usually occurring during the course of catalysis.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion

B. If both assertion and reason are true and the reason is not the correct explanation of the assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: B



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Section C Previous Years Examination Questions Neet Aipmt Questions

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

A. S and Mg

B. Mg and Na

C. Ca and P

D. P and S

Answer: D



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2. An example of competitive inhibition of an enzyme is the inhibition of

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

Answer: A



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

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

Answer: C



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4. Cerebroside is

A. Glycolipid

B. Sterol

C. Phospholipid

D. Steroid

Answer: A



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5. According to induced fit theory of enzyme action

A. Substrate induces conformational change in

enzyme

B. Substrate changes its shape after binding

C. Conformational change takes place in substrate

D. There is no conformational change in enzyme

Answer: A



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6. Which is not a protein ?

A. Trypsin

B. Collagen

C. Rubisco

D. N-acetylglucosamine

Answer: D

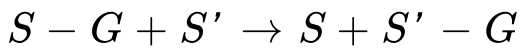


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7. Select the type of enzyme involved in the following reaction



A. Dehydrogenases

B. Transferases

C. Hydrolases

D. Lyase

Answer: B



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

(i) Catalase

(ii) Carboxypeptidase

(iii) Succinic dehydrogenase

(iv) Peroxidase

A. a and d

B. a only

C. a and b

D. b and c

Answer: A



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9. Select the incorrect statement.

A. Amino acids are substituted methanes.

B. Glycerol is trihydroxy propane

C. Lysine is neutral amino acids

D. Lecithin is phospholipid

Answer: C



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10. Select the incorrect statement.

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

Answer: A



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11. Which one is an amino acid

A. Renin

B. Pepsin

C. Cysteine

D. All of the above

Answer: C



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12. Which one is polysaccharide ?

A. Lactose

B. Glycogen

C. Sucrose

D. Maltose

Answer: B



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13. Structural lipids of cell membrane are

A. Simple lipid

B. chromolipid

C. Phospholipid

D. Steroid

Answer: C



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14. A typical homopolysaccharides is

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

Answer: A



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15. Ribose is a

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

Answer: A



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16. Which is not true about coenzyme and prothetic group ?

- A. Both are required for enzyme action
- B. Both are separated from enzyme
- C. Both are organic compounds
- D. Both are not polypeptides

Answer: B



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17. At isoelectric point, a protein has

- A. No net charge
- B. Negative charge
- C. Positive charge

D. Both B and C

Answer: A



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18. A linear polymeric biomolecules with reducing and non-reducing ends is

A. RNA

B. DNA

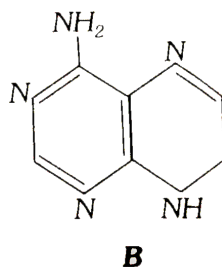
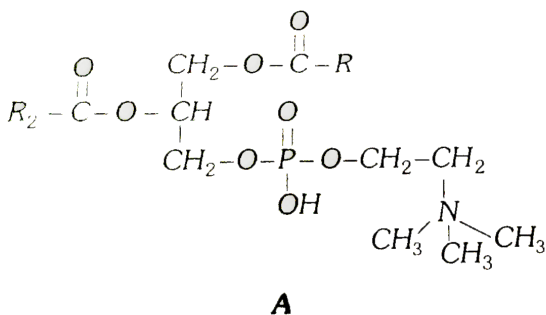
C. Amylose

D. Protein

Answer: C

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19. Which one of the following structural formulae of two organic compounds is correctly identified along with its related function



A. b-uracil a component of DNA

B. a-lecithin a component of cell membrane

C. b-adenine a nucleotide that makes up nucleic acid

D. a-triglycerides a major source of energy

Answer: B



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20. Polymer of sucrose is

A. Cellulose

B. Starch

C. glycogen

D. Fluka Ficoll

Answer: D



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21. Nicotin and cocaine are

A. Peptide

B. Tannins

C. Alkaloids

D. Resin

Answer: C



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22. Protein quality depends upon

- A. Essential amino acids
- B. Isoelectric point
- C. Coagulability
- D. Quaternary structure

Answer: A



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23. Prostaglandins are

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

D. Unsaturated fatty acids

Answer: D



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24. The curve given below show enzymatic activity with relation to three conditions (pH, temperature and substrate concentration)



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25. Major function of mineral magnesium is

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

Answer: D



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26. Steroids are

A. Lipids

B. Proteins

C. Vitamins

D. Carbohydrates

Answer: A



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

A. Glucose

B. Sucrose

C. Lactose

D. Maltose

Answer: A



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28. Apoenzyme is

A. Protein

B. Amino acid

C. Vitamins

D. AGU

Answer: A



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29. In a 100 g living tissue, the amount of water would be

A. 15-25 g

B. 25-30 g

C. 35-45 g

D. 70-90 g

Answer: D



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

A. K

B. Ca

C. Mg

D. Cu

Answer: D



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31. Cellulose is a homopolymer of

A. Fructose

B. Mannose

C. Galactose

D. Glucose

Answer: D



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32. Macromolecule chitin is

A. Sulphur containing polysaccharide

B. Phosphorous containing polysaccharide

C. Nitrogen containing polysaccharide

D. Simple polysaccharide

Answer: C



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33. Which is true about enzymes ?

