BIOLOGY

NEET & AIIMS

BIOMOLECULES

Example

1. What are primary metabolites ?

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2. What are monosaccharides ? Give one example.

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3. What are homopolysachhrides ? Give one example.

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4. What is the basic unit of chitin ?

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5. Name a homopolysachharide used in testing of kidney function.

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6. How many types of amino acids are present in protein ?

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7. What is an oligopeptide ?

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8. Name a protein that exhibits that quaternary structure.

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9. Why are immunoglobulins known as defense proteins ?

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10. What is Rubisco ?

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11. What are glycerides ?

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12. What are the components of a phospholipid molecule?

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13. What are lipoproteins ?

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14. What are the components of a nucleotide ?

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15. What is the genetic meterial of tobacco mosaic virus ?

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16. What is nucleoside?

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17. What is metabolic flux ?

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18. Why living organisms cannot not work can be done and living organisms have to work continuously.

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19. What are oxidoreductases ?

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20. What is activation energy ?

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Try Yourself

1. Secondary metabolites that belong to lectin is

A. Carotenoids

B. Gums

C. Lemon grass oil

D. Concanavalin A

Answer: D

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2. Codeine is

A. An essential oil

B. A polymeric substance

C. An alkaloid

D. A toxin

Answer: C

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3. Which of the following is a disaccharide ?

A. Sucrose

B. Ribose

C. Starch

D. Fructose

Answer: A

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4. The polysaccharide present int eh exoskeletons of arthropods is

A. Hyaluronic acid

B. Chitin

C. Cellulose

D. Glycogen

Answer: B

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5. ..... Is a derived monosaccharide.

A. Glucose

B. Fructose

C. Raffinose

D. Deoxyribose

Answer: D

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6. With iodine molecule, starch gives a characteristic

A. Red colour

B. Blue colour

C. Orange colour

D. Brown colour

Answer: B

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7. Peptidoglycan is made up of

A. D-glucuronic acid

B. N-acetyl glucosamine

C. N-acetyl glucosamien and N-acetyl muramic acid

D. Both (1) & (2)

Answer: C

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8. The carbohydrate present in cotton fibre is

A. Hyaluronic acid

B. Glycogen

C. Cellulose

D. Chitin

Answer: C

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9. Monosaccharides are compossed of

A. 2-3 carbon atoms

B. 3-7 carbon atoms

C. 8-10 carbon atoms

D. More than 10 carbon atoms

Answer: B

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10. Lactose is a

A. Trisaccharide

B. Monosaccharide

C. Disaccharide

D. Tetrasaccharide

Answer: C

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11. An aromatic amino acid is

A. Tryptophan

B. Glutamate

C. Arginine

D. Valine

Answer: A

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12. Basic amino acids have an additional

A. Carboxylic group

B. Amino group

C. Glutamate

D. Proline

Answer: B

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13. Name one essential amino-acid

A. Methionine

B. Alanine

C. Glutamate

D. Proline

Answer: A

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14. An extra carboxylic group is present in

A. Aspartate

B. Lysine

C. Tyrosine

D. Phenylalanine

Answer: A

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15. The most abundant protein in the whole of biosphere is

A. Collagen

B. RuBisCO

C. Fibroin

D. Myoglobin

Answer: B

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16. Protein which transports glucose into cells is

A. Trypsin

B. Keratin

C. Haemoglobin

D. GLUT-4

Answer: D

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17. Active site of enzyme is formed by

A. Primary structure of protein

B. Secondary structure of protein

C. Tertiary structure of proteoin

D. Quaternary structure of protein

Answer: C

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18. Proteins are

A. Macromolecules

B. Homopolymers

C. Micromolecules

D. Polymers of starch

Answer: A

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19. Which of the following is protein of silk ?

A. Myoglobin

B. Keratin

C. Fibroin

D. Haemoglobin

Answer: C

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20. A protein that has three helical polypeptides supercoiled to form a rope like structure is

A. Insulin

B. Collagen

C. Haemoglobin

D. Both (1) & (3)

Answer: B

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21. Which of the following is a saturated fatty acid ?

A. Palimitic acid

B. Oleic acid

C. Stearic acid

D. Both (1) & (3)

Answer: D

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22. The most abundant steroid present in animal tissues is

A. Triglyceride

B. Phospholipid

C. Cholesterol

D. Lipolipid

Answer: C

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23. Waxes are

A. Esters of fatty acids and alcohol other than glycerol

B. True fats

C. Lipids that contains proteins

D. Sterols

Answer: A

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24. Fats and oils are

A. Glycolipids

B. Triglycerides

C. Phospholipids

D. Conjugated lipids

Answer: B

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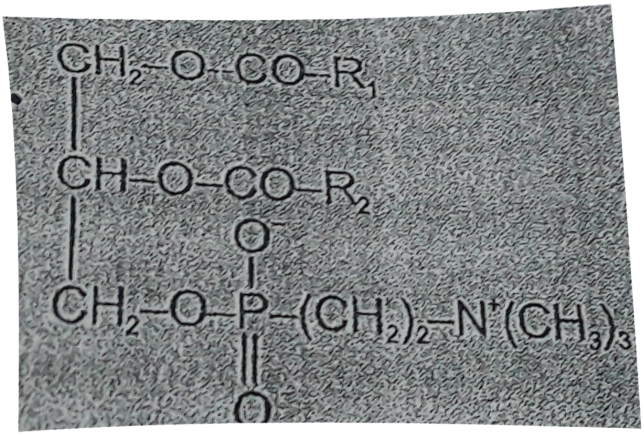
25. The given structure represents a



A. Glycolipid

B. Steroid

C. Phospholipid

D. Lipoprotein

Answer: C

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26. Which of the following is a derived lipid ?

A. Steroid

B. Wax

C. Cutin

D. Suberin

Answer: A

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27. In DNA, adenine always pairs with

A. Adenine

B. Thymine

C. Cytosine

D. Guanine

Answer: B

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28. In double helix model of DNA, the number of hydrogen bonds formed between guanine and cytosine is

A. Two

B. One

C. Three

D. Four

Answer: C

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29. In B-DNA each helical turn contains

A. 12 base pairs

B. 10 base pairs

C. 8 base pairs

D. 11 base pairs

Answer: B

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30. The Watson-Crick model of DNA exhibits..... Of DNA

A. Primary structure

B. Secondary structure

C. Tertiary structure

D. Quaternary structure

Answer: B

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31. ..... Forms the molecule basic of heredity.

A. Protein

B. DNA

C. Lipids

D. All of these

Answer: B

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32. Which base is present in RNA but not in DNA?

A. Adenine

B. Uracil

C. Guanine

D. Cytosine

Answer: B

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33. Adenosine triphosphate (ATP) is present in

A. Animal cells

B. Plant cells

C. Microorganism

D. All of these

Answer: D

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34. Which of the following statements is incorrect ?

A. Living state and metabolism are synonymous

B. Living organisms are produced are always in equilibrium

C. ATP molecules are produced during cellcular respiration

D. Glycolysis of acetyl is a catabolic pathway

Answer: B

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35. Which of the following occurs through an anabolic pathway ?

A. Conversion of glucose into lactic acid

B. Formation of proteins from amino acids

C. Formation of acetyl CoA from pyruvate

D. All of these

Answer: B

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36. In metabolic pathways

A. Only complex structures are formed

B. Metabolites are converted into each other through a series of linked reactions

C. Only simple structure are formed

D. The biochemical reactions are catalysed by inoganic catalyst

Answer: B

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37. Which of the following enzyme is a hydrolase ?

A. Amylase

B. Histidine decarboxylase

C. Pyruvate carboxylase

D. Both (2) & (3)

Answer: A

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38. Co-factor whose association with the apoemzyme is only transient

A. Prosthetic group

B. Coenzyme

C. Metal ions

D. All of these

Answer: B

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39. Inorganic catalysts are

A. Usually small and simple molecules

B. Not specific for any one reaction

C. Not present in living cells

D. All of these

Answer: D

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Exercise

1. 98% of living organism is formed of six elements-carbon , hydrogen , nitrogen , oxygen and

A. S & Mg

B. Mg & Na

C. Ca & P

D. P & S

Answer: C

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2. Which of the following sugars is laevorotatory ?

