# BIOLOGY

# BOOKS - MODERN PUBLICATION

# BIOMOLECULES

## Exercise

**1.** Name the bio-molecule present in the acid insoluble fraction.

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**2.** Which type of bonds are found in the proteins and polysaccharides.

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**3.** Which type of bonds stabilize the tertiary structure of a protein?

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**4.** name two transport proteins.

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**5.** List one difference between homopolysaccharide and heteropolysaccharide.

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**6.** Why cellulose, Starch and glycogen are commonly called glucans?

Watch Video Solution

**7.** Why is chittin also called fungal cellulose?

Watch Video Solution

**8.** Give the function of heparin.

Watch Video Solution

**9.** Which types of bonds are found in nucleic acids?

Watch Video Solution

**10.** What do you mean by antiparallel nature of two DNA chains?

Watch Video Solution

**11.** Give one difference between B-DNA and Z-NA.

Watch Video Solution

**12.** What do you mean by statics

Watch Video Solution

**13.** Name two derived lipids.

Watch Video Solution

**14.** Define turn over number.

Watch Video Solution

**15.** Who proposed lock and key hypothesis of enzymes activity?

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**16.** What do you mean by +ve value of velocity or -ve value of velocity?

Watch Video Solution

**17.** Define denaturatin of enzymes.

Watch Video Solution

**18.** Give an example of non-competitive inhibitin.

Watch Video Solution

**19.** List one difference between prosthetic group and coenzyme.

Watch Video Solution

**20.** What are macromolecules? Give examples.

Watch Video Solution

**21.** Illustrate a glycosidic, peptide and a phospho-diester bond.

Watch Video Solution

**22.** What is meant by tertiary structure of proteins?

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

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**24.** Proteins have primary structure. If you are given a method to know which amino acid is at either of the two termini (ends) of a protein,

can you connect this information to purity or homogeneity of a protein?

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**25.** Find out and make a list of proteins used as therapeutic agents. Find other applications of proteins (e.g., Cosmetics etc.)

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**26.** Explain the composition of triglyceride.

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

Watch Video Solution

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

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

Watch Video Solution

**30.** Draw the structure of the amino acid, alanine.

Watch Video Solution

**31.** What are gums made of? Is Fevicol different?

Watch Video Solution

**32.** Find out a qualitative test for proteins, fats and oils, amino acids and test any fruit juice, saliva, sweat and urine for them.

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

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**34.** Describe the important properties of enzymes.

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**35.** If C and D are two events such that $C \subset D$ and $P(D) \neq 0$, then the correct statement among the following is :

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

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

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

D. Living organisms have more calcium in them inanimate

**Answer:**

**36.** Many elements are found in living organisations either free or in the form of compounds. One of the following is not , found in living organisation.

A. silicon

B. Magnesium

C. Iron

D. Sodium

**Answer:**

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**37.** Amino acids as the name suggest, have both an amino group and a carboxyl group in their structure.In addition all naturally occuring aminoacids (those which are found in proteins) are called L-aminoacids. From this,can you guess from which compound can the simplest aminoacid be made?

A. Formic acid

B. Methane

C. Phenol

D. Glycine

**Answer:**

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**38.** Frictional electricity

The electricity developed in bodies when they are rubbed with each other is called frictional electricity. There are two kinds of charges, namely positive and negative. Like charges

repel each other and unlike charges attract each other. when a glass rod is rubbed with silk cloth, glass rod becomes positively charged are silk acquires the same amount of negative charge. the concept of positive and negatice charges was introduced by Benjamin Franklin. The charge is always quantised and conserved in a system.

A body can be negatively charged by

A. Positively charged form

B. negatively charged

C. Neutral charged form

D. Zwitterionic form

**Answer:**

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**39.** Sugars are technically called carbohydrats, referring to the fact that their formulae are only multiple of C $(H_2O)$. Hexoses therefore have six carbons, twelve hydrogens and six oxygen atoms. Glucose is a hexose.

Choose form among the following another hexose.

A. Fructose

B. Erythrose

C. Ribulose

D. Ribose

**Answer:**

**40.** Amongst the following compounds, identify which are insoluble, partially soluble and highly soluble in water: formic acid

A. Nitrogen base

B. Adenine

C. Sugar phosphate

D. Nucleotide

**Answer:**

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**41.** when we homogenise any tissue in an acid the acid soluble pool represents:

A. Cytoplasm

B. Cell membrane

C. Nucleus

D. Mitochondria

**Answer:**

Watch Video Solution

**42.** The most aboundant chemical in living organisms could be:

A. Protein

B. Water

C. Sugar

D. Nucleic acid

**Answer:**

Watch Video Solution

**43.** a homopolymer has only one type of building block called monomer repeated "n" number of times. A heteropolymer has more than one type monomer. Proteins are heteropolymer made of aminoacid. While a nucleic acid like DNA and RNA is made of only 4 types of nucleotide monomers, proteins are made of:

A. 20 types of monomers

B. 40 types of monomers

C. 3 types of monomers

D. only one type of monomer

**Answer:**

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**44.** Proteins perform many physiological functions.For example, some finction as enzymes. One of the following represent an additional function that some proteins discharge:

A. Antibiotics

B. Pigments conferring colour to skin

C. Pigments making colours of flowers

D. Hormones

**Answer:**

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**45.** Glycogen is a homopolymer made of:

A. Glucose units

B. Galactose units

C. Ribose units

D. Aminoacids

**Answer:**

Watch Video Solution

**46.** The number of ends in a glycogen molecule would be:

A. Equal to the number of branches plus one

B. Equal to the number of branches points

C. one

D. Two, one on the left side and another on the right side

**Answer:**

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**47.** A pure protein should normally have:

A. Two ends

B. One end

C. Three ends

D. No ends

**Answer:**

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**48.** Enzymes are biocatalysts. They catalyse biochemical reactions. In general they reduce activation energy of reactions. Many physico-chemical processess are enzyme mediate.