A. Apoenzyme=Holoenzyme+Coenzyme

B. Holoenzyme= Apoenzyme+Coenzyme

C. Coenzyme=Apoenzyme+Holoenzyme

D. Holoenzyme=Coenzyme=Apoenzyme

Answer: B

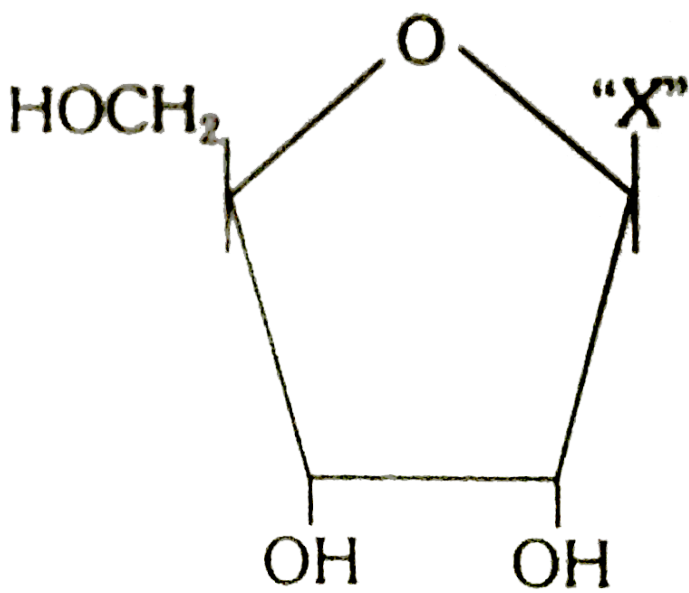


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34. Given below is the diagrammatic representation of one of the categories of small molecular weight organic compounds in the living tissues. Identify the category shown and the one blank component "X" in it



- | | Category | Component |
|-----|-------------|-----------------|
| (a) | cholesterol | Guanin |
| (b) | Amino acid | NH ₂ |
| (c) | Nucleotide | Adenine |
| (d) | Nucleoside | Uracil |

A. Cholesterol-Guanine

B. Amino acid-NH₂

C. Nucleotide-Adenine

D. Nucleoside-Uracil

Answer: D



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

A. Trypsin

B. Haemoglobin

C. Collagen

D. Insulin

Answer: C



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

?

A	B	C	D
$\begin{array}{c} \text{NH}_2 \\ \\ \text{H}-\text{C}-\text{COOH} \\ \\ \text{CH}_2 \\ \\ \text{CH}_2 \\ \\ \text{C} \\ // \quad \backslash \\ \text{O} \quad \text{OH} \end{array}$	$\begin{array}{c} \text{NH}_2 \\ \\ \text{H}-\text{C}-\text{COOH} \\ \\ \text{CH}_2 \\ \\ \text{OH} \end{array}$	$\begin{array}{c} \text{CH}_2\text{OH} \\ \\ \text{CH}_2 \\ \\ \text{CH}_2 \\ \\ \text{NH}_2 \end{array}$	$\begin{array}{c} \text{NH}_2 \\ \\ \text{H}-\text{C}-\text{COOH} \\ \\ \text{CH}_2 \\ \\ \text{CH}_2 \\ \\ \text{CH}_2 \\ \\ \text{CH}_2 \\ \\ \text{NH}_2 \end{array}$

A. a

B. b

C. c

D. d

Answer: D



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37. Which one of the following is not true for enzymes

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

Answer: B



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38. Identify the polysaccharide with β -glycosidic bonds

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

Answer: D



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39. Storage protein that coagulated on heating but remains soluble in dilute solution is

A. Globulin

B. Albumin

C. Histone

D. Collagen

Answer: B



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40. Insulin is a/an

A. Lipid

B. Carbohydrate

C. Protein

D. Nucleic acid

Answer: C



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

A. Saturated

B. Branched

C. unsaturated

D. Cyclic

Answer: C



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42. Thermolabile protein part of enzyme is

- A. Apoenzyme
- B. Proenzyme
- C. Holoenzyme
- D. Isoenzyme

Answer: A



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43. Which is used for staining lipids ?

- A. Rhodamine
- B. Iodine
- C. Ethidium bromide
- D. Sudan Red

Answer: D



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44. Which biomolecule is correctly characterized ?

A. Lecithin-Phosphorylated glyceride found in cell membrane

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

C. Adenylic acid - Adenosine with glucose phosphate molecule

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

Answer: A



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45. Inhibition of acetylcholine by DEP (Diisopropyl fluorophosphate) is an example of

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

Answer: C



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46. Nitrogen base + Pentose sugar + Phosphate group
is

A. Nucleoside

B. Nucleic acid

C. Pyrimidine

D. Nucleotide

Answer: D



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47. Which of the following fatty acids is liquid at room temperature

A. Palmitic acid

B. Stearic acid

C. Arachidic acid

D. Linoleic acid

Answer: D



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48. Chief energy food of cell is

A. Nucleotides

B. Proteins

C. Carbohydrates

D. Vacuoles

Answer: C



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49. Choose the correct combination

a. Fatty acid	1. Glutamic acid
b. Phospholipid	2. Tryptophan
c. Aromatic amino acid	3. Lecithin
d. Acidic amino acid	4. Palmitic acid

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

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

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

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

Answer: B



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50. Which secondary metabolite is a drug?

