



# **BIOLOGY**

## **BOOKS - ARIHANT NEET BIOLOGY (HINGLISH)**

### **BIOMOLECULES AND ENZYMES**

#### **Check Point 17 1**

**1. Cellular micromolecules are**

A. amino acids, water, minerals, nucleotides  
and sugar

B. glycogen, amino acids, minerals and  
nucleotides

C. water minerals, nucleic acids, amino  
acids and nucleotides

D. water minerals, nucleic acids, amino  
acids and nucleotides

**Answer: A**



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## 2. Reducing sugar

A. can reduce  $Cu^{2+}$  to  $Cu^{+}$

B. have a free keto group

C. have a free aldehyde group

D. All of these

**Answer: D**



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3. Reducing sugars have

- A. free aldehyde
- B. bound aldehyde
- C. free aldehyde or ketones
- D. bound ketone

**Answer: C**



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4.  $C_nH_{2n}O_n$  is the formula of

A. fatty acid

B. fat

C. glycerol

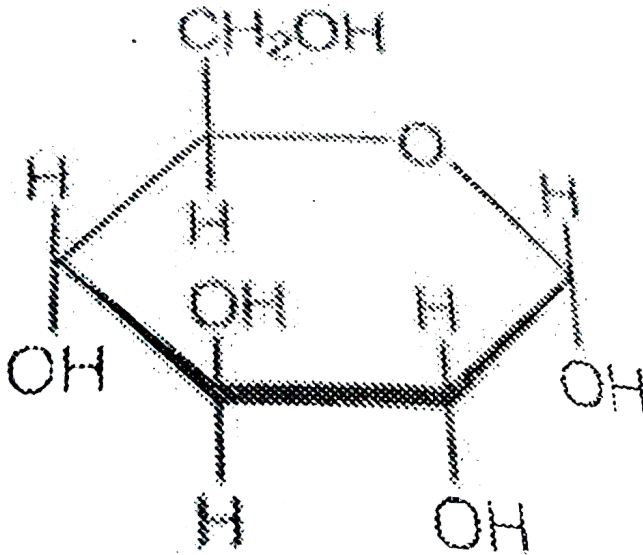
D. carbohydrate

**Answer: D**



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5. The molecule given below is



A. glucose

B. fructose

C. sucrose

D. galactose

**Answer: A**



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**6. Components of canesugar are**

- A. glucose and fuctose
- B. fuctose and galactose
- C. fructose and ribose
- D. glucose and glucose

**Answer: A**



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7. Which of the following is a disaccharide?

A. Ribose

B. Cellulose

C. Maltose

D. Glucose

**Answer: C**



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8. Cellobiose, a disaccharide is formed from the hydrolysis of

A. starch

B. Glycogen

C. cellulose

D. raffinose

**Answer: C**



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9. Lactose is a polysaccharide of

A. glucose and fuctose

B. glucose and glucose

C. glucose and galactose

D. galactose and galactose

**Answer: C**



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10. Levulose present in honey is a

A. disaccharide

B. glucose

C. fructose

D. pentose

**Answer: C**



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11. Starch and cellulose are the compounds of many units of

A. amino acids, water, minerals, nucleotides

and sugar

B. glycerol

C. simple sugar

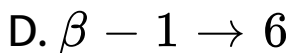
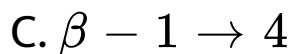
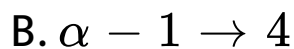
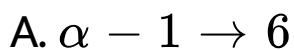
D. fatty acids

**Answer: C**



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



**Answer: B**



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**13.** A heteropolysaccharide is

A. glycogen

B. starch

C. cellulose

D. chitin

**Answer: D**



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14. Which one is homopolysaccharide?

A. starch

B. cellulose

C. glycogen and inulin

D. All of these

**Answer: B**



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15. Chitin is a structural polysaccharide and is polymerised from

A. glucose

B. ribose

C. deoxyribose

D. none of these

**Answer: A**



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## Check Point 17 2

1. The enormous diversity of protein molecules is due to the diversity of (mostly)

A. R-group of amino acid

B. amino group of amino acid

C. peptide bonds

D. amino acid sequences within protein molecules

**Answer: C**



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2. Which of the following are water soluble protein?

A. Globulins

B. Albumins

C. Albuminoids

D. prolamins

**Answer: B**



3. Among the following acidic amino acids are

- A. glycine and alanine
- B. valine and phenylalanine
- C. glycine and methionine
- D. glutamic acid and aspartic acid

**Answer: D**



4. The sulphur containing amino acid is

A. valine

B. leucine

C. methionine

D. histidine

**Answer: C**



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5. An example of aromatic amino acid is

A. tryptophan

B. tyrosine

C. phenylalanine

D. all of these

**Answer: D**



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6. A peptide bond formation between two amino acids is accompanied by the

A. loss of water

B. deamination

C. addition of water

D. Oligopeptides

**Answer: A**



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7. If all the peptide bonds of a protein are broken down, then what would remain?