A. Fructose

B. Glucose

C. Maltose

D. Galactose

Answer: A

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3. Glucose is

A. Cane sugar

B. Grape sugar

C. Malt sugar

D. Triose sugar

Answer: B

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4. 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. Polysachharides

Answer: C

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5. Fehling's solution can detect presence of

A. Sucrose

B. Glucose

C. Aminoacids

D. Lipids

Answer: B

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6. Which of the following is present in acid insoluble fraction ?

A. Glucose

B. Fructose

C. Alanine

D. Lipid

Answer: D

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7. Which of the following secondary metabolites is a polymeric substance ?

A. Ricin

B. Monoterpenes

C. Curcumin

D. Rubber

Answer: D

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8. Which of the following is the most abundant element present in human body ?

A. Carbon

B. Hydrogen

C. Oxygen

D. Nitrogen

Answer: C

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9. Which of the following is a primary metabolite ?

A. Carotenoid

B. Glucose

C. Morphine

D. Cellulose

Answer: B

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10. Which of the following is a secondary metabolite as well as a drug ?

A. Concanavlin A

B. Vinblastine

C. lDiterpenes

D. Ricin

Answer: B

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11. Inulin is a polymer of

A. Fructose

B. Glucose

C. Mannose

D. Ribose

Answer: A

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12. Plant cell walls are made of

A. Homopolymer of fructose

B. Heteropolymer of glycogen

C. Homopolymer of glucose

D. Homopolymer of glycogen

Answer: C

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13. As starch is related to plant body, which of the following polysaccharides is related to animal body ?

A. Cellulose

B. Chitin

C. Glycogen

D. Inulin

Answer: C

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14. Which of the following is not a chemically modified sugar ?

A. Glucosamine

B. N-acetyl galactosamine

C. Galacturonic acid

D. Dihydroxy acetone

Answer: D

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15. Cotton fibre is made up of

A. Cellulose

B. Glycogen

C. Chitin

D. Starch

Answer: A

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16. Iodine test can detect the presence of

A. Starch

B. Cellulose

C. Both (1) & (2)

D. Chitin

Answer: A

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17. Which of the following is a structural polysaccharide ?

A. Glycogen

B. Starch

C. Inulin

D. Cellulose

Answer: D

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18. Which of the following is mismatched ?

A. Chitin - Polymer of glucosamine

B. Glycogen - Polymer of glucose

C. Cellulose - Heteropolysaccharide

D. Inulin - Homopolysaccharide

Answer: C

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19. Unbranched polymer of glucose is

A. Starch

B. Glycogen

C. Cellulose

D. Chitin

Answer: C

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20. Which of the following is the most abundant carbohydrate in biosphere ?

A. Starch

B. Glycogen

C. Cellulose

D. Hemicellulose

Answer: C

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21. Based on the nature of R group there are many amino acids. If the R group in a proteinaceous amino acid is a methyl group, then the amino acids is

A. Glycine

B. Alanine

C. Serine

D. Phenylalanine

Answer: B

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22. Which of the following amino acid is basic in nature ?

A. Glutamic acid

B. Lysine

C. Valine

D. Tyrosine

Answer: B

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23. Which of the following statements is false regarding proteins ?

A. A protein is heteropolymer and not a homopolymer

B. Collagen is the most abundant protein in the animal world

C. RuBisCO is the most abundant protein in the whole biosphere

D. The first amino acid in the polypeptide chain is called as C-terminal amino acid and the last amino acid is called as N-terminal amino acid.

Answer: D

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24. Tick mark the incorrect statement about adult human haemoglobin

A. It is made up of the four sub-units

B. Two sub-units are α-type and two sub-units of β-type

C. It has quarternary structure of protein

D. It is a simple protein

Answer: D

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25. Which of the following structure of protein is absolutely necessary for the many biological activities of proteins ?

A. Primary

B. Secondary

C. Tertiary

D. Quaternary

Answer: C

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26. Which of the following is incorrect matching of an amino acid and its functions ?

A. Amino — Functions
Tyrosine — Forms hormones thyroxine and adrenaline

B. Amino — Functions
Glycine — Involved in the formation of heme

C. Amino — Functions
Tryptophan — Involved in the formation of vitamin nicotinamide

D. Amino — Functions
Tryptophan — Skin pigment melanin

Answer: D

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27. Which of the following is one of the sweetest protein obtained from African berry plant ?

A. Monellin

B. Resilin

C. Collagen

D. GLUT-4

Answer: A

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28. Antibodies that help to fight infectious agents are

A. Polysaccharides

B. Amino acids

C. Proteins

D. Glucose

Answer: C

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29. The tertiary structure of proteins can be destroyed by

A. High energy radiations

B. High temperature

C. Drastic changes in pH

D. All of these

Answer: D

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30. Tick mark the false statement.

A. Artificial silk is a polysaccharide

B. Natural silk is a protein

C. Collagen protein forms intercellular ground substance

D. Plant proteins are first class proteins

Answer: D

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31. unsaturated fats are made saturated by

A. Polymerisation

B. Dehydrogenation

C. hybridisation

D. Hydrogenation

Answer: D

Watch Video Solution

32. Arachidonic acid has

A. 20 carbons excluding carboxyl carbon

B. 20 carbons including carboxyl carbon

C. 16 carbons excluding carboxyl carbon

D. 16 carbons including carboxyl carbon

Answer: B

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33. Lecithin is a

A. Simple lipid

B. Derived lipid

C. Phiospholipid

D. Steroids

Answer: C

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34. The basic/structural unit of a nucleic acid is

A. Pentose sugar

B. Phosphoric acid

C. Nucleotide

D. All of these

Answer: C

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35. Which of the following statements is incorrect ?

A. Lipids are strictly macromolecules

B. Palmitic acid has 16 carbons including carboxyl carbon

C. Oil have low melting point and hence remain as oil in winters

D. Arachidonic acid is an unsaturated fatty acid

Answer: A

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36. Which one is correct base pairing for DNA molecules ?

A. Cytosine — Uracil

B. Thymine — Guanine

C. Thiamine — Adenine

D. Cytosine — Guanine

Answer: D

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37. DNA resembles RNA as both have

A. Ability to replicate

B. Similar sugars

C. Similar pyrimidine bases

D. Polymer of nucleotides

Answer: D

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38. On hydrolysis a nucleoside would not yield

A. Purines

B. Pyrimidine

C. Pentose sugar

D. Phosphoric acid

Answer: D

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39. Which of the following statement is incorrect ?

A. Backbone of DNA is formed by sugar-phosphate-sugar chain

B. Nucleic acids are present in acid soluble fraction of any living tissue

C. DNA and RNA function as genetic material

D. There are three hydrogen bonds between G and C in DNA molecule

Answer: B

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40. Which of the following is not a salient feature of B-DNA ?

A. One full turn of helical strand involves 10 base pairs

B. Pitch of helix would be 34 Å

C. Diameter of double helix would be 20 Å

D. DNA with left handed coiling

Answer: D

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41. All the following statements are correct about enzymes, but one is wrong. Select the incorrect statement.

A. Almost all enzymes are proteins

B. There are some nucleic acids which behave like enzymes and are called ribozymes

C. Enzymes obtained from thermophilic organisms retain their catalytic power even at high temperatures up to $80 - 90^{\circ} C$

D. Ribozyme was discovered by Morgan et al.

Answer: D

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42. Study the reaction given below

$$CO_2 + H_2O \underset{\text{EnZyme}}{\Longleftrightarrow} H_2CO_3$$

In absence of any enzyme this reaction is very slow, with 200 molecules of H_2CO_3 being formed in an hour. In presence of enzyme the reaction speeds up dramatically with about 6000,000 molecules formed every second. Name the enzyme which has accelerated up the reaction by 10 million times.