Some examples of enzyme mediated reactions are given below. Tick the wrong entry:

A. Disssolving $CO_2$ in water

B. Untwinig the two strands of DNA

C. Hydrolysis of Sucrose

D. Formation of Peptide bond

**Answer:**

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

Vitamin C.....

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**50.** Select an apropriate chemical bond among ester bond, glycosidic bond. Peptide bond and hydrogen bond and write against each of the following:

fats

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**51.** Write the name of any one amino acid, sugar, nucleotide and fatty acid.

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**52.** Reaction given below is catalysed by oxidoreductase between two substrates A and A', complete the reaction.

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**53.** How are prosthetic groups different from co-factors?

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**54.** Glycine and Alanine are different with respect to one substituent on the $\alpha$ -carbon. What are the other common substituent groups?

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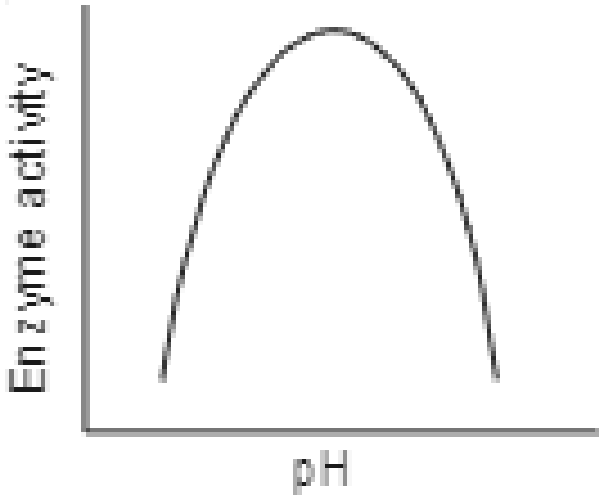
**55.** Starch, cellulose, Glycogen, Chitin are polysaccharides found among the following. Choose the one appropriate and write against each.

Liver .....

Watch Video Solution

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

depicted in the curve below: explain briefly.

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**57.** Is rubber a primary metabolite or a secondary metabolite?

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**58.** Schematically represent primary, secondary and tertiary structures of a hypotherical polymer say for example a protein.

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**59.** Nucleic acids exhibit secondary structure, justify with example.

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**60.** Comment on the statement "living state is a non-equilibrium steady-state to be able to perform works."

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**61.** Formation of enzyme-substrate complex (ES) is the first step till the formation of product.

Watch Video Solution

**62.** What are different classes of enzymes? Explain any two with type of reaction they catalyse.

Watch Video Solution

**63.** Nucleic acids exhibit secondary structure,Describe through Watson- Crick Model.

Watch Video Solution

**64.** What is the difference between nucleoside and nucleotide ?

Watch Video Solution

**65.** Describe various forms of lipids with a few examples.

Watch Video Solution

**66.** Explain the composition of triglyceride.

Watch Video Solution

**67.** Name the chemical used for grinding of animal tissue for chemical analysis organic compounds.

Watch Video Solution

**68.** Name the (a) Fruit sugar (b) Blood sugar (C) Milk sugar (d) Cane sugar

Watch Video Solution

**69.** Name the amino acid involved in urea cycle.

Watch Video Solution

**70.** What are prostaglandins?

Watch Video Solution

**71.** Sucrose is a non-reducing sugar. maltose and lactose are reducing sugars. why?

Watch Video Solution

**72.** Write two uses of cellulose.

Watch Video Solution

**73.** Which homopolysaccharide is called animal starch?

Watch Video Solution

**74.** Name the polymer of fructose.

Watch Video Solution

**75.** Name one heteropolysaccharide.

Watch Video Solution

**76.** Name of the following:

who proposed the lock and key theory?

Watch Video Solution

**77.** What is the chemical nature of enzymes ?

Watch Video Solution

**78.** What would happen if gravity suddenly disappears?

Watch Video Solution

**79.** why are starch and glycogen more suitable than glucose as storage products.

Watch Video Solution

**80.** How do proteins act as carrier proteins?

Watch Video Solution

**81.** What is cholesterol ? name the two forms of cholesterol.

Watch Video Solution

**82.** What are pyrimidines?

Watch Video Solution

**83.** What is peptide bond and ester bond?

Watch Video Solution

**84.** Name the essential fatty acids. Why are they so called?

Watch Video Solution

**85.** What are polyunsaturates?

Watch Video Solution

**86.** What are globular proteins?

Watch Video Solution

**87.** Describe briefly the effect of temperature and pH on enzyme activity.

Watch Video Solution

**88.** List one difference between prosthetic group and coenzyme.

Watch Video Solution

**89.** What are the factors which affect the action of enzyme ?

Watch Video Solution

**90.** State difference between the $\alpha$-helix and $\beta$ -pleated sheet configuration.

Watch Video Solution

**91.** Describe the formation of

Coal

Watch Video Solution

**92.** Differentiate between primary metabolites and secondary metabolites.

Watch Video Solution

**93.** What are gums made of? Is Fevicol different?

Watch Video Solution

**94.** What is the Lewis concept of acids ?

Watch Video Solution

**95.** Write the function of polysaccharides.

Watch Video Solution

**96.** Write six differences between DNA and RNA.

Watch Video Solution

**97.** What are different classes of enzymes? Explain any two with type of reaction they catalyse.

Watch Video Solution

**98.** Discuss tertiary level sructure of proteins.

Watch Video Solution

**99.** Write " True" or "False"

Proteins are one of the most diverse molecules of cell.