- A. amino acids
- B. peptides
- C. Polypeptides
- D. Oligopeptides

**Answer: A**



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8. The example of scleroprotein are

A. keratin

B. Fibroin

C. both (a) and (b)

D. None of these

**Answer: C**



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9. Which of the following is a conjugated protein?

A. Mucin

B. MHC

C. Immunoglobulins

D. All of these

**Answer: D**



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10. The contractile protein in the human body is

A. actin

B. myosin

C. tubulin

D. all of these

**Answer: D**



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

A. collagen

B. insulin

C. trypsin

D. RuBisCO

**Answer: D**



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12. Primary structure of protein is due to

A. hydrogen bonds

B. peptide bonds

C. S-S linkage

D. ionic bonds

**Answer: B**



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13. A peptide chain assumes secondary structure through the formation of

A. interchain ionic bond

B. interchain hydrogen bond

C. peptide chain with peptide bonds only is a secondary structure itself

D. None of the above

**Answer: B**



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14. In  $\alpha$ -helix secondary structure, hydrogen bonds lie between amide group of one amino acid and carbonyl group of

A. 2nd amino acid

B. 3rd amino acid

C. 4th amino acid

D. 5th amino acid

**Answer: C**



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15. Which of the  $\beta$ -protein is stable in nature?

A.  $\beta$ -antiparallel

B.  $\beta$ -parallel

C.  $\alpha$ -pleated sheet

D. None of these

**Answer: A**



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16. Quaternary structure is present in

A. Haemoglobin

B. histone

C. globulin

D. elastin

**Answer: A**



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17. Quaternary structure is found in



- A. simple monomeric proteins
- B. conjugate monomeric proteins
- C. oligoproteins
- D. both (b) and (c)

**Answer: B**



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**18.** Each molecule of fat has

- A. one glycerol molecule

B. one fatty acid molecule

C. one glycerol molecule and three fatty acid molecules

D. all of the above

**Answer: C**



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**19.** Which of the following is a saturated fatty acid?

A. Stearic acid

B. Oleic acid

C. Linoleic acid

D. Linolenic acid

**Answer: A**



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**20. Fatty acids contain**

A. greater proportion of oxygen than in carbohydrates

B. no oxygen

C. equal oxygen in comparison to carbohydrates

D. less oxygen than in carbohydrates.

**Answer: D**



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## Check Point 17 3

1. All the living cells contain

A. DNA only

B. RNA only

C. Both (a) and (b)

D. ATP only

**Answer: C**



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2. Nitrogen bases are

A. homocyclic

B. heterocyclic

C. open chain hydrocarbons

D. all of the above

**Answer: B**



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3. Which are purines amongst the following

A. cytosine and thiamine

B. adenine and thiamine

C. adenine and guanine

D. cytosine and guanine

**Answer: C**



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4. Number of pyrimidines found in nucleotides is

A. three

B. two

C. one glycerol molecule and three fatty acid molecules

D. numerous

**Answer: A**



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5. Which pyrimidine base is not the part of RNA structure?

A. Thymine

B. Uracil

C. Cytosine

D. Guanine

**Answer: A**



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6. Nucleoside is composed of

A. ribose as pentose sugar

B. phosphoric acid

C. nitrogenous base

D. both (a) and (c)

**Answer: D**



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

A. carbon-5' of pentose sugar

B. carbon-1' of pentose sugar

C. carbon-2' of pentose sugar

D. none of the above

**Answer: B**



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8. The DNA molecule in eukaryotes is associated with

- A. histones
- B. protamines
- C. Both (a) and (b)
- D. None of these

**Answer: C**



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9. The number of hydrogen bonds between adenine and thymine in DNA molecule are

A. two

B. six

C. three

D. eight

**Answer: A**



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10. Nucleotide constituent of RNA are

- A. adenine, guanine, cytosine, uracil
- B. adenine, guanine cytosine, thimine
- C. thymine, cytosine, xathine, uracil
- D. cytosine, adenine, uric acid, guanine

**Answer: A**



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11. The percentage of mRNA amongst total RNA of cell is

A. 0.5-1%

B. 3-5%

C. 15-20%

D. More than 25%

**Answer: B**



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**12. ATP is a**

A. nucleotide

B. nucleoside

C. nucleic acid

D. vitamin

**Answer: A**



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**13. Phosphate bonds present in ATP are**



A. One

B. two

C. three

D. four

**Answer: C**



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**14. Adenosine disphosphate (ADP) contains**