A. Ribozyme

B. Carbonic anhydrase

C. Catalase

D. Peroxidase

Answer: B

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43. Which of the following is not an example of competitive inhibition ?

A. Inhibition of succinic dehydrogenase by malonate

B. Sulpha drugs used to control bacterial pathogens

C. Inhibition of alcohol dehydrogenase by ethanol in methanol poisoning

D. Inhibition of hexokinase by glucose-6-phosphate

Answer: D

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44. Which of the following set of coenzymes are nucleotides of vitamin niacin ?

A. NAD, NADP

B. FMN, FAD

C. ATP, ADP

D. ATP, FAD

Answer: A

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45. Which of the following is a cofactor for the proteolytic enzyme carboxpeptidase?

A. Zinc

B. Copper

C. Calcium

D. Magnesium

Answer: A

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

A. Oxidoreductases

B. Transferases

C. Lyases

D. Isomerases

Answer: B

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47. Which of the following factor/s can influence enzyme activity ?

A. High temperature

B. pH

C. Substrate concentration

D. All of these

Answer: D

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48. What would happen to $V_{\max}$, in presence of a competitive inhibitor ?

A. Decreases

B. Increases

C. Remains the same

D. First increases then decreases

Answer: C

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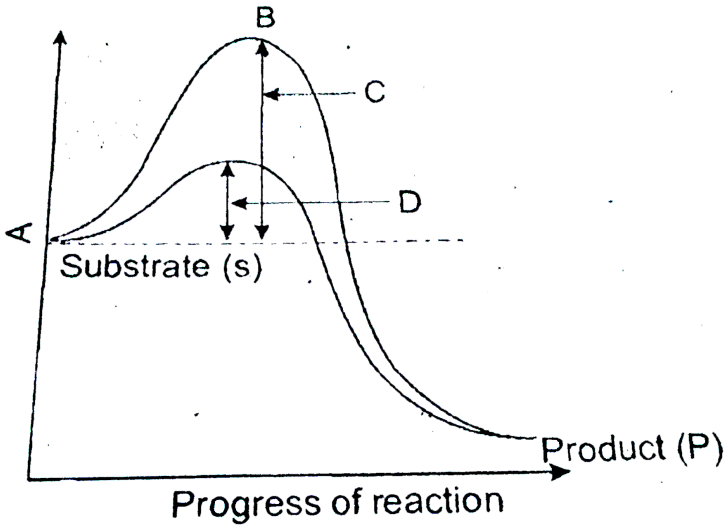
49. Study the following graph of concept of activation energy given below. Select the correct option for stages labelled A to D.



A.

A	B	C
Transition State	Potential energy	Activation energy without enzy

B.

A	B	C
Kinetic energy	Potential energy	Activation energy without enzym

C.

A	B	C
Potential energy	Transition state	Activation energy without enzy

D.

A	B	C
Potential energy	Transition state	Activation energy without enzy

Answer: C

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50. Enzymes work at optimum temperature. Over a range $0 - 40^{\circ} C$, what would happen to the rate of enzyme controlled reactions for every $10^{\circ} C$ rise in temperature ?

A. The rate doubles itself

B. Decreases by half

C. No effect

D. First increases than decreases

Answer: A

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Assignment Section A

1. Which of the following is not strictly a biomacromolecule?

A. Proteins

B. Lipids

C. Polysaccharides

D. Nucleic acid

Answer: B

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2. A secondary metabolite that acts as a toxin is

A. Carotenoids

B. Curcumin

C. Abrin

D. Monoterpenes

Answer: C

Watch Video Solution

3. A secondary metabolite that is alkaloid in nature is

A. Codeine

B. Anthocyanin

C. Gum

D. Abrin

Answer: A

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4. Peptidoglycan present in bacterial cell envelope is

A. Made up of cellulose

B. A heteropolymer

C. An oligosaccharide

D. A homopolymer

Answer: B

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5. In glycine the R group is replaced by -

A. A methyl group

B. Hydroxy methyl

C. A carboxylic group

D. A hydrogen

Answer: D

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6. Zwitterions are ionized species of

A. Acidic amino acids

B. Basic amino acids

C. Netural amino acids

D. All of these

Answer: D

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7. Non-essential amino acids

A. Must be obtained from food

B. Are synthesized in our body

C. Are not needed in our diet

D. Both (2) & (3)

Answer: D

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8. The most abundant protein in animal world is

A. Chitin

B. Collagen

C. Peptidoglycan

D. Hyaluronic acid

Answer: B

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9. Proteins which catalyse biochemical reactions in the living world are known as

A. Enzymes

B. Hormones

C. Anlibodies

D. Receptor

Answer: A

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10. The amino acids in a protein are held together by

A. Glycosidic bond

B. Phosphodiester bond

C. Peptide bond

D. Hydrogen bond

Answer: C

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11. A protein which exhibits β pleated structure is

A. Fibroin

B. Haemoglobin

C. Enzyme

D. α-Keratin

Answer: A

Watch Video Solution

12. An example of protein with quaternary structure is

A. Myoglobin

B. Haemoglobin

C. Keratin

D. All of these

Answer: B

Watch Video Solution

13. Lecithin is a

A. Type of wax

B. Phospholipid

C. Oil have low melting point and hence remain as oil in winters

D. Simple fatty acid

Answer: B

Watch Video Solution

14. Lipids that insulate the nerve fibre are

A. Lecithin

B. Cholesterol

C. Suberin

D. Glycolipids

Answer: D

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15. The pentose sugar present in RNA is

A. Galactose

B. Surcose

C. Ribose

D. Fructose

Answer: C

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16. Nucleoside is

A. Sugar + Nitrogenous base

B. Sugar + Phosphate

C. Nitrogenous base + Phosphate

D. Purine + Pyrimidine

Answer: A

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17. In B-DNA, one full turn of the helical strand contains

A. 11 base pairs

B. 8 base pairs

C. 10 base pairs

D. 9 base pairs

Answer: C

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18. In a DNA molecule adenine of one strand base pair with ..... on the other strand

A. Guanine

B. Thymine

C. Cytosine

D. Both (1) & (3)

Answer: B

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

A. 4.3Å

B. 2.4Å

C. 3.4Å

D. 4.2Å

Answer: C

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20. The nitrogenous bases of the two strands of DNA are joined by

A. Phosphodiester bond

B. Hrdrogen bond

C. Glycosidic bond

D. Peptide bond

Answer: B

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21. The genetic material of Tobacoo mosaic virus is

A. RNA

B. DNA

C. Protein

D. NADPH

Answer: A

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22. The double helix model of DNA was proposed by

A. Berzelius

B. Watson and Crick

C. Griffith

D. Robert Brown

Answer: B

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23. In the 5' end of a DNA molecule

A. The fifth carbon of pyrimidine base is free

B. The fifth carbon of purine base is free

C. The fifth carbon of pentose sugar is free

D. Both (1) & (3)

Answer: C

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24. The pitch of the B-DNA is

A. 36Å

B. 3.4Å

C. 34Å

D. 3.6Å

Answer: C

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25. The primary precursor for the production of cholesterol in our body is

A. Acetic acid

B. Citric acid

C. Ethyl alcohol

D. Methanol

Answer: A

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26. Metabolic flux is regulated by

A. Enzymes

B. Sugars

C. Phospholipids

D. Sterols

Answer: A

Watch Video Solution

27. In DNA, uracil is replaced by

A. Thymine

B. Thamine

C. Cytosine

D. Adenine

Answer: A

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28. Ribozymes are.....that behave like enzymes

A. Proteins

B. Ribonucleic acids

C. Oligosaccharide

D. Simple lipids

Answer: B

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29. The most abundant protein in the whole of biosphere is

A. Collagen

B. RuBisCO

C. Trypsin

D. Insulin

Answer: B

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30. What is the fate of pyruvic acid under anaerobic conditions in our body?