A. Vinblastine

B. Abrin

C. Ricin

D. Carotenoids

Answer: A



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51. Choose the correct combination

1. Carbohydrate
2. Protein
3. Nucleic acid
4. Lipid

- a. Trypsin
- b. Cholesterol
- c. Inulin
- d. Adenylic acid

- (A) 1—c, 2—a, 3—d, 4—b
(B) 1—b, 2—c, 3—d, 4—a
(C) 1—c, 2—d, 3—a, 4—b
(D) 1—d, 2—a, 3—b, 4—c

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

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

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

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

Answer: A



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52. Which is a structural polysaccharide ?

A. Glycogen

B. Chitin

C. Keratin

D. Pectin

Answer: B



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53. Reducing sugar is

A. Glycogen

B. Sucrose

C. Lactose

D. All of the above

Answer: C



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

A. Polysaccharides

B. RNAs

C. Fatty acids

D. None of the above.

Answer: B



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55. Which is a homopolysaccharides ?

A. Pectin

B. Heparin

C. Hyaluronic acid

D. Insulin

Answer: D



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56. match the columns correctly.

Column I		Column II
<i>a</i> Alkaloids	<i>i</i>	Carotenoids, Anthocyanin
<i>b</i> Pigments	<i>ii</i>	Vinblastin, Curcumin
<i>c</i> Drugs	<i>iii</i>	Morphine, Cocaine

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

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

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

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

Answer: C



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

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

Answer: C



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58. The essential chemical components of many coenzymes are

A. Carbohydrate

B. Vitamins

C. Proteins

D. Nucleic Acids

Answer: B



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59. Macromolecule chitin is

A. Sulphur containing polysaccharide

B. Simple polysaccharide

C. Nitrogen containing polysaccharide

D. Phosphorous containing polysaccharide

Answer: C



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60. A phosphoglyceride is always made up of

- A. A saturated or unsaturated fatty acid esterified to a glycerol molecules to which a phosphate group is also attached
- B. A saturated or unsaturated fatty acid esterified ot a phosphate group to which is also attached to a glycerol molecule

C. Only a saturated fatty acid esterified to a 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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61. 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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62. Three of the following statements about enzymes are correct and one is wrong. Which one is wrong

A. Enzyme are denatured at high temperatures

B. Enzymes are mostly proteins but some are lipids
also

C. Enzymes are highly specific

D. Enzymes required optimum pH and temperature
for maximum activity.

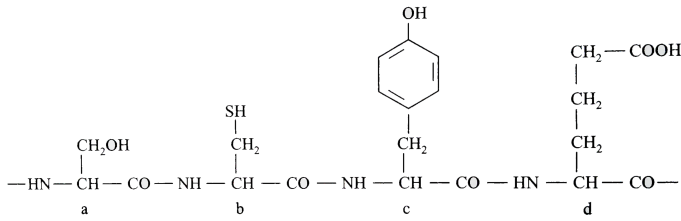
Answer: B



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63. The figure shows a tetrapeptide hypothetical portion of a protein with parts labeled a-d. Which one

of the following option is correct ?



A. d is the acidic amino acid - glutamic acid

B. c is an aromatic amino acid- tyrosine

C. a is the C-terminal amino acid and d is N-terminal amino acid

D. b is a sulphur containing amino acid methionine

Answer: B



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64. Amino acid alanine is

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

Answer: A



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

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

Answer: A

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66. Which of the following statement is not correct ?

- A. Starch is a polymer of α -glucose
- B. Starch is made up of amylose and amylopectin.

C. Amylose is a linear structure consisting of several glucose residues joined by 1, 4-glycosidic linkages.

D. Amylopectin is a straight chain with several glucose residues joined by 1, 4-glycosidic linkages.

Answer: D

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67. In a polysaccharide, the individual monosaccharides are linked by a

A. Glycosidic bond

B. Phosphodiester bonds

C. Peptide bond

D. Hydrogen bonds

Answer: A



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68. Sucrose is made up of

A. Glucose-galactose

B. Glucose-fructose

C. Glucose-glucose

D. Fructose-fructose

Answer: B



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69. From the following groups, I select the one which has only secondary metabolites.

A. Abrin, cellulose, arginine, tyrosine

B. Glycine, gums, serine, diterpenes

C. Carotenoids, phenylalanine, curcumin, rubber

D. Concanavalin-A, morphine, codeine, vinblastine

Answer: D



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70. Which of the following carbohydrates is considered non-reducing in acidic medium ?

A. Maltose

B. Sucrose

C. Lactose

D. Fructose

Answer: B



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71. Nitrogen is an important component of

A. Proteins

B. Vitamins

C. Fats

D. Starch

Answer: A



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72. In protoplasm, content of water is

A. 25 %

B. 85 %

C. 50 %

D. 30 %

Answer: B



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73. Two rings are present in

A. Guanine

B. Cytosine

C. Adenine

D. Both A and C

Answer: D



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74. Which of the following is not a macromolecule?

A. Protein

B. Lipid

C. Nucleic acid

D. polysaccharide

Answer: B



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75. Double helical model of DNA molecule was proposed by :

- A. Watson and Crick
- B. Knoll and Ruska
- C. Maselson and Sthal
- D. Emil Fischer

Answer: A



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76. Which one given below is a non – reducing sugar ?