A. one high energy bond

B. two high energy bond

C. three high energy bond

D. four high energy bond

**Answer: B**



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**15.** The high-energy bonds of ATP are between

A. C-O

B. O-P

C. C-N

D. C-C

**Answer: B**



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## Check Point 17 4

1. Nobel prize for discovering enzyme was given to

A. fischer

B. Altmann

C. fleming

D. buchner

**Answer: D**



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**2. How many categories of enzymes have been recognised by IUB?**

A. five

B. Six

C. Seven

D. Eight

**Answer: B**



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**3. Hydrolases are involved in the hydrolysis of**

A. esters

B. lipids

C. proteins

D. all of these

**Answer: D**



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**4.** The co-factor for carboxypeptidase enzyme is

A. *Co*

B. *Ni*

C. *Mg*

D. *Zn*

**Answer: D**



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5. What will happen to an enzyme when apoenzyme is separated from cofactor?

A. Activity will be increased

B. Activity will be lost

C. Activity will be decreased

D. There will be no change in the activity

**Answer: A**



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**6. Which of the following are coenzymes?**

A. NAD,NADP,FAD,FMN

B. Vitamin, Fe, Cu



C.  $NADPH_2$ , Ca, Co

D. NAD, K, Co-A

**Answer: A**



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7. The function of an enzyme is to

A. cause chemical reactions, which would not occur otherwise

B. change the rates of chemical reactions

C. control the equilibrium points of reactions

D. change the direction of reactions

**Answer: B**



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**8.** An enzyme increases the rate of a reaction by

A. supplying the energy required to start the reaction

B. increasing the rate of random collisions of molecules

C. removing the product of the reaction so allowing it to continue

D. bringing the reacting molecules into precise orientation with each other

**Answer: D**



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9. Induced fit hypothesis was proposed by

A. Fischer E

B. Koshland

C. Buchner

D. Kuhne

**Answer: B**



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**10.** Catalytic activity of enzymes is influenced by

A. temperature

B. pH and enzyme positions

C. concentration, substrate and cofactors

D. all of the above

**Answer: D**



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11. Most of the enzymes are inactivated at temperature above

A.  $25^{\circ}C$

B.  $40^{\circ}C$

C.  $55^{\circ}C$

D.  $80^{\circ}C$

**Answer: B**



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12. How is the rate of enzyme-catalysed reactions affected by every  $10^{\circ}\text{C}$  rise in temperature?

A. Half

B. Double

C. Becomes four times

D. Remains unchanged

**Answer: B**



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13. At which temperature, the enzyme activity would be maximum?

A.  $20 - 40^{\circ}C$

B.  $40 - 45^{\circ}C$

C.  $40 - 60^{\circ}C$

D.  $60^{\circ}C$  and above

**Answer: A**



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14.  $K_m$  value refers to

A. maximum reaction velocity

B. near maximum reaction velocity

C. one half of the maximum reaction  
velocity

D. threshold value

**Answer: C**



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**15.** Substrate concentration at which an enzyme attains half its maximum velocity is

- A. threshold value
- B. half-life
- C. michaelis-menten constant
- D. concentration coefficient

**Answer: C**



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

A. formation of the product

B. pH of optimum value

C.  $K_m$  value

D. Molecular size of enzyme

**Answer: C**



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17. Which one value is required for better enzymatic action

A. High  $K_i$

B. Low  $K_i$

C. Low  $K_m$

D. High  $K_m$

**Answer: C**



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**18.** On binding the substrate at one site, other sites on an enzyme become more reactive. This is called

A. allosteric inhibition

B. specificity

C. cooperativity

D. activation

**Answer: B**



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**19.** Feedback inhibition quite often involves

A. competitive inhibition

B. irreversible inhibition

C. allosteric inhibition

D. all of these

**Answer: D**



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20. Which of the following acts as precursor to form the active enzyme?

A. Aspartate

B. Kinase

C. Glycogen

D. Zymogen

**Answer: D**



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# Chapter Exercises A Taking It Together Assorted Questions Of The Chapter For Advanced Level Practise

1. An acid soluble compound formed by phosphorylation of nucleoside is called

A. nitrogen base

B. adenine

C. sugar phosphate

D. nucleotide

**Answer: D**





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2. When we homogenise any tissue in an acid the acid soluble pool represents

- A. cytoplasm
- B. cell membrane
- C. nucleus
- D. mitochondria

**Answer: A**



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3. The most abundant chemical in living organisms could be

A. rprotein

B. water

C. sugar

D. nucleic acid

**Answer: B**



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4. Many elements are found in living organisms either free or in the form of compounds. One of the following is not found in living organisms.

A. Silicon

B. Magnesium

C. Iron

D. sodium

**Answer: A**



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5. Which of the following metabolite is not a primary metabolite?