Watch Video Solution

**100.** Write " True" or "False"

Oval and eccentric starch grains found in maize.

Watch Video Solution

**101.** Write " True" or "False"

FMN is related with vitamin $B_2$

Watch Video Solution

**102.** Write " True" or "False"

Adrenylic acid is an acidic amino acid.

Watch Video Solution

**103.** Write " True" or "False"

Tryptophan takes part in the formation of vitamin nicotinamide.

Watch Video Solution

**104.** Write " True" or "False"

Cephalin is found in liver.

Watch Video Solution

**105.** Write " True" or "False"

In a nucleotide, purine or pyrimidine nitrogenous base is joined by deoxyribose sugar which is further linked to phosphate.

Watch Video Solution

**106.** Write " True" or "False"

Bees wax consists of palmitic acid and myricyl alcohol.

Watch Video Solution

**107.** Write " True" or "False"

As compared to carbohydrate, the amount of oxygen is high in lipids.

Watch Video Solution

**108.** Write " True" or "False"

Gliadin protein found in wheat has the structure $C_{685}H_{108}N_{195}O_{211}S_5$

Watch Video Solution

**109.** Write " True" or "False"

Glucose, fructose and lactose are isomers having a formula $C_6H_{12}O_6$

Watch Video Solution

**110.** Write " True" or "False"

Amino acids can be acidic, basic or neutral.

Watch Video Solution

**111.** Write " True" or "False"

Oil dissolves in water.

Watch Video Solution

**112.** Write " True" or "False"

Z-DNA has left handed helical structure as against right handed helical structure of B-DNA

Watch Video Solution

**113.** Write " True" or "False"

Waxes are long chain compounds belonging to class of esters.

Watch Video Solution

**114.** Write " True" or "False"

Thyroxine is derived from tyrosine.

Watch Video Solution

**115.** Removal of amino group from an amino acid is called:

Watch Video Solution

**116.** Fats are made of .....and .....

Watch Video Solution

**117.** .....and.....are purine nitrogenous bases.

Watch Video Solution

**118.** .....is cofactor in enzyme cytochrome oxidase.

Watch Video Solution

**119.** Fill in the blanks:

A true fat with three molecules of fatty acids is called..... .

Watch Video Solution

**120.** Three pyrimidines are thymine, cytosine and.....

Watch Video Solution

**121.** Fill in the blanks:

DNA has .....instead of uracil.

Watch Video Solution

**122.** rRNA is associated with.....

Watch Video Solution

**123.** Keratin is a.....protein.

Watch Video Solution

**124.** Fill in the blanks:

Double helical structure is found in..... .

Watch Video Solution

**125.** The carbohydrates molecule cellulose is a.....

Watch Video Solution

**126.** Fill in the blanks:

The double helix model of DNA was proposed by.....and..... .

Watch Video Solution

**127.** .....and.....are storage polysaccharides.

Watch Video Solution

**128.** When amino acid chain is arranged like a coil, it is calles on $\alpha$.....

Watch Video Solution

**129.** Chitin is a polysaccharides found in the .....of crabes and prawn etc.

Watch Video Solution

**130.** The kind of protein which can enhance the efficiency of a biochemical reaction is called an.....

Watch Video Solution

**131.** The substances which stop or slow down the reaction are called.....

Watch Video Solution

**132.** A protein molecules has at least 200t to 300.....linkages.

Watch Video Solution

**133.** When the enzymes with slightly different molecular structure can also perform the identical activities, they are called as.....

Watch Video Solution

**134.** Fill in the blanks:

When the production of the cell is inhibited by its own metabolities, this control is called as..... .

Watch Video Solution

**135.** Biochemical reactions are regulated by catalysts called.....

Watch Video Solution

**136.** A vitamin is often associated as a .....with an enzyme.

Watch Video Solution

**137.** The molecules on which enzymes act are known as.....

Watch Video Solution

**138.** Fill in the blanks:

Enzymes which breakdown comounds without the involvement of water are called..... .

Watch Video Solution

**139.** Fill in the blanks:

A compound with almost similar structure to the substrate can act as a ..... .

Watch Video Solution

**140.** Fill in the blanks:

The function of enzyme is to lower the.....of a biochemical reaction.

Watch Video Solution

**141.** Fill in the blanks:

Enzymatic activity stops due to.....of enzymes at very high temperature.

Watch Video Solution

**142.** The enzyme..... catalyse the formation of glucose-6-phosphate from glucose and ATP.

Watch Video Solution

**143.** .....catalyse covalent bonding between two molecules to form a large molecule.

Watch Video Solution

**144.** Choose the correct alternative

Lyases/Ligases perform breakdown reaction

Watch Video Solution

**145.** Choose the correct alternative

Apoenzyme/coenzyme is the non-protein part of conjugate enzyme.

Watch Video Solution

**146.** Choose the correct alternative

Nucleoside is basic/acidic in reaction.

Watch Video Solution

**147.** Choose the correct alternative

Proenzymes are active/inactive enzyme precursors.

Watch Video Solution

**148.** Choose the correct alternative

Glutelins/Prolamins are soluble in dilute alkali or acid.

Watch Video Solution

**149.** Choose the correct alternative

Active site induced fit theory is static/dynamic

Watch Video Solution

**150.** Choose the correct alternative

Source of lactose is milk/germinating seeds.