A. It gets converted into methyl alcohol

B. It gets converted into acetyl CoA

C. It gets converted into lactic acid

D. It gets converted into glycogen

Answer: C

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31. Organic compounds that are tightly bound to apoenzyme is

A. Prosthetic group

B. Apoenzyme

C. Metal ions

D. Co-enzymes

Answer: A

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32. Bacterial pathogen can be controlled by

A. p-amino benzoic acid

B. Malonate

C. Sulphanilamide

D. All of these

Answer: C

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33. Non-protein part of enzyme is known as

A. Apoenzyme

B. Cofactor

C. Inorganic catalyst

D. Active site

Answer: B

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Assignment Section B

1. In maltose glycosidic bond is formed between

A. Carbon 1 of one glucose molecule and carbon 4 of second glucose molecule

B. Carbon 2 of one glucose molecule and carbon 3 of second glucose molecule

C. Carbon 3 of one glucose molecule and carbon 4 of second glucose molecule

D. Carbon 1 of one glucose molecule and carbon 6 of second molecle

Answer: A

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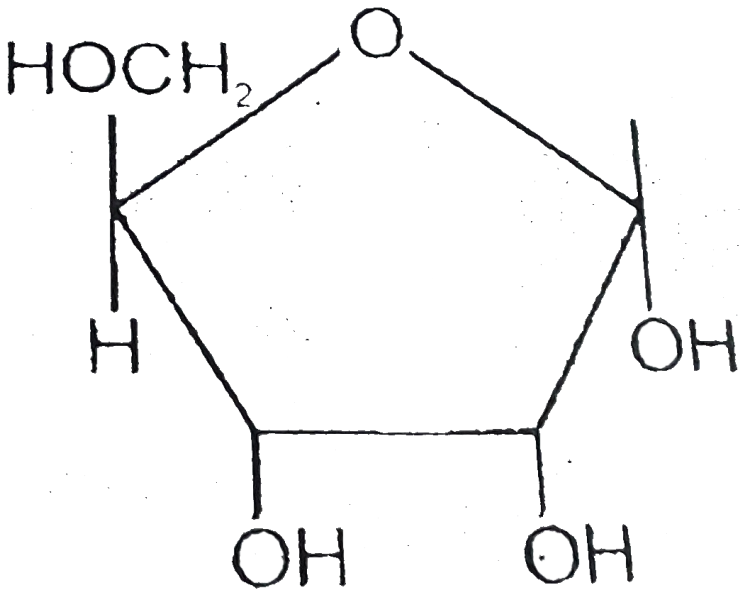
2. The given structure represents a monosaccharide known asltBRgt



A. Ribose

B. Glucose

C. Fructose

D. Raffinose

Answer: A

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3. Chitin present in the exoskeletons of arthropods is

A. Protein

B. Polysaccharide

C. Lipid

D. Derived monosaccharide

Answer: B

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4. The given amino acid is .....in nature

$$\begin{array}{l} COOH \\ | \\ H_2N - C - H \\ | \\ CH_2.COOH \end{array}$$

A. Acidic

B. Basic

C. Netural

D. Aromatic

Answer: A

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5. The structure of protein which gives a three demensional view is

A. Primary structure

B. α-helix

C. β-pleated sheet

D. Tertiary structure

Answer: D

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6. The product of the given reaction would be a

$$\begin{array}{lll} CH_2OH & & HOOC-R_1 \\ | & & \\ CHOH & + & HOOC-R_2 \longrightarrow \ldots\ldots. \\ | & & \\ CH_2OH & & HOOC-R_3 \\ \text{Glycerol} & & \text{Fatty acid} \end{array}$$

A. Monoglyceride

B. Diglyceride

C. Triglyceride

D. Both (1) & (3)

Answer: C

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7. The given fatty acid is known as

$$CH_3(CH_2)_7CH=CH(CH_2)_7COOH$$

A. Plamitic acid

B. Oleic acid

C. Stearic acid

D. Arachidonic acid

Answer: B

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8. Nucleic acids exhibit

A. Secondary structure

B. Tertiary structure

C. Quaternary structure

D. Both (2) & (3)

Answer: A

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9. The backbone of a DNA molecule is made up of

A. Adenine and guanine

B. Sugar-phosphate-sugar chain

C. Cytosine and thymine

D. All of these

Answer: B

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10. If the sequence of bases in one of the DNA strand is A G G A G A A, then the sequence of bases in the other complementary strand of DNA would be

A. C C T T C T T

B. T C T C T C C

C. T C C T C T T

D. C C T C T C T

Answer: C

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11. Which of the following statements is correct?

A. Biocatalysts accelerate the rate of a given metabolic reaction

B. Biocatalysts are generally protein

C. Enzyme catalyst differ from inorganic catalyst

D. All of these

Answer: D

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12. In which of the following energy is released?

A. Conversion of glucose into pyruvate

B. Formation of proteins from amino acids

C. Conversion of glucose into lactic acid

D. Both (1) & (3)

Answer: D

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13. Adenosine triphosphate (ATP) liberates high energy by the breakdown of

A. Glycosidic bond

B. Hydrogen bond

C. Phosphate bond

D. Both (1) & (3)

Answer: C

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14. Which of the following statements is incorrect w.r.t. inorganic catalycts?

A. They do not occur in living cells

B. They are not specific for any reaction

C. They get damaged at high temperature

D. They work efficiently at high pressure

Answer: C

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15. Enzymes catalyse biochemical reactions by

A. Lowering the activation energy

B. Increasing the activation energy

C. Establishing stable bonds with substrate

D. Increasing temperature

Answer: A

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16. Read the following :

(a) Low temperature preserves the enzyme

(b) Enzyme gets denatured at high temperature

(c) Enzyme gets dnatured at high temperature

(d) Competitive inhibitor competes with the product formed

Which of the following statement are true ?

A. (a) & (c)

B. (b) & (d)

C. (c) & (d)

D. (a) & (b)

Answer: A

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17. Enzymes catalysing the breakdown of larger molecules into smaller molecules are

A. Hydrolases

B. Isomerases

C. Ligase

D. Both (1) & (3)

Answer: A

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18. Michaelis constant (K_m) value of enzyme is substrate concentration at which velocity of reaction is

A. $v_{\max}$

B. One third $v_{\max}$

C. Half $v_{\max}$

D. One fifth $v_{\max}$

Answer: C

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19. .....catalyses covalent bonding of two substrates

A. Invertase

B. Amylase

C. Glutamate pyruvate transaminase

D. PEP carboxylase

Answer: D

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20. The enzyme that catalyses the conversion of glucose-6-phosphate into fructose-6-phosphate is

A. A ligase

B. An isomerase

C. A lyase

D. A hydrolase

Answer: B

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21. Study the following statements :

(a) The substrate binds to the active site of the enzyme

(b) Enzyme isolated from thermophilic orgabisms get denatured at $50^{\circ} C$

(c) The active site of enzyme breaks the chemical bonds of the product

(d) Prosthetic groups are tightly bound to the apoenzyme

Select the option which includes all correct statements

A. (a) & (c)

B. (c) & (d)

C. (b) & (c)

D. (a) & (d)

Answer: D

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22. one of the following is the correct sequence of carboydrates in the order of increasing comexity of chemical strure.

A. Sucrose, starch, oligosaccharide, maltose, triose

B. Triose, maltose, sucrose, oligosaccharide, starch

C. Triose, glucose, maltose, oligosaccharide, starch

D. Oligosaccharide, triose, starch, sucrose, maltose

Answer: C

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23. Glucose is stored as glycogen in

A. Pancreas

B. Bone

C. Kidney

D. Liver

Answer: D

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24. A cellulose molecule is formed by the polymerisation of glucose. The number of glucose molecules present in a cellulose is

A. 600

B. 6000

C. 60000

D. 60

Answer: B

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25. which of the following are basic amino acids?