A. Protein

B. Amino acid

C. Carbohydrates

D. Rubber

**Answer: D**



6. The ratio between hydrogen and oxygen in a carbohydrate is

A. 5 : 1

B. 4 : 3

C. 3 : 1

D. 2 : 1

**Answer: D**



7. if you want to detect whether a sugar is reducing or non-reducing, which chemical would you utilise?

A. Benedict's reagent

B. Iodine

C. sudan-III

D. Trihydroxy propane

**Answer: A**



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8. Dahlia tubers store a polymer of fructose called

A. glycogen

B. mucin

C. inulin

D. agar

**Answer: C**



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9. A non-reducing sugar is

A. glucose

B. saccharin

C. sucrose

D. fructose

**Answer: C**



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**10.** A homopolymer has only one type of building block called monomer repeated 'n' number of times. A heteropolymer has more than one type of monomer. Proteins are heteropolymers usually made of

- A. 20 types of monomers
- B. 40 types of monomers
- C. 30 types of monomers
- D. one one type of monomers

**Answer: A**



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11. Glycogen is a homonpolymer made up of

- A. glucose units
- B. galactose units
- C. ribose units
- D. amino acid

**Answer: A**



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12. 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 branch points

C. one

D. two, one of the left side and another on the right side

**Answer: A**



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13. Cellobiose, the hydrolytic breakdown product of cellulose is

A. a monosaccharide

B. a disaccharide

C. a tetrasaccharide

D. a trisaccharide

**Answer: B**



14. Which one of the following glycosidic linkages is found in maltose?

A.  $\beta - 1, 4$

B.  $\alpha - 4, 1$

C.  $\beta - 4, 1$

D.  $\alpha - 1, 4$

**Answer: D**



**15.** Raffinose is a

A. monosaccharide

B. disaccharide

C. trisaccharide

D. tetrasaccharide

**Answer: C**



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**16.** Cellulose is formed by union of repeated residues of

A. amino acids

B. lipids

C. glucose

D. fructose

**Answer: C**



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17. Which of the following sugars have the same number of carbon as present in glucose ?

A. Fructose

B. Erythrose

C. Ribulose

D. Ribose

**Answer: A**



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**18.** Paper made from plant pulp and cotton fibre are respectively

A. cellulose and sucrose

B. sucrose and cellulose

C. sucrose and sucrose

D. cellulose and cellulose

**Answer: D**



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19. The most abundant carbohydrate in biosphere is

A. cellulose and sucrose

B. insuline

C. starch

D. glycogen

**Answer: A**



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20. The monomer units of chitin and fungus cellulose are

- A. mannitol
- B. N-acetyl glucosamine
- C. ascorbic acid
- D. glucooronic acid

**Answer: B**



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21. Exoskeletons of arthropods have a complex

A. polysaccharide called chitin, which is

B. heteropolymer

C. homopolymer

D. not a polymer

**Answer: B**



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22. A polysachharide employed in tissue culture is

A. cellulose

B. starch

C. glycogen

D. agar-agar

**Answer: D**



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23. The mucopolysaccharide present in bone joints is

- A. hyaluronic acid
- B. chondroitin sulphate
- C. heparin
- D. mucilage

**Answer: B**



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24. Which of the following sugars is not found in plants?

A. Sucrose

B. glucose

C. lactose

D. fructose

**Answer: C**



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25. Which one of the following is the ring structure formed by pentose?

- A. Pyranose ring
- B. furans ring
- C. erythrose ring
- D. both (a) and (b)

**Answer: D**



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26. Hyluronic acid is a heteropolysachaside of

A. D-glucuronic acid and D-N-acetyl glucosamine

B. D-glucuronic acid and N-acetyl muramic acid

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

D. Glucose and fructose

**Answer: A**

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27. mannose is

A. disaccharide

B. aldohexose

C. pentose sugar

D. a tetrose

**Answer: B**



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**28.** A mucopolysaccharide is

A. slime, phycocolloid and pectin

B. mucin, callose and heparin

C. hemicellulose, pectin and mucin

D. hyaluronic acid, chondroitin sulphate  
and keratin

**Answer: D**



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**29.** An essential amino acid is

A. tryptophan

B. phenylalanine

C. leucine

D. all of these

**Answer: D**



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30. Amino acids have both an amino group and a carboxy group in their structure. Which amongst the following is an amino acid ?