Watch Video Solution

**151.** Which mineral deficiency causes goitre in man?

Watch Video Solution

**152.** Name two steroid hormones.

Watch Video Solution

**153.** What are steroids?

Watch Video Solution

**154.** Which type of bonds are present between the nucleotides in DNA?

Watch Video Solution

**155.** What are essential amino acids ? Give two examples.

Watch Video Solution

**156.** Which proteins help in night vision and colour vision?

Watch Video Solution

**157.** What is the basic structural unit of chitin?

Watch Video Solution

**158.** Where we can find chitin?

Watch Video Solution

**159.** Name any two sulphur containing amino acids.

Watch Video Solution

**160.** Which generally engineered microbe was used for nitrogen fixation by incorporating nif gene in cereals

Watch Video Solution

**161.** C-O-C bond angle in ethers is higher than H-O-H bond angle in water through O is $sp^3$ - hybridisedin both the cases.

Watch Video Solution

**162.** Why does water have high boiling point?

Watch Video Solution

**163.** Define Michaelis constant (Km) value of an enzyme.

Watch Video Solution

**164.** Give the term for the energy required to initiate a biochemical reaction.

Watch Video Solution

**165.** What is peptide bond ? Give one example.

Watch Video Solution

**166.** Write two functions of waxes.

Watch Video Solution

**167.** Give technical words for acid-soluble and acid-insoluble fractions.

Watch Video Solution

**168.** Give two example of two acidic amino acids.

Watch Video Solution

**169.** Give three examples of homo polysaccharides

Watch Video Solution

**170.** Glycogen is called animal starch

Watch Video Solution

**171.** Name the sugar present in RNA.

Watch Video Solution

**172.** Name the nitrogen bases of DNA.

Watch Video Solution

**173.** What do you mean by antiparallel nature of two DNA chains?

Watch Video Solution

**174.** List one difference between prosthetic group and coenzyme.

Watch Video Solution

**175.** Name the inactive form of pepsin.

Watch Video Solution

**176.** Give an example of non-competitive inhibitin.

Watch Video Solution

**177.** Who coined the term cell ?

Watch Video Solution

**178.** Name the bio-molecule present in the acid insoluble fraction.

Watch Video Solution

**179.** What do you mean by Zwitter ionic nature of amino acids?

Watch Video Solution

**180.** In which ratio, C H and O are found in the carbohydrates ?

Watch Video Solution

**181.** Name three components of a nucleotide.

Watch Video Solution

**182.** Give examples of protiens which help in blood clotting at injury.

Watch Video Solution

**183.** List four functions of protein and name one proteins which perform these functions.

Watch Video Solution

**184.** Proteins are known as biological polymers. Explain.

Watch Video Solution

**185.** why are starch and glycogen more suitable than glucose as storage products.

Watch Video Solution

**186.** Differentiate acidic and basic proteins.

Watch Video Solution

**187.** What are xylan and inulin?

Watch Video Solution

**188.** What is lignification?

Watch Video Solution

**189.** Do you find that all living beings need the same kind of food?

Watch Video Solution

**190.** Explain the terms holozyme and isozyme.

Watch Video Solution

**191.** Distinguish between apoenzyme and coenzyme.

Watch Video Solution

**192.** Distinguish between co-enzyme and co-factor.

Watch Video Solution

**193.** Name the three major classes of digestive enzymes?

Watch Video Solution

**194.** Expand IUB and write about its most significant contribution.

Watch Video Solution

**195.** How ferment and enzymes differ?

Watch Video Solution

**196.** Disscuss the statement : 'Organisms have biochemical adaptability to environment'

Watch Video Solution

**197.** Can a chemical reaction take place without enzyme? Comment.

Watch Video Solution

**198.** Whjat is a nucleotide?

Watch Video Solution

**199.** What is the difference between nucleoside and nucleotide ?

Watch Video Solution

**200.** Which type of bonds stabilize the tertiary structure of a protein?

Watch Video Solution

**201.** Define Michaelis constant (Km) value of an enzyme.

Watch Video Solution

**202.** How do you explain amphoteric nature of amino acids?

Watch Video Solution

**203.** Distinguish between homopolysaccharides and heteropolysaccharides.

Watch Video Solution

**204.** How do phospholipids differ from triglycerides?

Watch Video Solution

**205.** What do you mean by holoenzymes?

Watch Video Solution

**206.** Define turn over number.

Watch Video Solution

**207.** Differentiate between anabolism and catabolism.

Watch Video Solution

**208.** State differences between primary and secondary structure of proteins.

Watch Video Solution

**209.** Distinguish between

Essential and non-essential amino acids

Watch Video Solution

**210.** What are derived fats? Give two examples.

Watch Video Solution

**211.** What is sewage? Differentiate between primary and secondary treatment of sewage.

Watch Video Solution

**212.** Give one difference between B-DNA and Z-NA.

Watch Video Solution

**213.** List the functions of amino acids.

Watch Video Solution

**214.** Write a note on allosteric enzymes.

Watch Video Solution

**215.** Differentiate between competitive and non-competitive inhibition.

Watch Video Solution

**216.** Define metabolism.

Watch Video Solution

**217.** Write the name of two bases that are highly soluble in water?

Watch Video Solution

**218.** Describe the formation of a nucleotide.

Watch Video Solution

**219.** Write the following in the form a+ib

$$\frac{(1+i)^2}{3-i}$$

Watch Video Solution

**220.** Explain the formation of mirage.

Watch Video Solution

**221.** Describe the internal structure of a dorsiventral leaf with the help of labelled diagrams.

Watch Video Solution

**222.** Write short notes on

Steroids

Watch Video Solution

**223.** Write short notes on

Wax.