A. Glycine and Alannie

B. Lysine and Arginine

C. Glutamic acid and Asparic acid

D. Histidine and Proline

Answer: B

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26. which of the following amino acids is involved in the formation of heme ?

A. Tryptophan

B. Tyrosine

C. Glycine

D. Histidine

Answer: C

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27. Which one of the following is alcoholic amino acid par?

A. Tyrosine and serine

B. Threonine and serine

C. Phenylalanine and tyrosine

D. Tryptophan and phenylalanine

Answer: B

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28. Lysine is an essential amino acid because

A. It is very rare

B. It has a high nutritive value

C. It is an important cinstituent of all proteins

D. It is not formed in the body and has to be provided through diet

Answer: D

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29. RNA is a polymer of

A. Ribonucleotides

B. Deoxyribonucleotides

C. Deoxyribonucleosides

D. Ribonucleosides

Answer: A

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30. t-RNA constitutes about

A. 70-80% of the total RNA

B. 15% of the total RNA

C. 5% of the total RNA

D. 1-3% of the total RNA

Answer: B

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31. In DNA, cytosine pairs with

A. Guanine

B. Thymine

C. Adenine

D. Uracil

Answer: A

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32. All enzymes are proteins except

A. Trypsin

B. Pepsin

C. Steapsin

D. Ribozyme and Ribonuclease-P

Answer: D

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33. Cyanide kills an animal by

A. Killing the brain cells

B. Conpetitive inhibitor of enzyme cytochrome oxidise

C. Inhibiting cytochrome oxidase, a mitochondrial enzyme essential for cellular respriation by Non-competitive inhibition

D. Killing the cells of cardiac muscles

Answer: C

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34. Electron transferring enzymes belong to

A. Transferases

B. Oxidoreductases

C. Lyasse

D. Isomerases

Answer: B

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Assignment Section C

1. Which of the following are not polymeric

A. Nucleic acids

B. Proteins

C. Polysaccharides

D. Lipids

Answer: D

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

A. Apoenzyme=Holoenzyme+Coenzyme

B. Holenzyme=Apoenzyme+Coenzyme

C. Coenzyme=Apoenzyme+Holoenzyme

D. Holoenzyme=Coenzyme+Cofactor

Answer: B

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3. A non-proteinaceous enzyme is

A. Lysozyme

B. Ribozyme

C. Ligase

D. Deoxyribonuclease

Answer: B

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4. which of the following is the least likely to be involved in stabilzing the three -dimensional folding of most proteins ?

A. Hydrogen bonds

B. Electrostatic interaction

C. Hydrophobic interation

D. Ester bonds

Answer: D

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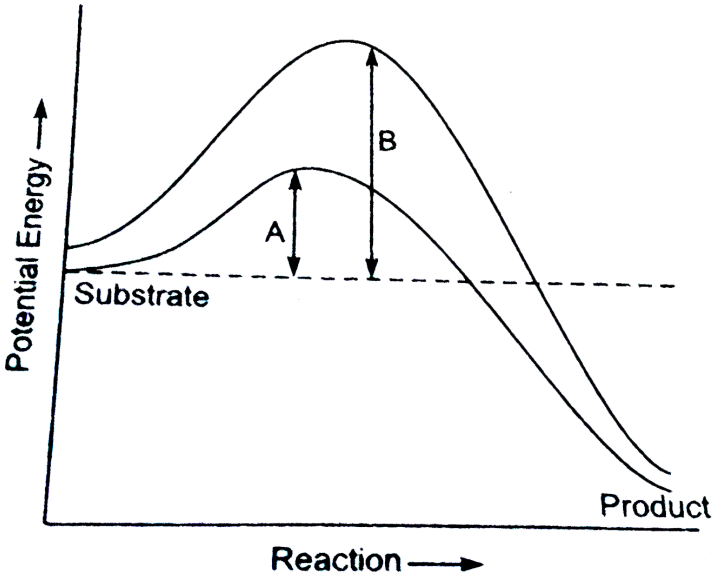
5. which of the following describes the given graph corractly ?



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

B. Exothermic reaction with energy A in presence of enzyme

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

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

Answer: B

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6. A typical fat molecule is made up of

A. Three glycerol and three fatty acid molecules

B. Three glycerol molecules and one fatty acid molecule

C. One glycerol and three fatty acid moelcules

D. One glycerol and one fatty acid molecule

Answer: C

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7. Which one of the following statements is wrong ?

A. Glycine is a sulphur containing amino acid

B. Sucrose is a disaccharide

C. Cellulose is a polysachharide

D. Uracil is a pyrimidine

Answer: A

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8. Which of the following biomolecules does have phosphodiester bond

A. Nucleic acids in a nucleotide

B. Fatty acids in a diglyceride

C. Monosaccharides in a polysaccharide

D. Amino acids in a polypeptide

Answer: A

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

A. Lipoglycans

B. keratin sulphate and chondroitin sulphate

C. D-glucosamine

D. N-acetyl glucosamine

Answer: D

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10. which one of the following is not applicable to RNA

A. Chargaff's rule

B. Complementary base pairing

C. 5' phosphoryl and 3' hydroxyl ends

D. Heterocylic nitrogenous bases

Answer: A

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11. In sea urchin DNA, which is double stranded, 17% of the bases were show to be cytosine. The percentages of the other three bases expected to be present in this DNA are

A. G 8.5%, A 50%, T 24.5%

B. G 34%, A 24.5%, T24.5%

C. G 17%, A 16.5%, T 32.5%

D. G 17%, A 33%, T 33%

Answer: D

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12. Which one of the following statements is incorrect ?

A. The presence of the competitive inhibitor decreases the K_m of the enzyme for the substrate

B. A competitive inhibitor reacts reversibly with the enzyme to form an enzyme-inhibitor complex

C. In competitive inhibition, the inhitor molecule is not chemically changes by the enzyme

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

Answer: A

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

A. Substrate binds with enzyme at its active site

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

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

D. Malonate is a competitive inhibitor of succinic dehydrogenase

Answer: B

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

A. Maltose

B. Sucrose

C. Lactose

D. Ribose 5-phosphate

Answer: B

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15. A phosphoglyceride is always made up of

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

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

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

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

Answer: B

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16. The essential chemical components of many coenzymes are

A. Nucleic acids in a nucleotide

B. Carbohydrates

C. Vitamins

D. Proteins

Answer: C

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

A. Permanent but unstable

B. Transisent and unstable

C. Permanent and stable

D. Transient but stable

Answer: B

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18. Macromolecule chitin is a

A. Phosphorus containing polysaccharide

B. Sulphur containing polysaccharide

C. Simple polysaccharide

D. Nitrogen containing polysaccharide

Answer: D

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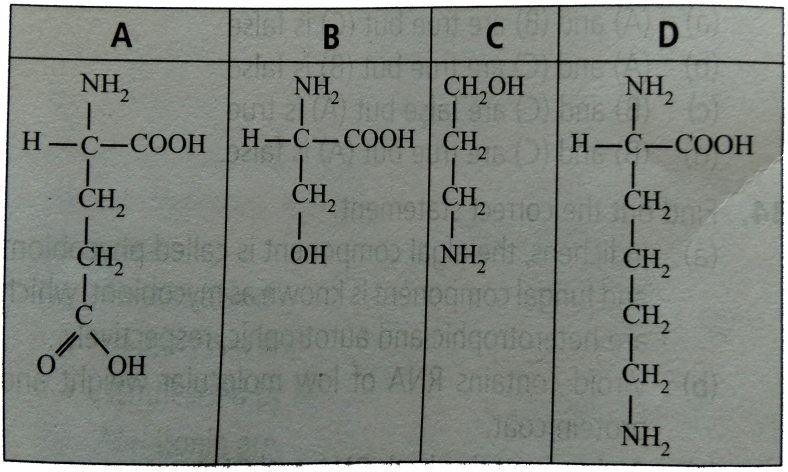
19. Which one out of A-D given below correctly represents the structural formula of a basic amino acid ?