A. Formic acid

B. glycerol

C. glycolic acid

D. glycine

**Answer: D**



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**31.** An amino acid under certain conditions have both positive and negative charges simultaneously in the same molecule. Such a form of amino acid is called

A. acidic form

B. basic form

C. aromatic form

D. zwitter ionic form

**Answer: D**



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32. Amino acids are

A. leavorotatory

B. dextrorotatory

C. laevorotatory except glycine, which is  
non-rotatory

D. laevorotatory except glycine, which is a  
dextrorotatory

**Answer: C**



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**33.** Number of semi-essential amino acids is

A. four

B. three

C. two

D. one

**Answer: C**



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**34.** Which of the following is not a sulphur containing amino acid?

A. Cysteine

B. Methionine

C. Both (a) and (b)

D. Lysine

**Answer: D**



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35. An extra carboxylic group is present in

A. aspartate

B. tyrosine

C. lysine

D. phenylalanine

**Answer: A**



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**36.** Which of the following is a basic amino acid?

A. leucine

B. lysine

C. methionine

D. aspartic acid

**Answer: B**



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37. In a protein molecule, amino acids are linked by a peptide bond, which is formed by the reaction of

- A.  $-COOH$  group of one amino acid with  $-NH_2$  group next amino acid
- B.  $-NH_3$  group of one amino acid with  $-COOH$  group of next amino acid
- C.  $-COOH$  group of two amino acid
- D.  $-NH_2$  group of two amino acid

**Answer: A**



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**38.** The linear chains of amino acids linked by peptide bonds are called

- A. fatty acids
- B. carbohydrates
- C. proteins
- D. nucleic acid

**Answer: C**



39. How many amino acids are involved in stabilising protein molecules?

A. 200

B. 20

C. 10

D. more than 200

**Answer: B**



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40. The primary structure of protein determines,

A. the sequence of amino acids

B. the number of amino acids

C. Both (a) and (b)

D. None of the above

**Answer: A**



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41. Which is type of secondary protein structure

A.  $\alpha$ -helix

B.  $\beta$ -pleated

C. collagen helix

D. all of these

**Answer: D**



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**42.** Tertiary structure of proteins having amino acid cysteine is achieved through

A. hydrogen bonds

B. disulphide bonds and covalent bonds

C. van der waals' force

D. ionic bonds

**Answer: B**



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**43.** The globular proteins undergo structural change, in response to extremes of pH or temperature are called

A. renaturation

B. denaturation

C. Both (a) and (b)

D. combination

**Answer: C**



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**44.** If the sub-unit of protein are joined by bonds other than covalent bond then the structure is called

- A. primary structure
- B. secondary structure
- C. tertiary structure
- D. quaternary structure

**Answer: D**



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45. During protein, denaturation one of the following is disrupted?

- A. peptide bond sequence of amino acids
- B. secondary and tertiary structure
- C. primary structure
- D. none of the above

**Answer: B**



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**46.** The function not normally subserved by proteins is

- A. hydrolysis for energy provision
- B. structural integrity of the cell
- C. regulation of metabolism
- D. defence mechanism

**Answer: A**



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47. Relation between amino acid and protein is similar to one that found annd fructose

A. glucose and fructose

B. thymine and uracil

C. nucleosides and nucleic acid

D. nucleotides and nucleic acid

**Answer: D**



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

A. antibiotics

B. pigments conferring colour to skin

C. pigments making colour of flowers

D. hormones

**Answer: D**





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49. Which one of the following is a semi-essential amino acid?

A. Tyrosine

B. serine

C. glycine and methionine

D. Histidine

**Answer: D**



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50. The melting point of unsaturated fatty acids

- A. increases with increase in double bonds
- B. decreases with increase in double bonds
- C. rises in some and falls in others
- D. there is no relationship between unsaturation and melting point.

**Answer: A**





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51. Non-polar tails of lipids have

A. glycerol

B. fatty acids

C. charged molecules

D. phosphate

**Answer: B**



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52. Doctors recommend sunflower oil as it is rich

A. source of vitamins

B. in unsaturated fatty acid

C. in energy and reduces weight

D. in saturated fatty acid

**Answer: B**



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**53.** Bee's wax consists of

A. triacontanyl palmitate

B. mericyl stearate

C. acetyl palmitate

D. acetyl stearate

**Answer: A**



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**54.** Cerebrosides are

A. simple lipids

B. lipids, which are joined with galactose

C. lipids with phosphates

D. steroids

**Answer: B**



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**55.** A group of proteins in living cells, which catalyses chemical reactions is called

A. enzymes

B. vitamins

C. auxins

D. hormones

**Answer: A**



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**56.** Buchner proved that it is not living yeast, but a non-living substance in it which causes fermentation. This substance is