Watch Video Solution

**224.** Give the biological importance of polysacharides.

Watch Video Solution

**225.** Explain the composition of glycogen.

Watch Video Solution

**226.** Give a brief account of effect of substance concentration on enzyme activity.

 Watch Video Solution

**227.** Describe the mechanism of enzyme action.

 Watch Video Solution

**228.** Describe the structure of a flower

 Watch Video Solution

**229.** Enumerate three types of non-genetic RNAs

Watch Video Solution

**230.** Define metabolism. Describe two types of metabolism. What is the role of enzymes in metabolism.

Watch Video Solution

**231.** Give the biological importance of:

Myoglobin

Watch Video Solution

**232.** What are oligosaccharides? Give the structure of sucrose and lactose.

Watch Video Solution

**233.** List the functions of lipids in a biological system.

Watch Video Solution

**234.** Describe the basic structure, types and biological importance of amino acids.

Watch Video Solution

**235.** Describe the types and biological importance of monosaccharides.

Watch Video Solution

**236.** Describe the formation of a nucleotide.

Watch Video Solution

**237.** Write the structural formula of propane?

Watch Video Solution

**238.** Proteins can be classified into two types on the basis of their molecular shape i.e., fibrous proteins and globular proteins. Examples of globular proteins are -

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**239.** Monosaccharides are linked by which bond in a polysaccharides?

Watch Video Solution

**240.** 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:**

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

A. Disaccharide

B. Monosaccharide

C. Polysaccharide

D. Dipeptide

**Answer:**

 Watch Video Solution

**242.** Feed back inhibition of an enzymatic reaction is caused by

A. Substrate

B. Enzyme

C. End product

D. Rise in temperature.

**Answer:**

Watch Video Solution

**243.** Is it possible that the velocity of an object be in a direction other than the direction of acceleration?

A. Compettitive inhibitor

B. Non-competitive inhibitor

C. Catalytic inhibitor

D. Allosteric modulator/inhibitor

**Answer:**

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**244.** The enzyme which combines with non-protoein part to form a functional enzyme is known as

A. Co-enzyme

B. Holoenzyme

C. Apoenzyme

D. Prosthetic group

**Answer:**

Watch Video Solution

**245.** A complex polysaccharide produced from sucrose by the bacterium Leuconastoc mesenteriodes is :

A. chitin

B. Starch

C. Cellulose

D. Dextran

**Answer:**

Watch Video Solution

**246.** Which of the following enzyme is used in making detergent?

A. Amylase

B. Cellulase

C. Protease

D. APeptidase

**Answer:**

 Watch Video Solution

**247.** Which type of enzyme are present in the lysosomes?

A. Acid phosphate

B. Basuc phosphatase

C. Oxidoreductase

D. Lyases

**Answer:**

Watch Video Solution

**248.** 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 exclsively synthesized in the body of a living organism at present

D. Help in regulating metabolism.

**Answer:**

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**249.** Carbohydrates are most abundant biomolecules 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:**

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**250.** A competitive inhibitor of succinate dehydrogenase is

A. $\alpha$-ketoglutarate

B. Malate

C. Malonate

D. Oxaloacetate

**Answer:**

Watch Video Solution

Watch Video Solution

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

A. Guanine, Adenine -Purines

B. Adenine, Thymine - Purines

C. Thymine, Uracil - Pyrimidines

D. Uracil, Cytosine-Pyrimidines

**Answer:**

Watch Video Solution

Watch Video Solution

**252.** Which of the following is not caused by deficiency of mineral?

A. Chlorosis

B. Etiolation

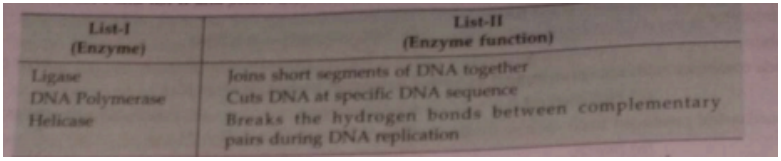
C. Shortening of internodes

D. Necrosis

**Answer:**

Watch Video Solution

**253.** Match the following



| List-I (Enzyme) | List-II (Enzyme function) |
|---|---|
| Ligase | Joins short segments of DNA together |
| DNA Polymerase | Cuts DNA at specific DNA sequence |
| Helicase | Breaks the hydrogen bonds between complementary pairs during DNA replication |

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**254.** D is a $3 \times 3$ diagonal matrix. Which of the following

statements are not true?

A. Glycerol is a 3-carbon alcohol wiht 3-OH groups which act as binding sites

B. Waxes are esters formed between a long chain alcohol and saturated fatty acids

C. Term protein was coined by Johannes Mulder

D. Agar is a indispensable polysaccharide and is a complex olymer of glucose and sulphur-containing carbohydrates

**Answer:**

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**255.** What is feedback inhibition?

A. Cyanide action on cytochromes

B. Allosteric inhibition of hexokinase by Glucose 6-P

C. Inhibition of succinic dehydrogenase by malonate

D. Sulpha drug on folic acid synthesizing bacteria

**Answer:**

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**256.** List the number of base pairs in:

haploid content of human DNA.

A. $33{,}10^{\circ} bp$

B. $3.310^{\circ} kbp$

C. $4.610^{6} bp$

D. 48502 bp

**Answer:**

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**257.** Most common monomer of carbohydrates is

A. Glucose

B. Fructose

C. sucrose

D. Maltose

**Answer:**

Watch Video Solution

**258.** Which one of the following is ss RNA?

A. TMV

B. $T_2$-bacteriophage

C. Pox virus

D. $\phi$174

**Answer:**

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**259.** Uracil is present in RNA at the place of

A. Adenine

B. Guanine

C. Cytosine

D. Thymine

**Answer:**

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**260.** The enzyme that cuts DNa is

A. DNA-polymerase

B. DNA-lyase

C. DNA-ligase

D. Restriction endonuclease

**Answer:**

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**261.** Which of the following is named for DNA produced from RNA?