A. A

B. B

C. C

D. D

Answer: D

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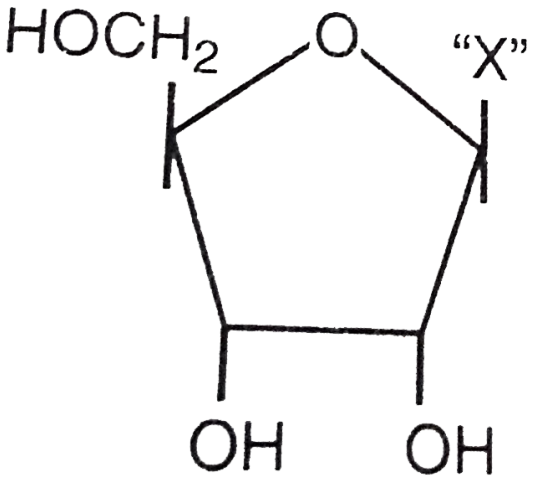
20. The given diagrammatic representation shows one of the categories of small molecular weight organic compounds in the living tissues. Identify the category shown and the one blank component "X" in it :



A. (1) Category: Nucleotide; Component: Adenine

B. (2) Category: Nucleoside; Component: Uracil

C.

	Category	Component
(3)	Cholesterol	Guanin

D.

	Category	Component
(4)	Amino acid	NH_2

Answer: B

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21. For its activity, carboxypeptidase requires

A. Copper

B. Zinc

C. Iron

D. Niacin

Answer: B

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22. Which one of the following biomolecules is correctly characterrised

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

B. Lecithin-a phosphorylated glyceride found in cell membrane

C. Palmitic acid-an unsaturated fally acid with 18 carbon atoms

D. Adenylic acid-adenosine with a glucose phosphate molecule

Answer: B

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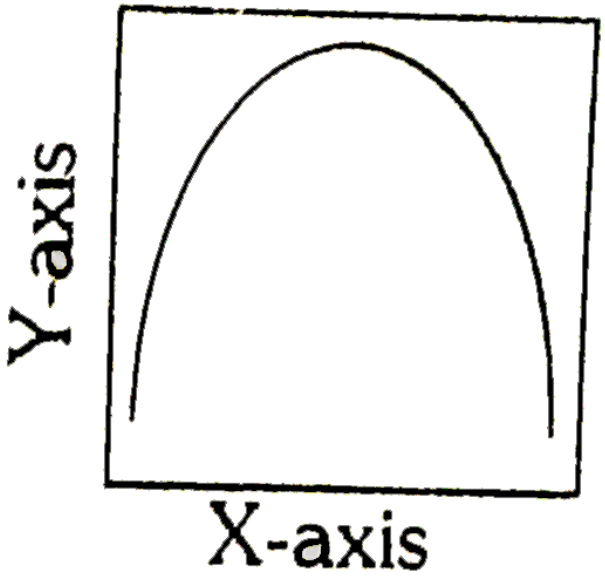
23. The curve given below show enzymatic activity with relation to three conditions (pH, temperature and substrate concentration)



What do the two axises (x and y) represent

A. (1) x-axis: Enzymatic activity; y-axis: Temperature

B. (2) x-axis: Enzymatic activity; y-axis: pH

C. (3) x-axis: Temperature; y-axis: Enzyme activity

D. (4) x-axis: Substrate concentration; y-axis: Enzymatic activity

Answer: C

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24. Which one of the following structure formulae of two organic compound is correctly identified along with its related function

A. A : Lecithin-a component of cell membrane

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

C. A: Triglyceride- major source fo energy

D. B: Uracil -a component of DNA

Answer: A

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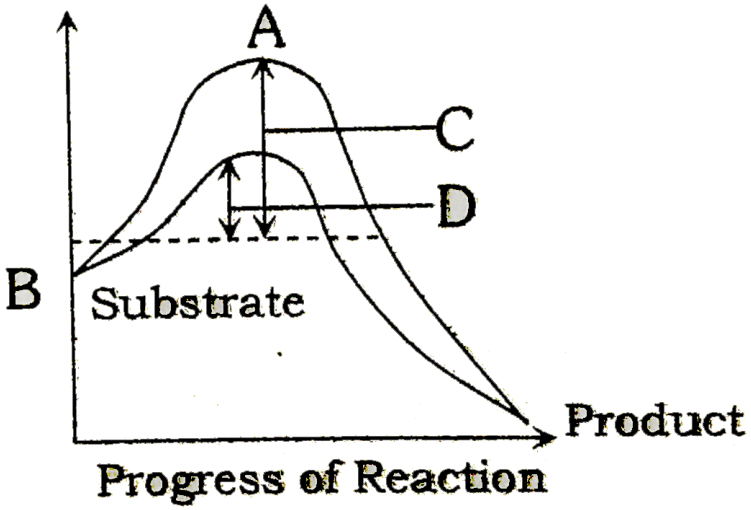
25. The figure given below shows the conversion of a substrate into product by an enzyme. In which one of the four options (a-d) the

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



A.

	A	B	C
(1)	Potential energy	Transition state	Activation energy with enz

B.

	A	B	C
(2)	Transition state	Potential energy	Activation energy with-out

C.

	A	B	C
(3)	Activation energy with-out enzyme	Transition state	Activat

D.

	A	B	C
(4)	Activation energy with enzyme	Transition state	Activation e

Answer: B

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

A. Enzymes require optimun pH for maximal activity

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

C. Enzymes are highly specific

D. Most enzymes are proteins but some are lipids

Answer: D

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27. Which one of the following pairs is wrongly matched

A. Alcohol - Nitrogenase

B. Fruit juice - Pectinase

C. Textile - Amylase

D. Detergents - Lipase

Answer: A

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

(A) Easily translocated

(B) Chemically non-reactive

(C) Easily digested by animals

(D) Osmotically inactive

(E) Synthesized during photosynthesis

The useful proeprties ar :

A. Both a & e

B. Both b & c

C. Both b & d

D. Both a,c & e

Answer: C

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

A. Coenzyme

B. Holoenzyme

C. Apoenzyme

D. Isoenzyme

Answer: A

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30. Telomerase is an enzyme which is a

A. Repetitive DNA

B. RNA

C. Simple protein

D. Ribonucleoprotein

Answer: D

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31. Which of the following is the simplest amino acid

A. Tyrosine

B. Asparagine

C. Glycine

D. Alanine

Answer: C

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

A. Enhance oxidative metabolism

B. Are conjugated proteins

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

D. Help in regulating metabolism

Answer: D

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33. Crabohydrates, the most abundant biomlecles on earth, are produced by