A. urease

B. lipase

C. zymase

D. protease

**Answer: C**



**Watch Video Solution**

**57.** Which of the following enzymes was first isolated and purified in the form of crystal?

A. Amylase

B. ribonuclease

C. urease

D. pepsin

**Answer: C**



**Watch Video Solution**

**58.** Earliest known enzyme was

A. sucrase



B. zymase

C. diastase

D. urease

**Answer: B**



**Watch Video Solution**

**59.** The transfer of a group from a donor molecule to an acceptor molecule is catalysed by

A. transferase

B. isomerase

C. protease

D. hydrolytic enzymes

**Answer: A**



**Watch Video Solution**

**60.** Glutamate pyruvate transaminase enzyme  
is an example of

A. oxidoreductase

B. transferases

C. lyases

D. ligases

**Answer: B**



**Watch Video Solution**

**61.** Enzymes bringing about hydrolysis of esters and peptides are

A. lyases

B. synthetases

C. hydrolases

D. transferases

**Answer: C**



**Watch Video Solution**

**62.** Which enzymes bring about cleavage of specific covalent bonds and removal of groups without hydrolysis?

A. Lyases

B. Ligases

C. Hydrolases

D. Transferases

**Answer: A**



**Watch Video Solution**

**63.** Histidine decarboxylase enzyme belongs to the category

A. oxidoreductases

B. isomerases

C. lyases

D. ligases

**Answer: C**



**Watch Video Solution**

**64.** Enzyme catalysing rearrangement of atomic grouping without altering molecular weight or number of atoms is

A. ligase

B. hydrolase

C. isomerase

D. oxidoreductase

**Answer: C**



**Watch Video Solution**

**65.** Ligases are involved in the synthesis of

A. C-C bond

B. C-N bond

C. C-O bond

D. All of these

**Answer: D**



**Watch Video Solution**

**66.** Which enzyme is not proteinaceous?

A. Isozyme

B. Ribozyme



C. Holozyme

D. Trypsin

**Answer: B**



**Watch Video Solution**

**67.** Among the following the fastest active enzyme is

A. peroxidase

B. amylase

C. carbonic anhydrase

D. phosphoglyceromutase

**Answer: C**



**Watch Video Solution**

**68.** The organic compounds, which have transient association with apoenzymes are called

A. holoenzyme

B. coenzyme

C. prosthetic group

D. none of these

**Answer: B**



**Watch Video Solution**

**69.** Which of the following forms a part of a co-enzyme?

A. Zinc

B. Lipase

C. Riboflavin

D. Lysine

**Answer: C**



**Watch Video Solution**

**70.** Coenzyme-A is derived from

A. thiamin

B. riboflavin

C. pantothenic acid

D. biotin

**Answer: C**



**Watch Video Solution**

**71.** Which of the following reactions is not enzyme-mediated in biological system ?

A. Dissolving  $CO_2$  in water

B. Unwinding the two strands of DNA

C. Hydrolysis of sucrose

D. Formation of peptide bond

**Answer: A**



**Watch Video Solution**

**72. Most intracellular enzymes function best**

A. at neutral pH

B. in acidic conditions

C. in basic conditions

D. either neutral or acidic conditions

**Answer: A**



**Watch Video Solution**

**73.** The enzymatic reaction for which thiamin pyrophosphate functions as a cofactor is

A. peptide bond formation

B. phosphate group transfer

C. fixation of carbon dioxide

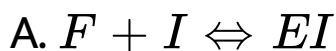
## D. decarboxylation of a keto acids

**Answer: D**

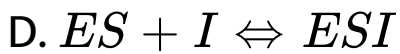


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**74.** In competitive inhibition, which of the following is true?







**Answer: A**



**View Text Solution**

**75.** To explain the mechanism of enzymatic action, who proposed "Lock and key hypothesis"

A. Fischer

B. Jacob

C. Koshland

D. Summer

**Answer: A**



**Watch Video Solution**

**76.** Which of these inactivates an enzyme by changing enzyme shape?

A. Allosteric inhibitor

B. competitive inhibitor

C. irreversible inhibitor

D. multienzyme complex

**Answer: A**



**Watch Video Solution**

**77.** Decline in the activity of the enzyme hexokinase by glucose 6 - phosphate is caused by

A. non-competitive

B. competitive inhibitions

C. allosteric modulator

D. denaturation of enzymes

**Answer: C**



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**78.** Sulpha drugs are used for the control of bacterial pathogens, because they cause

A. competitive inhibition of folic acid synthesis

B. allosteric inhibition of folic acid synthesis

C. feedback inhibition of folic acid synthesis

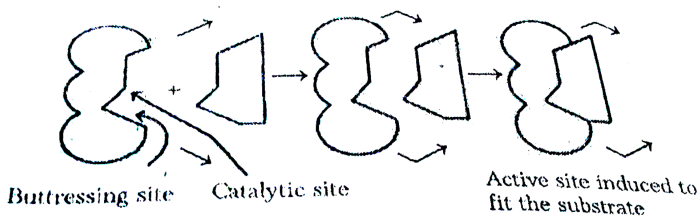
D. irreversible inhibition of folic acid synthesis