A. A-DNA

B. B-DNA

C. C-DNA

D. Z-DNA

**Answer:**

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**262.** Quaternary structure of protein

A. Consists of four subunits

B. May be either $\alpha$ or $\beta$-helix

C. Is unrelated to the function of protein

D. Is dictated by the primary structure

**Answer:**

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**263.** Name any two sulphur containing amino acids.

A. Proline

B. Methionine

C. Aspartic acid

D. Tryptophan

**Answer:**

 Watch Video Solution

**264.** Which of the following carbohydrates is not a disaccharide?

A. Maltose

B. Lactose

C. Sucrose

D. Galactose

**Answer:**

Watch Video Solution

**265.** What are the uses of interconversion of matter ?

A. Ligases

B. Lyases

C. Hydrolases

D. Isomerases

**Answer:**

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**266.** Describe lock and key theory of enzyme action.

A. May be destroyed or resymthesised several times

B. Interacts with a specific type of subtrate molecule

C. Reacts at identical rates under all conditions

D. Forms a permanent enzye substrate complex.

**Answer:**

Watch Video Solution

**267.** The effectiveness of an enzyme is affected least by

A. Temperature

B. Concentration of substrate

C. Original activation energy of the system

D. Concentration of the enzyme

**Answer:**

Watch Video Solution

**268.** Starch is a polymer of

A. Glucose

B. Fructose

C. Sucrose

D. Maltose

**Answer:**

 Watch Video Solution

**269.** Table sugar is

A. Sucrose

B. Glucose

C. Fructose

D. Lactose

**Answer:**

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**270.** Human proteins can be produced in the milk or semen of farm animals. True or False?

A. True

B. False, proteins cannot be produced in milk

C. False, proteins cannot be produced in semen

D. False, animals are not used for protein production

**Answer:**

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**271.** ..... is a globular protein of - 6kDa consisting of 51 amino acids, arranged in 2 polypeptide chains held together by disulphide bridge.

A. Insulin

B. Keratin

C. Glucagon

D. Fibrignogen

**Answer:**

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**272.** Which is not correct

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

B. Malonate is a competitive inhibitor os succinic dehydrogenase

C. Substrate binds with enzyme at its active site

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

**Answer:**

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**273.** Which one of the following statements is not correct?

A. Retinal is a dervative of vitamin C

B. Rhodopsin is a purplish red protein present in rods only

C. Retinal is the light absorbing protein of visual photopigment

D. In retina, the rods have the photopigment rhodopsin, while cones have three different photopigments

**Answer:**

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

A. Lactose

B. Ribose-5-phosphate

C. Maltose

D. sucrose

**Answer:**

Watch Video Solution

**275.** The catalytic efficiency of two dfferent enzyes can be compared by the

A. Molecular size of the enzymes

B. pH optimum values

C. $K_m$ values

D. Formation of the product

**Answer:**

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**276.** Which of the folloiwng correct pair of pyrimidine bases?

A. Adenine and thymine

B. Adenine and guanine

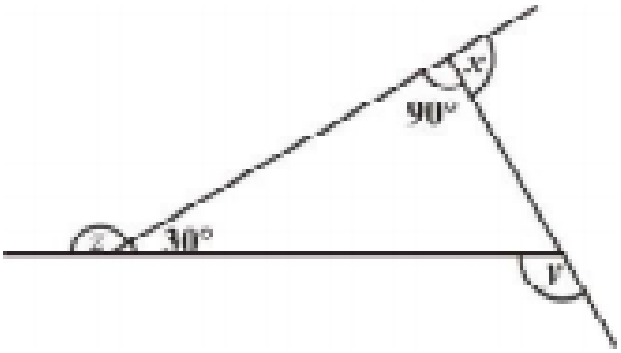
C. Thymine and cytosine

D. Guanine ad cytosine

**Answer:**

Watch Video Solution

**277.** Find x+y+z




A. Adenylic acid

B. uracil

C. Cholesterol

D. Adenosine

**Answer:**

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**278.** This is a wax

A. Palmitic acid

B. Ethyl palmitata

C. Hexacosyl palmitate

D. Sodium stearate

**Answer:**

Watch Video Solution

**279.** A tripeptide contains

A. 3 amino acids

B. 4 amino acids

C. 6 amino acids

D. 2 amino acids

**Answer:**

Watch Video Solution

**280.** How many phosphodiester bonds are threre in ATP?

A. 3

B. 2

C. 1

D. 0

**Answer:**

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

A. Amino acids in a polypeptide

B. Nucleotide in a nucleic acid

C. Fatty acids in a diglyceride

D. Monosaccharides in a polysaccharides

**Answer:**

Watch Video Solution

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

A. Pyruvic acid

B. Acetyl CoA

C. Glucose 6-6 phosphates

D. Fructose 1,6-bisphosphate

**Answer:**

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**283.** A fat molecule consists of

A. Three glycerol molecules and one fatty acid molecule

B. One glycerol and three fatty acied molecules

C. One glycerol and one fatty acid molecule

D. Three glycerol and three fatty acid molecules

**Answer:**

 Watch Video Solution

**284.** These questions consist of two statement each, printed as Assertion and Reason. While answering these questions, you are required to choose any one of the following four responses. A. If both Assertion and Reason are

true and Reason is a correct explanation of the Assertion. B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion. C. If Assertion is true but Reason is false. D. If both Assertion and Reason are false.