A. All bacteria, fungi and algae

B. Fungi, algae and green plant cells

C. Some bacteria, algae and green plant cells

D. Viruses, fungi and bacteria

Answer: C

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

A. Non-competitive inhinition of an enzyme can be overcome by adding large amount of substrate

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

C. Competitive inhibition is seen when the substrate and the inhibitor compete

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

Answer: C

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

A. The K_m value

B. The pH optimum value

C. Formation of the product

D. Molecular size of the enzyme

Answer: A

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2005

1. The four elements that make up 96% of all the elements found in a living system are

A. C, H, O and P

B. C, N, O and P

C. H, O, C and N

D. C, H, O and S

Answer: C

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2006

1. High cholesterol patients are advised to use

A. Ghee, butter and oils

B. Groundnut oil, margarine and vagetable oils

C. Fatty oil and butter

D. Cheese dalda and ghee

Answer: B

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2007

1. Essential amino acid is

A. Phenylalanine

B. Glycine

C. Aspartic acid

D. Serine

Answer: A

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2008

1. Lipids are incoluble in water, because lipids molicules are

A. Hydrophilic

B. Hydrophobic

C. Neutral

D. Zwitter ions

Answer: B

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2009

1. The major role of minor element inside living organisms is to act as:

A. Co-factors of enzymes

B. Building blocks of important amino acids

C. Constituents of hormones

D. Binders of cell structure

Answer: A

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2010

1. Nucleotides are building blocks of nucleic acids. Each nucleotide is a composite molecule formed by :

A. Base-sugar-phosphate

B. Base-sugar-OH

C. $(\text{Base-sugar-phosphate})_n$

D. Sugar-phosphate

Answer: A

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2011

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

A. Sulphur and magnesuim

B. Magnesuim and sodium

C. Calcium and phosphorus

D. Phosphorus and sulphur

Answer: C

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2012

1. Which of the following is a neutral amino acid ?

A. Glutamne

B. Arginine

C. Valine

D. Asparagine

Answer: C

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2013

1. The most unsaturated fatty acid is

A. Linoleic acid

B. Oleic acid

C. Linolenic acid

D. Arachidonic acid

Answer: D

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2014

1. Which of the following is a nucleotide ?

A. Thymidine

B. Cytosine

C. Thiamine

D. Uridylic acid

Answer: D

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2015

1. Which of the following is incorrect regarding the amino acids and their functions ?

A. Tyrosine : Converted into epinephrine hormone and used in the synthesis of melanin pigment

B. Glycine : Involved in the formation of heme

C. Tryptophan : Helps in the synthesis of auxin hormone

D. Histidine : Can be converted into histamine by the removal of amino group

Answer: D

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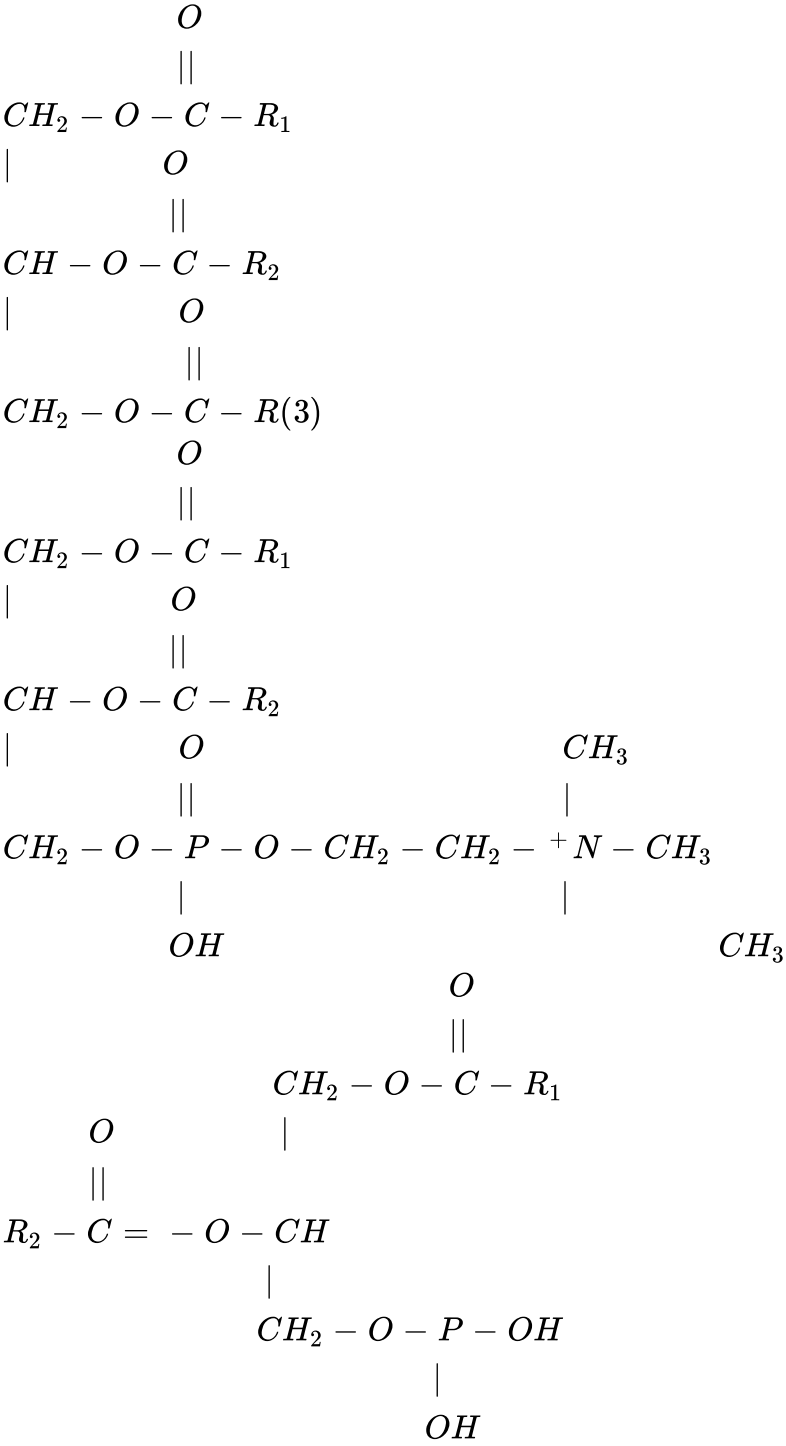
Assignment Section C Questions Asked Prior To Medical Ent Exams 2016

1. Which of the following is the diagrammatic representation of phospholipid lecithin ?

A.
$$\begin{array}{l} \quad\quad\quad\quad O \\ \quad\quad\quad\quad || \\ CH_2 - O - C - R_1 \\ | \quad\quad\quad O \\ \quad\quad\quad\quad || \\ CH - O - C - R_2 \\ | \quad\quad\quad O \\ \quad\quad\quad\quad || \\ CH_2 - O - P - O - CH_2 - CH_2 - NH_3^+ \\ \quad\quad\quad\quad | \\ \quad\quad\quad\quad OH \end{array}$$



Answer: C

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2017

1. Which of the following is not a secondary metabolite of plant cell ?

A. Rubber

B. Chlorophyll

C. Essential oil

D. Tannins

Answer: B

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2018

1. The most abundant molecule in cell is

A. Water

B. Carbohydrates

C. Lipid

D. Protein

Answer: A

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2019

1. Which are the most diverse molecules in the cell ?

A. Lipids

B. Mineral salts

C. Proteins

D. Carbohydrates

Answer: C

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2020

1. Most abundant organic compound on earth is

A. Protein

B. Cellulose

C. Lipids

D. Steroids

Answer: B

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2021

1. Haemoglobin is a type of

A. Carbohydrate

B. Respiratory pigment

C. Vitamin

D. Skin pigment

Answer: B

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2022

1. Collagen is

A. Fibrous protein

B. Globular protein

C. Lipid

D. Carbohydrate

Answer: A

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2023

1. Maltose is formed of two molecules of

A. Fructose

B. Lactose

C. Glucose

D. Sucrose

Answer: C

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2024

1. A polysaccharide, which is synthesised and stored in liver cells is

A. Arabinose

B. Glycogen

C. Lactose

D. Galactose

Answer: B

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2025

1. Agar agar is obtained from

A. Red algae

B. Blue-green algae

C. Brown algae

D. Green algae

Answer: A

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2026

1. Which of the following groups consists of polysaccharides only ?

A. Sucrose, glucose and fructose

B. Maltose, lactose and frutose

C. Glycogen, sucrose and maltose

D. Glcogen , cellulose and starch

Answer: D

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2027

1. lactose is composed of

A. Glucose+galactose

B. Fructose +galactose

C. Glucose + fructose

D. Glucose + glucose

Answer: A

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2028

1. Cellulose, the most important constituent of plant cell wall is made up of

A. Branched chain of glucose molecules linked by α 1,4 glycosidic bond in straight chain and α 1,6 glycosidic bond at the site of branching