**Answer: A**



**Watch Video Solution**

79. Which model of an enzyme action is seen in the given figure?



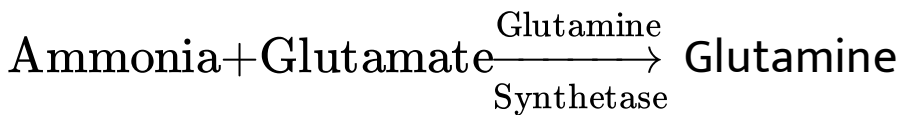
- A. Lock and key model
- B. Induced fit model
- C. Enzyme-substrate model
- D. None of these

**Answer: A**



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**80.** The equation shows how the enzyme glutamine synthetase removes the ammonia produced during plant metabolism.



Some herbicides contain an active agent, which resembles glutamate. what is the likely mode of action of this agent?

A. it acts as an end-product inhibitor

B. it acts as a competitive inhibitor

C. it decreases levels of ammonia

D. it increases levels of glutamate

**Answer: B**



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**81. Which statement is true for all enzymes?**



- A. They are denaturated at temperatures above  $60^{\circ}C$
- B. They catalyse the breakdown of large molecules into smaller ones
- C. they have active sites, which can bind to only one kind of substrate molecule
- D. they reduce the amount of energy required to start a reaction

**Answer: D**



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**82.** Which of the following statement is incorrect?

A. Enzymes hasten the completion of a reaction

B. the two terms substrate and product signify the starting and ending materials of a reaction

C. enzymes are affected by the reactions they catalyse

D. enzymes exhibit specificity for the reactions they catalyse

**Answer: C**



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**83.** non-reducing sugars have

A. free -CHO group and bound -CO group

B. free -CO group and bound -CHO group

C. Both -CO and -CHO free groups

D. neither free -CO nor free -CHO group

**Answer: D**



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**84.** It is said that elemental composition of living organisms and that of inanimate objects (like earth's crust ) are similar in the sense that all the major elements are present in both. Then what would be the difference

between these two groups ?

Choose a correct answer from the following.

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

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

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

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

**Answer: C**



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**Chapter Exercises B Medical Entrances Special  
Formate Questions Statement Based Questions**

1. Which of the following statement are correct?

I. Monosaccharides are the simplest carbohydrates.

II. Oligosaccharides on hydrolysis yield three to nine monosaccharide units.

III. Polysaccharides on hydrolysis give 10-15 monosaccharide units.

IV. Polysaccharides on hydrolysis yield many oligosaccharide units.

A. Only I

B. Only III

C. I and II

D. I and III

**Answer: C**



**Watch Video Solution**

**2. The enzymes**

I. are protein with catalytic activities.

II. Are colloidal in nature.

III. Working within the cell are called simple enzymes.



IV. Increase the activation energy of the reaction they catalyse.

A. Only I

B. Only III

C. I and II

D. I and III

**Answer: C**



**Watch Video Solution**

3. Which of the following can bring about the denaturation of proteins?

I. Exposure to salts of heavy metal ions.

II. Exposure to acid and bases.

III. Exposure to inorganic neutral salts.

IV. Exposure to temperature below  $-5^{\circ}C$ .

A. Only I

B. Only II

C. None of these

D. I and II

**Answer: D**



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#### **4. Co-enzymes**

I. are needed for the function of particular enzymes.

II. Are inorganic molecules

III. Are organic molecules

IV. FAD and FMN contain niacin, while NAD and NADP contain riboflavin.

A. Only I

B. II and IV

C. Only IV

D. I and III

**Answer: D**



**Watch Video Solution**

**5. The biomolecules are**

I. carbohydrates.

II. Proteins.

III. Lipid.

IV. Mitochondria.

A. I,II and III

B. II and III

C. only II

D. All of these

**Answer: A**



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# Chapter Exercises B Medical Entrances Special Formate Questions Match The Column

1. Match the following columns.

Column I	Column II
A. Cellulose	1. Insulin
B. Peptide	2. Alkaline phosphatase
C. Steroid	3. Cotton fibres
D. Phospholipid	4. Diosgenin
E. Enzyme	5. Lecithin

A. A-3,B-4,C-5,D-1,E-2

B. A-2,B-1,C-4,D-5,E-2

C. A-3,B-1,C-4,D-5,E-2

D. A-1,B-4,C-3,D-5,E-2

**Answer: C**



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**Chapter Exercises B Medical Entrances Special  
Formate Questions Assertion And Reason**

1. Assertion- Most of the enzyme are proteins, which catalyse biochemical reactions.

Reason- The enzyme itself is unchanged in the reaction, its presence allows the reaction to takes place.