Assertion: There is large deposition of lignin in the lumen of tracheids. Reason. The lumen of tracheids is narrow.

A. A

B. B

C. C

D. D

**Answer:**

Watch Video Solution

**285.** These questions consist of two statement each, printed as Assertion and Reason. While answering these questions, you are required to choose any one of the following four responses. A. If both Assertion and Reason are true and Reason is a correct explanation of

the Assertion. B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion. C. If Assertion is true but Reason is false. D. If both Assertion and Reason are false.

Assertion: Tendons are very tough and ineleastic. Reason. Tendons join the muscles to the bone

A. A

B. B

C. C

D. D

**Answer:**

Watch Video Solution

**286.** These questions consist of two statement each, printed as Assertion and Reason. While answering these questions, you are required to choose any one of the following four responses. A. If both Assertion and Reason are true and Reason is a correct explanation of

the Assertion. B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion. C. If Assertion is true but Reason is false. D. If both Assertion and Reason are false.

Assertion: Tendons are very tough and ineleastic. Reason. Tendons join the muscles to the bone

A. A

B. B

C. C

D. D

**Answer:**

Watch Video Solution

**287.** These questions consist of two statement each, printed as Assertion and Reason. While answering these questions, you are required to choose any one of the following four responses. A. If both Assertion and Reason are true and Reason is a correct explanation of

the Assertion. B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion. C. If Assertion is true but Reason is false. D. If both Assertion and Reason are false.

Assertion: Vascular cambium is considered as lateral. Reason. It gives rise to lateral shoots.

A. A

B. B

C. C

D. D

**Answer:**

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**288.** Give the reasons for the following statement:

Nucleotides are acidic in nature.

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**289.** Give the reasons for the following statement:

GC pair of DNA is more stable than AT pair.

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**290.** Give the reasons for the following statement:

At high temperature, the enzymes stop functioning.

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**291.** Give the reasons for the following statement:

Cholesterol and its esters are deposited in the arteries.

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**292.** Give the reasons for the following statement:

In human beings some essential amino acids are required.

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**293.** Give the reasons for the following statement:

the high boiling point of water is advantageous to living organisms.

Watch Video Solution

**294.** Give the reasons for the following statement:

Apoenzyme alone cannot function.

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**295.** Give the reasons for the following statement:

Co-enzyme can function in association with an apoenzyme.

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**296.** Give the reasons for the following statement:

End products are generally not produced more than their requirements.

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**297.** Give the reasons for the following statement:

Enzymes generally have different pH but same temperature optima.

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**298.** Not the relationship between the first two words and suggest a suitable word for the fourth place:

amino acid : protein : : nucleotides : .....

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**299.** Not the relationship between the first two words and suggest a suitable word for the

fourth place:

plants : starch : : mammals : .....

Watch Video Solution

**300.** Not the relationship between the first two words and suggest a suitable word for the fourth place:

$\alpha$-helix : protein : : double helix .....

Watch Video Solution

**301.** Note the relationship between the first two words and suggest a suitable word for the fourth place:

protein : peptide bonds : : polysaccharide: .....

Watch Video Solution

**302.** Not the relationship between the first two words and suggest a suitable word for the fourth place:

microbiomolecules : filtrate : : macrobiomolecules : .....

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**303.** Not the relationship between the first two words and suggest a suitable word for the fourth place:

anabolism : photosynthesis : : catabolism : .....

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**304.** Not the relationship between the first two words and suggest a suitable word for the fourth place:

primary metabolite : amino acids : : secondary metabolite: .....


**305.** Note the relationship between the first two words and suggest a suitable word for the fourth place:

hexokinase : transferase : : amylase : .....

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**306.** Note the relationship between the first two words and suggest a suitable word for the fourth place:

$\alpha$-helix : secondary structure : : enzymes : .....

Watch Video Solution

**307.** Not the relationship between the first two words and suggest a suitable word for the fourth place:

purine : guanine :: pyrimidine : .....

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**308.** Which is protein in nature?

A. Cellulose

B. Terylene

C. Polythene

D. Silk and wool

**Answer:**

Watch Video Solution

**309.** Which is a reducing sugar?

A. Cellulose

B. Maltose

C. Sucrose

D. Starch

**Answer:**

Watch Video Solution

**310.** Among following natural, largest amount of cellulose is found in

A. wood

B. fruit pulp

C. Wheat straw

D. Cotton fibres

**Answer:**

Watch Video Solution

**311.** The polysaccharide formed from fructose monomers only is

A. Inulin

B. Liginin

C. Cellulose

D. Amylose

**Answer:**

Watch Video Solution

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

A. Coenzyme

B. Holoenzyme

C. Apoenzyme

D. Isoenzyme

**Answer:**

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**313.** One turn of the helix in a B-form of Dna is approximately

A. 20 nm

B. 0.34 nm

C. 3.4 nm

D. 2 nm

**Answer:**

Watch Video Solution

**314.** Anti parallel strands of a DNA molecule means that

A. One strand turns anti-clockwise

B. One strand turns clockwise

C. Phosphate groups of two Dna strands at their ends, share the same position

D. Phosphate groups at the start of two DNA strands are in opposite position.

**Answer:**

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**315.** In which one of the following sets of three items, each belong to the category mentioned against them?