A. Ribose 5-phosphate

B. Maltose

C. Sucrose

D. Lactose

Answer: C



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

A. Malonate is a competitive inhibitor of succinic dehydrogenase.

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

Answer: C

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78. Two glucose molecules are joined together by

- A. Peptide bond
- B. Glycosidic bond

C. Hydrogen bond

D. 3',5'-phosphodiester bond

Answer: B



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79. Which of the following polymers of glucose is stored by animals?

A. Starch

B. Inulin

C. Glycogen

D. Sucrose

Answer: C



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80. Which type of bond is found in amino acid cysteine ?

- A. Dipeptide bond
- B. Ester bond
- C. Ether bond
- D. Disulphide bond

Answer: D



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81. Feedback inhibition of an enzyme is influenced by

A. Substrate accumulation

B. Structural similarity between substrate and inhibitor

C. End product

D. any of the above

Answer: C



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82. Which enzyme have activator Zn ?

A. Alcohol dehydrogenase

B. Catalase

C. Nitrogenase

D. Nitrate reductase

Answer: A



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

A. Malonate is a competitive inhibitor of succinic dehydrogenase.

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

Answer: C



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84. Which one of the following statement is incorrect ?

- A. The competitive inhibitor does not effect the rate of breakdown of the enzyme-substrate complex.

- B. The presence of the competitive inhibitor decrease the K_m of the enzyme for the substrate.
- C. A competitive inhibitor reacts reversibly with the enzyme to form an enzyme-inhibitor complex.
- D. In competitive inhibition, the inhibitor molecular is not chemically changed by the enzyme.

Answer: B



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85. Which one of the following is not protein?

A. Actin

B. Albumin

C. Haematin

D. Myosin

Answer: C



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86. The amino acid, phenylalanine is poorly soluble in water because its side chain or R group is

A. Hydrophilic

B. Heterocyclic chain

C. Aromatic and non-polar

D. Aromatic and polar

Answer: C



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87. The quaternary structure can be formed by only a

A. Protein made up of a single polypeptide

B. Protein made up of a minimum of two polypeptide

C. Protein made up of a minimum of four polypeptides

D. Glycoprotein

Answer: B



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88. Tryptophan and proline are

- A. Amino acids
- B. Fatty acids
- C. Proteins
- D. polysaccharide

Answer: A



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89. Lecithin is a

- A. Sulphur containing lipid present in cytoplasm
- B. Phospholipid found in cell membrane
- C. Diglyceride containing two phosphate groups
- D. Steroid found in cell membranes

Answer: B



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90. Chitin is chemically a polymer of or The chitinous exoskeleton of arthropods is formed by the polymerisation of

A. D-glucosamine

B. N-acetyl glucosamine

C. Lipoglycans

D. Keratin sulphate and chondroitin sulphate

Answer: B



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

A. Guanine

B. Thymine

C. Uracil

D. Cytosine

Answer: A



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92. The cofactor for the enzyme carboxypeptidase is

A. Copper

B. Iron

C. Zinc

D. Manganese

Answer: C



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93. Which one of the following is a disaccharide?

A. Maltose

B. Ribose

C. Glucose

D. Fructose

Answer: A



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94. Which of the following is the earliest discovered amino acid ?

A. Glycine

B. Methionine

C. Phenylalanine

D. Asparagine

Answer: D



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95. Which of the following is a coenzyme?

A. Fe^{++}

B. Mucus

C. NAD^+

D. Lyase

Answer: C



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96. Which of the following is not an oligosaccharide ?

A. Inulin

B. Maltose

C. Sucrose

D. Raffinose

Answer: A



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97. First enzyme to be isolated in pure crystalline form was

A. Zymase

B. Urease

C. Invertase

D. Diastase

Answer: B



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98. Which one of the following is a disaccharide?

A. Maltose

B. Ribose

C. Glucose

D. Fructose

Answer: A



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99. Which of the following is the simplest amino acid

A. Glycine

B. Methionine

C. Phenylalanine

D. Asparagine

Answer: A



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100. Which of the following is not an oligosaccharide ?

A. Chitin

B. Maltose

C. Sucrose

D. Lactose

Answer: A



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101. Alcoholic fermentation is due to

A. Zymase

B. Urease

C. Invertase

D. Diastase

Answer: A



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102. In bryophytes and and pteridophytes, transport of male gametes requires

- A. Wind
- B. Insect
- C. Birds
- D. Water

Answer: D



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103. A triglyceride molecule has or A typical fat molecule is made up of

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

Answer: B



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104. The amino acid tryptophan is the precursor for the synthesis of

- A. Melatonin and Serotonin
- B. Thyroxine and Triiodothyronine
- C. Esterogen and Progesterone
- D. Cortisol and Cortisone

Answer: A



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105. A non-proteinaceous enzyme is

- A. Ligases

B. Deoxyribonuclease

C. Lysozyme

D. Ribozyme

Answer: D



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106. Which of the following biomolecules is common to respiration-mediated breakdown of fats, carbohydrates and proteins

A. Pyruvic acid

B. Acetyl CoA

C. Glucose-6-phosphate

D. Fructose 1, 6- biphosphate

Answer: B



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107. A few drops of sap were collected by cutting across a plant stem by a suitable method. The sap was tested chemically. Which one of the following test results indicates that it is phloem sap ?