B. Unbrached chain of glucose molecules linked by β 1,4 glycosidic bond

C. Branched chain of glucose molecules linked by α 1,6 glycosidic bond at the site of branching

D. Ubranched chain of glucose molecules linked by alpha` 1,4 glycosidic bond

Answer: B

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2029

1. A person who is eating boiled potato his food contains the component is:

A. Cellulose, which can be digested by cellulase

B. Starch, which cannot be digested

C. Lactose, which cannot be digested

D. DNA , which can be digested by pancreatic DNAase

Answer: D

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2030

1. Which of the following is a reducing sugar

A. Galactose

B. Gluconic acid

C. β-methyl galactoside

D. Sucrose

Answer: A

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2031

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

A. Preparation of pure cellulose

B. Treatment of wood with chemicals that break down cellulose

C. Removal of oils present in the wood by treatment with suitable chemicals

D. Removal of water from the wood by prolonged heating at approximately $50^{\circ} C$

Answer: A

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2032

1. β 1-4 linkages are present in

A. Cellulose

B. Chitin

C. Starch

D. Both (1) & (2)

Answer: D

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2033

1. Which of the following statements is false ?

A. Cellulose is the most abundant organic compound in the bioshere

B. Cellulose is an unbranched polymer with β-1, 4 glycosidic bonds

C. Rayon and celluphane are chemiscally similar to cellulose xanthte

D. Cellulose can be digested by the herbivores by β-amylase, produced by the glandular cells of their alimentary canal

Answer: D

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2034

1. If the total amount of adenine and thynine in a double-stranded DNA is 60%, the amount of guanine in this DNA will be

A. $15\ \%$

B. 20 %

C. 30 %

D. 40 %

Answer: B

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2035

1. DNA has equal number of adenine and thymine residuces (A=T) and equal number of guanine and cytosine (G=C). These relationships are known as

A. Chargaff's rule

B. Coulomb's law

C. Le Chatelier's priciple

D. Van't Hoff plot

Answer: A

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2036

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

A. Adenine, Thymine - Purines

B. Thymine, Uracil - Pyrimidines

C. Uracil, Cytosine - Pyrimidines

D. Guanine , Adenine - Purines

Answer: A

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2037

1. In a DNA molecule

A. There are two strands which run antiparallelone in 5' $\rightarrow$ 5'

B. The total amount of purine nucleotides and pyrimidine nucleotides is not always equal

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

D. Guanine, Adenine - Purines

Answer: D

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2038

1. Which purine base is found in RNA ?

A. Thymine

B. Uracil

C. Cytosine

D. Guanine

Answer: D

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2039

1. Similarity in DNA and RNA-

A. Both are polymers of nucleotides

B. Both have similar pyrimidines

C. Both have similar sugar

D. Both are genetic material in man

Answer: A

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2040

1. Length of one loop of B-DNA is :

A. 3.4 nm

B. 0.34 nm

C. 20 nm

D. 10 nm

Answer: A

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2041

1. Which of the following enzyme is used to join DNA fragments :

A. Ligase

B. Primase

C. DNA polymerase

D. Endonuclease

Answer: A

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2042

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

A. One DNA strand with the other DNA strand

B. One nucleoside with another nucleoside

C. One nucleotide with another nucleotide

D. One nitrogenous base with pentose sugar

Answer: C

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2043

1. ATP is

A. Nucleotide

B. Nucleoside

C. Nucleic acid

D. Vitamin

Answer: A

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2044

1. The role of an enzyme in a reaction is to/as

A. Decrease activation energy

B. Increase activation energy

C. Inorganic catalyst

D. None of these

Answer: A

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2045

1. Which of the following factor(s) do(es) not affect enzyme activity ?

A. Temperature

B. pH

C. Enzyme concentration

D. Product concentration

E. Substrate concentration

F. Activation energy

A. C only

B. C & D

C. D only

D. F only

Answer: D

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2046

1. A competitive inhibitor of succinic dehydrogenase is

A. Malate

B. Malonate

C. Oxaloacetate

D. Both (2) & (3)

Answer: D

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2047

1. Which of the following is a typical example of feedback inhibition ?

A. Cyanide and cytochrome reaction

B. Sulpha drugs and folic acid synthesizer bacteria

C. Allosteric inhibition of hexokinase by glucose 6-phosphate

D. Reaction between succinic dehydrogenase and succinic acid

Answer: C

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2048

1. Which factor is responsible for inhibition of enzymatic process during feedback ?

A. Substrate

B. Enzyme

C. End product

D. Temperature

Answer: C

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2049

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

A. Decrease in $V_{\max}$ and K_m

B. Unchanged $V_{\max}$ and decrease in K_m

C. Unchanged $V_{\max}$ and increase in K_m

D. Increase in $V_{\max}$ and K_M is

Answer: C

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2050

1. The Michaelis constant K_m is

A. Numerically equal to $\frac{1}{2}V_{\max}$

B. Dependent on the enzyme concentration

C. Numerically equal to the substrate concentration that gives half maximal velocity

D. Increased in the presence of non-competitive inhibitor

Answer: C

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2051

1. If an enzyme has been given the EC code 5.2.1.7, it is likely to be involved in

A. Digestion

B. Redox reaction

C. Isomerization

D. Molarcular breakdown

Answer: C

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2052

1. Prosthetic group is a part of holoenzyme. It is

A. Loosely attached organic part

B. Loosely attached inorganic part

C. Non-protein organic part firmly attached with apoezyme

D. None of these

Answer: C

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2053

1. Which of the following has carbohydrate as prosthetic group ?

A. Glycoprotein

B. Chromoprotein

C. Lipoprotein

D. Nucleoprotein

Answer: A

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2054

1. Mark the mismatched pair.

A. Cellulose : Unbranched polymer with β,1-4 glycosidic linkage

B. Cellophone : Cellulose xanthate

C. Carboxypetidase : Exopeptidase, Mg^{2+} acts as a co-factor

D. Aminopeptidase : Exopeptidase, cleaves the peptide bond at N-terminal end

Answer: C

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Assignment Section C Questions Asked Prior To Medical Ent Exams 2055

1. Apoenzyme is

A. Always a protein

B. Often s metal

C. Always an inorganic compound

D. Often a vitamin

Answer: A

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Assignment Section D Assertion Reason Type Questions

1. A : Cofactor of an enzyme may be a prosthetic group.

R : NAD derived from niacin is a co-enzyme.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statements but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4)

Answer: B

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2. A : Linolenic acid is an essential fattly acid.

R : Linolenic acid cannot be synthesised in human beings.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statements but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4)

Answer: A

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3. A : Hormones are not enzymes, but they can stimulate the release of enzymes.

R : Hormones are used up in metabolism, but enzymes can act over and over again.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statements but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4)

Answer: B

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4. A : Tertiary structure of protein molecules makes them biologically active.

R : It is native configuration of protein molecules maintained by multiple convalent bonds only.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statements but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4)

Answer: C

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5. A : Dextrins are intermediate polysaccharides formed during hydrolysis of starch into sugar.

R : Ascorbic acid is a sugar derivative.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statements but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4)

Answer: B

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6. A : Non-competitive inhibitors have no effect on $V_{\max}$.

R : In non-competitive inhibition, inhibitor and substrate bind at same sites on the enzyme.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statements but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4)

Answer: D

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7. A : The polypeptide coil of collagen helix is strengthened by the estabilishment of hydrogen bond between $>NH$-group of glycine residue of each strand with -CO group of other two strand.

R : In collagen helix locking effect also occurs with the help of proline and hydroxyproline amino acid.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statements but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4)

Answer: B

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8. A : Allosteric enzymes do not show a typical Michaelis Menten constant or behaviour.

R : All enzymes work at same pH.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statements but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4)

Answer: C

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9. A : α amylase of wheat endosperm has 16 isoenzymes.

R : In competitive inhibition $V_{\max}$ decreases.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statements but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4)

Answer: C

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10. A : Tertiary structure of protein is absoulutely necessary for many biological actitives of proteins.

R : In protein, only right handed helices are observed.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statements but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4)

Answer: B

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