A. Lysine, glycine, thiamine-amino acids

B. Myosin, oxytocin ad gastrin - hormones

C. Rennin, helicase and hyaluronidase - enzymes

D. Optic, occulomotr, vagus - sensory nerves

**Answer:**

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**316.** Chitin as exoskeleton is found in

A. Periplaneta

B. Ascaris

C. Pheretima

D. Hydra

**Answer:**

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**317.** Name the enzyme which converts glucose into alcohol.

A. Zymase

B. Diasatase

C. Invertase

D. Lipase

**Answer:**

Watch Video Solution

**318.** One mole of glucose on metabolism liberate how many kilo calories of energy?

A. 180

B. 80

C. 160

D. 380

**Answer:**


**319.** Phosphodiester bond is present in

A. ATP

B. ADP

C. C-AMP

D. None of these

**Answer:**

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**320.** In which virus, Dna is double stranded?

A. Hepatitis - A

B. Hepatitis-B

C. Hepatitis-C

D. Hepatitis-D

**Answer:**

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**321.** Name the protein which is the most abundant protein in the whole of the biosphere.

A. Lignin

B. Rubisco

C. Cellulose

D. Pectin

**Answer:**

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**322.** Essential amino acid which is synthesized by plant is

A. Phenylalanine

B. Leucine

C. Arginine

D. all of the above

**Answer:**

 Watch Video Solution

**323.** Hormone responsible for ovulation is

A. Zymase

B. Invertase

C. Sucrase

D. Maltase

**Answer:**

Watch Video Solution

**324.** How many of the twenty amino acids are essential amino acids for children?

A. 6

B. 8

C. 10

D. 7

**Answer:**

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**325.** The bacterial cell wall is made up of :

A. Cellulose

B. Hemicellulose

C. Both (a) and (c )

D.

**Answer:**

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**326.** AIDS is due to

A. Compettitive inhibitor

B. substrate concentration

C. Products of reaction

D. Enzyme concentration

**Answer:**

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**327.** Wha is the sweetness index of sucrose?

Watch Video Solution

**328.** Explain food storage polysaccharides.

Watch Video Solution

**329.** What is cellulose?

Watch Video Solution

**330.** What is purine?

Watch Video Solution

**331.** What is fat?

Watch Video Solution

**332.** What are waxes?

Watch Video Solution

**333.** A nitrogenous base is present in Rna but absent in Dna. Identify it. Where it exists?

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**334.** Arrange following carbohydrates in order of increasing complexity. Starch, Fructose, Maltose, Oligosaccharide, Triose.

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**335.** Proteins are known as biological polymers. Explain.

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**336.** How does the temperature effect on $pHvalue$?

Watch Video Solution

**337.** What are the different types of meristem?

Watch Video Solution

**338.** Differentiate between anabolism and catabolism.

Watch Video Solution

**339.** List one difference between homopolysaccharide and

heteropolysaccharide.

Watch Video Solution

**340.** Illustrate a glycosidic, peptide and a phospho-diester bond.

Watch Video Solution

**341.** Why does starch turns blue black with iodine?

Watch Video Solution

**342.** Give a brief account of Watson and Crick model of DNA.

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## Example

**1.** Nitrogenous bases present in DNA:

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**2.** Name the simplest amino acid in which the R-group is a hydrogen.

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**3.** Name the amino acid involved in urea cycle.

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**4.** Fill in the blanks

The anther is consisting of four _.

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**5.** Fill in the blanks

Rearing flower is called as _.

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**6.** Fill in the blanks: Most of food stored in the higher plants is in the form of_____but their cell wall of _____.

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**7.** What is ribozyme? Who discovered it and in which organism?

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**8.** Fill in the blanks:

The activity of enzyme inhibtied when modualtors bind to it is known as ..... inhibition.

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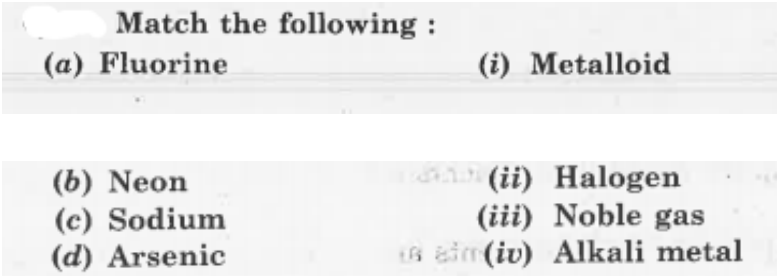
**9.** Match the following:



Match the following :

| | |
|---|---|
| (a) Fluorine | (i) Metalloid |
| (b) Neon | (ii) Halogen |
| (c) Sodium | (iii) Noble gas |
| (d) Arsenic | (iv) Alkali metal |

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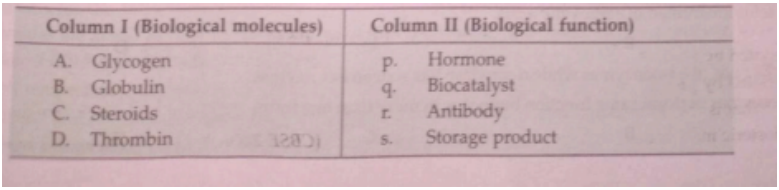
**10.** Match the following



| Column I (Biological molecules) | Column II (Biological function) |
|---|---|
| A. Glycogen | p. Hormone |
| B. Globulin | q. Biocatalyst |
| C. Steroids | r. Antibody |
| D. Thrombin | s. Storage product |

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**11.** Match the following

| Column-I | Column-II |
|---|---|
| (i) Triglyceride | (a) Animal hormones |
| (ii) Membrane lipid | (b) Feathers and leaves |
| (iii) Steroid | (c) Phospholipids |
| (iv) Wax | (d) Fat stored in the form of droplets |

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