A. Low refractive index

B. Absence of sugar

C. Acidic

D. Alkaline

Answer: D



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108. You are given a tissue with its potential for differentiation in an artificial culture .Which of the following pairs of hormones would you add to the medum to securre shoots as well as roots

A. Auxin and abscisic acid

B. Gibberellin and abscisic acid

C. IAA and gibberellin

D. Auxin and Cytokinin

Answer: D



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

A. Hydrophobic interaction

B. Ester bond

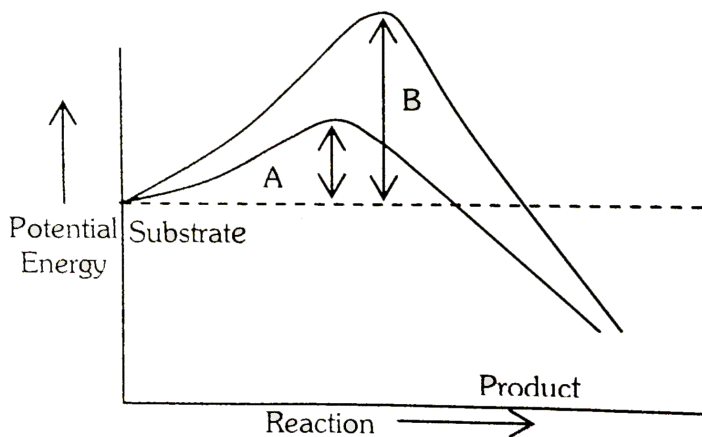
C. Hydrogen bond

D. Electrostatic interaction

Answer: B

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110. Which of the following describes the given graph correctly



- A. Endothermic reaction with energy A in absence of enzyme and B in presence of enzyme
- B. Exothermic reaction with energy A in absence of enzyme and B in presence of enzyme
- C. Endothermic reaction with energy A in presence of enzyme and B in absence of enzyme
- D. Exothermic reaction with energy A in presence of enzyme and B in absence of enzyme

Answer: D



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111. Match the stages of meiosis in Column I to their characteristic features in Column II and select the correct option using the codes given below

Column-I	Column-II
Pachytene	(i) Pairing of homologous chromosomes
Metaphase I	(ii) Terminalization of chiasmata
Diakinesis	(iii) Crossing-over takes place
Zygotene	(iv) Chromosomes align at equatorial plate

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

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

C. $a - iii, b - iv, c - ii, d - i$

D. $a - i, b - iv, c - ii, d - iii$

Answer: C



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112. Name the ion responsible for masking active sites for myosin for cross-bridge activity during muscle contraction

A. Sodium

B. Potassium

C. Calcium

D. Manesium

Answer: C



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113. Serum differs from blood in

- A. Lacking clotting factors
- B. Lacking antibodies
- C. Lacking globulins
- D. Lacking albumins

Answer: A



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

A. Holoenzyme=Apoenzyme+Coenzyme

B. Coenzyme=Apoenzyme+Holoenzyme

C. Holoenzyme=Coenzyme+ Co-factor

D. Apoenzyme=Coenzyme+Co-factor+Coenzyme

Answer: B



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115. Which of the following are not polymeric

A. Proteins

B. Polysaccharides

C. Lipids

D. Nucleic acids

Answer: C



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116. The two functional groups characteristic of sugars are

- A. hydroxyl and methyl
- B. carbonyl and methyl
- C. carboxyl and phosphate
- D. carbonyl and hydroxyl

Answer: D



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Section C Previous Years Examination Questions Aims Question

1. The vitamin nicotinamide can be synthesized in our body from

- A. tryptophan
- B. tyrosine
- C. valine
- D. alanine

Answer: A



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2. Protein are

A. Polysaccharides

B. polyamides

C. Polynucleotides

D. polyglycol

Answer: B



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3. Which of the following gives Fehling's test ?

A. Pectin

B. Sucrose

C. Cullulose

D. Glucose

Answer: D



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4. An example of competitive inhibition of an enzyme is the inhibition of

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

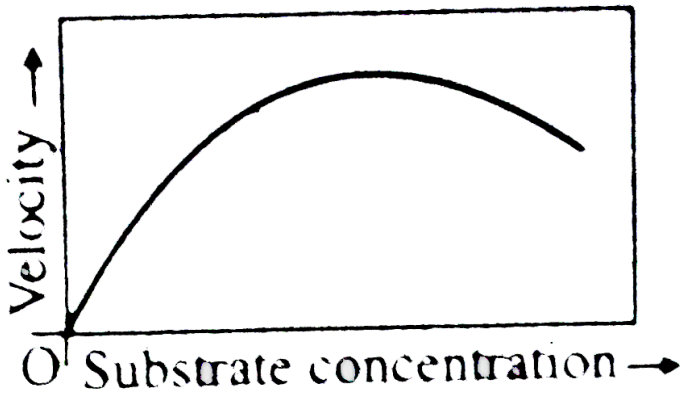
Answer: A



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5. The given graph shows the effect of substrate concentration on the rate of reaction of the enzymes green gram-phosphatase. What does the graph indicate

?



- 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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6. In which one of the following sets of three items each belong to the category mentioned against them ?

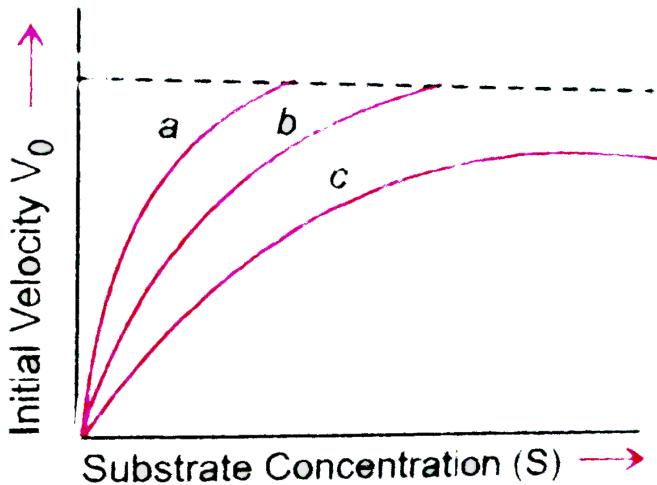
- A. Lysine, glycine, thiamine-Amino acid
- B. Myosin, oxytocin and gastrin- Hormones
- C. Rennin, helicase and hyaluronidase-Enzyme
- D. Optic nerve, oculomotor, vagus-Sensory nerves

Answer: C



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7. Figure given below shows three velocity-substrate concentration curves for an enzyme reaction. What do the curves for an enzyme reaction. What do the curves depict



A. a- normal enzyme reaction

b- competitive inhibition

c- non-competitive inhibition

B. a-enzyme with an allosteric modulator-added

b-normal enzyme acitivity

c- competitive inhibition

C. a-enzyme with an allosteric stimulator

b- competitve inhibitor added

c- normal enzyme reaction

D. a-normal enzyme reaction

b-non-competitive inhibitor added

c- allosteric inhibitor added

Answer: A



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8. Which of the following contain β -1,4 linkage ?

A. Maltose

B. Sucrose

C. Lactose

D. Fructose

Answer: C



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9. Which statement is true?

A. Adenine has 4 nitrogen atoms.

B. Cytosine has 3 nitrogen atoms.

C. Guanosine has 3 nitrogen atoms.

D. Uracil has 5 nitrogen atoms.

Answer: B



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10. Michaelis constant K_m is equal to

A. $\frac{K_1}{K_2 - K_3}$

B. $\frac{K_1 + K_2}{K_1}$

C. $\frac{K_2 - K_3}{K_1}$

D. $\frac{K_1 - K_2}{K_3}$

Answer: B



View Text Solution

11. Alpha-keratin is a protein, present in

A. blood

B. skin

C. lymph

D. eggs

Answer: B



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12. Essential oils are those which

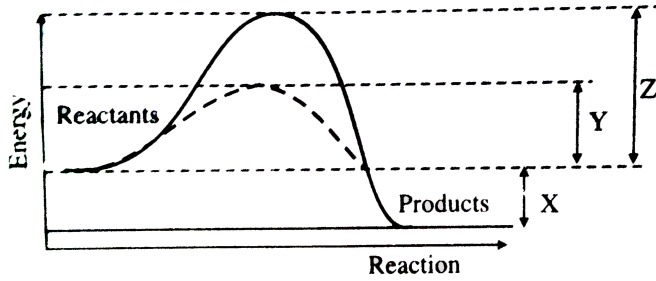
- A. are essential to the plant itself
- B. are used as lubricants
- C. produce perfumes
- D. are essential for human beings

Answer: A



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13. The diagram illustrates energy changes in an enzyme controlled reaction.



A. X

B. Y

C. Z

D. Z-Y

Answer: D



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14. K_m value of enzyme is substrate concentration at

A. zero

B. $2V_{\max}$

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

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

Answer: C



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15. Which enzyme helps in transfer of phosphate group from ATP to a carbohydrate

A. Phosphatase

B. ATPase

C. Phosphorylase

D. Catalase

Answer: C

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16. Match the column I and with Column II and select the correct option from codes give below

Column I

- A. Pigments
- B. Toxins
- C. Alkaloids
- D. Lectins

Column II

- (i) Abrin, ricin
- (ii) Concanavalin A
- (iii) Carotenoids
- (iv) Morphine, codeine

A. A-(iv),B-(iii),C-(i),D-(ii)

B. A-(ii),B-(iv),C-(i),D-(iii)

C. A-(iii),B-(i),C-(iv),D-(ii)

D. A-(i),B-(ii),C-(iii),D-(iv)

Answer: C



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17. Cholesterol is a precursor for each of the following except

A. bile salts

B. vitamin D

C. insulin

D. steroids.

Answer: C



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18. Which one of the following is an incorrect combinations ?

A. Adenine, thymine, cytidine

B. Adenine, cytosin, thymine

C. Guanine,thymine,uracil

D. Cytosine,uracil,guanine

Answer: A



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19. Match the following :

Column I	Column II
(i) Alkaloid	(I) Vinblastin, curcumin
(ii) Essential oils	(II) Morphine, Codein
(iii) Toxins	(III) Lemon, Grass oil
(iv) Drugs	(IV) Abrin, Ricin

A. (i)-(II),(ii)-(III),(iii)-(IV),(iv)-(I)

B. (i)-(III),(ii)-(II),(iii)-(IV),(iv)-(I)

C. (i)-(II),(ii)-(III),(iii)-(I),(iv)-(IV)

D. (i)-(III),(ii)-(II),(iii)-(IV)

Answer: A



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20. Glycoprotein contains

A. More than 200 amino acids and carbohydrates as its side chain

B. More than 20 amino acids and carbohydrates as its side chain

C. More than 200 amino acids and steroids as its side chain

D. More than 20 amino acids and steroids as its side chain

Answer: A



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Section C Previous Years Examination Questions Assertion And Reason Type Questions

1. Assertion (A) : Vegetable oils are fats which are present in plant cells in soluble form.

Reason (R) : Vegetable oils occur only in cells of embryo.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion

B. If both assertion and reason are true and the reason is not the correct explanation of the

assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: D



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2. Assertion : Human diet should compulsorily contain glycine, serine and tyrosine.

Reason: Essential amino acids cannot be synthesized in the human body.

- A. If both assertion and reason are true and the reason is the correct explanation of the assertion
- B. If both assertion and reason are true and the reason is not the correct explanation of the assertion
- C. If assertion is true but reason is false
- D. If both assertion and reason are false

Answer: D



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3. Assertion : Unsaturated fats are more reactive as compared with the saturated fats.

Reason : Unsaturated fats have only single bonds in their structure.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion

B. If both assertion and reason are true and the reason is not the correct explanation of the assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: C

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

Assertion: The amino acid glycine comes under the category of nonessential amino acids.

Reason : This due to the fact that it can not be synthesised in the body.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion

B. If both assertion and reason are true and the reason is not the correct explanation of the assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: C



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5. Assertion : Allosteric enzymes show feed back inhibition.

Reason : The inhibition is competitive.

- A. If both assertion and reason are true and the reason is the correct explanation of the assertion
- B. If both assertion and reason are true and the reason is not the correct explanation of the assertion
- C. If assertion is true but reason is false
- D. If both assertion and reason are false

Answer: C



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6. Assertion : Coenzymes serve as co-factors in a number of different enzyme catalyzed reactions.

Reason : Coenzymes and prosthetic groups are cofactors.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion

B. If both assertion and reason are true and the reason is not the correct explanation of the assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: B



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7. Assertion : Enzymes lower the activation energy.

Reason : A substrate molecule can be acted upon by a particular enzyme.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion

B. If both assertion and reason are true and the reason is not the correct explanation of the assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false

Answer: B



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8. Assertion : Secondary metabolites are produced in small quantities and their extraction from the plant is difficult and expensive.

Reason : Secondary metabolites can be commercially produced by using tissue culture technique.

- A. If both assertion and reason are true and the reason is the correct explanation of the assertion
- B. If both assertion and reason are true and the reason is not the correct explanation of the assertion
- C. If assertion is true but reason is false
- D. If both assertion and reason are false

Answer: B



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1. A basic amino acid is

A. Leucine

B. Methionine

C. Aspartic acid

D. Lysine

Answer: D



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2. Coenzyme is

A. Often a vitamin

B. Always an inorganic compound

C. Always a protein

D. Often a metal

Answer: A



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3. Which enzyme is concerned with transfer of electrons?

A. Desmolase

B. Hydrolases

C. Dehydrogenase

D. Transaminase

Answer: C



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4. A coenzyme is

- A. Organic non-proteinaceous group that is essential for enzyme activity
- B. Organic or inorganic group that is essential for enzyme activity
- C. Same enzyme found in different organs or tissues
- D. One that shares function o another enzyme

Answer: A



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5. The inhibitor which closely resembles the substrate in its molecular structure and inhibits the enzyme activity by biniding to the active site of the enzyme is called

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

Answer: C



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6. Number of oxygen atoms in lipid molecules is always as compared to number of carbon atoms.

- A. Less
- B. More
- C. Equal
- D. Double

Answer: A



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7. Number of amino acids present in protoplasm are

A. 20

B. 12

C. 10

D. 8

Answer: A



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8. Which ones would be component of proteins ?

A. CHOP

B. CHO

C. CHON

D. CONS

Answer: C



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9. Quaternary structure is present in

A. Histone

B. Haemoglobin

C. Globulin

D. Potassium

Answer: B



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10. Which of the following is a reducing sugar

A. Galactose

B. Gluconic acid

C. Sucrose

D. β -methyl galactoside

Answer: A



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11. Lipids are insoluble in water, because lipid molecules are

A. Hydrophilic

B. Hydrophobic

C. Zwitter ions

D. Neutral

Answer: B



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12. Pentoses and hexoses are the most common

Or

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

- A. Oligosaccharides
- B. Disachharides
- C. Monosaccharides
- D. polysaccharide

Answer: C



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13. Macromolecule most common in plant cell walls is

- A. Protein

B. Starch

C. Chlorophyll

D. Cellulose

Answer: D



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14. Chitin is polymer of

A. N-acetyl muramic acid

B. N- acetyl gluconic acid

C. N-acetyl glucosamine

D. None of the above.

Answer: C



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15. A disaccharide that gives two molecules of glucose on hydrolysis is

A. Sucrose

B. Maltose

C. Lactose

D. Both B and C

Answer: B



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16. Which of the following is a purine ?

A. Cytosine

B. Guanine

C. Thymine

D. Uracil

Answer: B



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17. Most abundant enzymes is

A. Catalase

B. Rubisco

C. Nitrogenase

D. Invertase

Answer: B



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18. Amino acids not synthesized in the body are called

A. Non-essential

B. Deaminated

C. Aminated

D. Essential

Answer: D



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19. Prosthetic group of a glycoprotein consist of

A. Lipids

B. Nucleic acid

C. Metal ions

D. Carbohydrates

Answer: D



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20. Essential : non-essential amino acid is

- A. Lysine-leucine
- B. Valine-tyrosine
- C. Methionine-threonine
- D. Alanine-cysteine.

Answer: B



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21. Find out the wrongly matched pair

A. Primary metabolite-Ribose

B. Secondary metabolite-Anthocyanine

C. Protein-Insulin

D. Cellulose-Heteropolymer

Answer: D



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22. Match the columns and choose the correct combination.

Column I**Column II**

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

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

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

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

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

Answer: B



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23. The lock and key principle is related to

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

Answer: B



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24. "All enzymes are proteins", this statement is now modified because of exception to this

- A. Arylsulphatase
- B. Ribozymes

C. Nitroreductase

D. Dehydrogenase

Answer: B



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25. Which is not a protein ?

A. α -amylase

B. Nitrogenase

C. Histidine Kinase

D. Ribozyme

Answer: D



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26. An essential fatty acids is

A. Palmitic acid

B. Arachidonic acid

C. Stearic acid

D. Arachidic acid

Answer: B



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27. Holoenzyme is produced by

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

Answer: A



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

" " Or

In the muscles carbohydrates are stored in the form of

- A. Fat
- B. Protein
- C. Glycogen
- D. Glucose

Answer: C



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29. Which one of the following is wrongly matched

- A. Fungi-Chitin

B. Phospholipid - Plasma membrane

C. Enzyme- Lipopolysaccharide

D. ATP- Nucleotide derivative

Answer: C



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30. Ribose sugar is not a component of

A. AMP

B. ATP

C. DNA

D. RNA

Answer: C



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31. Inuline occurs in the roots of

A. Mango

B. Dahlia

C. Wheat

D. Sugarcane

Answer: B



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32. The protein part of enzyme is

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

Answer: B



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33. A saturated fatty acid is

- A. Arachidonic acid

B. Stearic acid

C. Oleic acid

D. Linoleic acid

Answer: B



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34. Which is mismatched ?

A. Agar -Polymer of glucose and sulphur containing carbohydrates

B. Chitin- Polymer of glucosamine

C. Lipopolysaccharides-A complex of lipid and polysaccharide

D. Glycogen-Polymer of glucose.

Answer: A



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35. Select the wrong statement

A. Majority of enzymes contains a non-protein part called prosthetic group

B. Thylakoids are arranged one above the other like stack of coins forming a granum.

C. Building block of protein are amino acids.

D. Crossing -over occurs at zygotene stage of meiosis I.

Answer: D



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36. What is laevorotatory ?

A. Fructose

B. Glucose

C. Maltose

D. Sucrose

Answer: A



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37. Which ones are not true?

- (a) Glycerol is a 3-carbon alcohol with 3-OH groups as binding sites.
- (b) Waxes are esters of long chain alcohols and saturated fatty acids.
- (c) The term protein was coined by Mulder.
- (d) Agar is an indispensable polysaccharides, being a complex polymer of glucose and sulphur containing carbohydrates.

A. a and c only

B. d only

C. a and d only

D. a,b and d only

Answer: B



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38. Number of essential amino acids in human is

A. 14

B. 10

C. 8

D. 6

Answer: B



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39. Name the elements which occur in nucleic acid macromolecule

A. C,H,O,N,S

B. C,O,N,S

C. C,O,P,S

D. C,H,O,N,P

Answer: D



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40. Which of the following is the simplest amino acid

A. Glycine

B. Lysine

C. Tyrosine

D. Aspartic acid

Answer: A



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41. An acidic amino acid is

A. Lysine

B. Glutamate

C. Aspartate

D. Both B and C

Answer: D



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42. Bond present between two residues of carbohydrate is

A. Amide

B. Phosphodiester

C. Glycosidic

D. Hydrogen bonds

Answer: C



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43. In ATP high energy bond is present

A. Nucleoside and phosphate group

B. Sugar and phosphate group

C. Base and phosphate group

D. None of the above.

Answer: D



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44. Cane sugar on hydrolysis gives

A. Glucose+ Fructose

B. Glucose+ Glucose

C. Glucose+Galactose

D. Glucose + Maltose

Answer: A



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45. Structure of protein insulin was first studied by

A. Sanger

B. Stanley

C. Nicholson

D. Watson

Answer: A



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46. Kuhne

A. Discovered enzymes

B. Coined the term enzyme

C. Coined the term gene

D. Discovered parathyroid hormone

Answer: B



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47. The major portion of the dry weight of plants comprises of

Or

Frame work elements in plants are

A. Calcium, magnesium and sulphur

B. Carbon,hydrogen and oxygen

C. carbon,nitrogen and hydrogen

D. Nitrogen, phosphorous and potassium

Answer: B



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48. Adenosine monophosphate is a

A. Nucleoside of DNA

B. Nucleotide of DNA

C. Nucleoside of RNA

D. Nucleotide of RNA.

Answer: D



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49. Chitin occurs in

A. Crab

B. Prawn

C. Agaricus

D. All of the above

Answer: D



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50. Glucose is

- A. Pyranose pentose sugar
- B. Furanose pentose sugar
- C. Ketose hexose sugar
- D. Aldose hexose sugar

Answer: D



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