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

**Answer: B**



**Watch Video Solution**



2. Assertion- Enzymes lowers the activation energy of the reaction.

Reason- Higher activation energy helps the molecules to react with greater rate.

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

B. Both assertion and reason are true, but reason is not the correct explanation of

assertion.

C. assertion is true, but reason is false

D. assertion is false, but reason is true

**Answer: C**



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**3. Assertion-** Lactose is a non-reducing sugar.

**Reason-** Sucrose shows  $\alpha, 1, 2$ -glycosidic linkage.

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

**Answer: B**



**Watch Video Solution**

4. Assertion- Protein forming amino acids are  $\alpha$ -amino acids.

Reason- In all protein forming amino acids,  $-NH_2$  groups is attached to second C-atom after  $-COOH$  group

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

B. Both assertion and reason are true, but reason is not the correct explanation of assertion.

C. assertion is true, but reason is false

D. assertion is false, but reason is true

**Answer: B**



**Watch Video Solution**

5. Assertion- Sucrose is a non-reducing sugar.

Reason- Sucrose does not have free -CHO group.

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

B. Both assertion and reason are true, but reason is not the correct explanation of assertion.

C. assertion is true, but reason is false

D. assertion is false, but reason is true

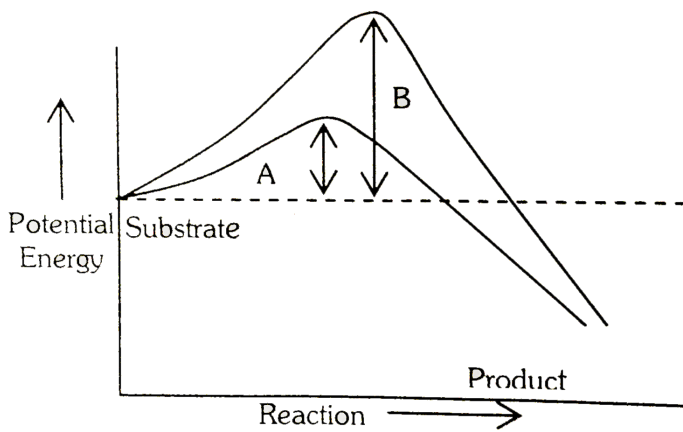
**Answer: A**



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**Chapter Exercises C Medical Entrances Gallery  
Collection Of Questions Asked In Neet Various  
Medical Entrance Exams**

**1. Which of the following describes the given  
graph correctly**



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

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



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

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

**Answer: B**



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2. The enzyme which catalyses the formation of glutamine from its substrate belongs to category

A. ligases

B. lyases

C. Hydrolases

D. transferases

**Answer: A**



**Watch Video Solution**

3. A typical fat molecule is made up of

A. one glycerol and three fatty acid molecules

B. one glycerol and one fatty acid molecule

C. three glycerol and three fatty acid molecules

D. three glycerol and one fatty acid molecule

**Answer: A**

---



#### 4. Match the following colum.

Column I	Column II
A. Abrin	1. Lectin
B. GLUT-4	2. Intercellular ground substance
C. Collagen	3. Hormone
D. Concanavalin	4. Enables glucose transport into cells
	5. Toxin

A. A-3,B-4,C-2,D-1

B. A-5,B-4,C-2,D-1

C. A-3,B-4,C-2,D-5

D. A-3,B-5,C-2,D-1

**Answer: B**



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5. What is exhibited by lower  $k_m$  value

- A. More affinity with substrate
- B. Less affinity with substrate
- C. More affinity with product
- D. Less affinity with product

**Answer: A**



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6. Which one of the following natural polymers is found in both insects and fungi

A. Pectin

B. Chitin

C. cellulose

D. suberin

**Answer: B**



7. Which is not applicable to glycogen

- A. Homopolysaccharide
- B. Heteropolysaccharide
- C. Branched chain molecule
- D. stored in liver and muscle

**Answer: B**



**8. Identify the correct pair of statements**

(i) Alternate name of thymine is 5- methyl uracil

(ii) Arachidonic acid molecule contains less number of carbons than palmitic acid

(iii) Cellulose contains helices

(iv) Aquaporin is a polypeptide

A. II and III

B. I and II

C. II and IV

D. I and IV



**Answer: D**



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**9. Match the following column**

<b>Column I</b>	<b>Column II</b>
A. Oxidoreductases	1. Linking of two compounds
B. Isomerases	2. Removal of group from substrates
C. Ligases	3. Interconversion of isomers
D. Lyases	4. Dehydrogenases
	5. Hydrolysis

A. A-4,B-1,C-3,D-2

B. A-4,B-3,C-1,D-2

C. A-2,B-5,C-3,D-1

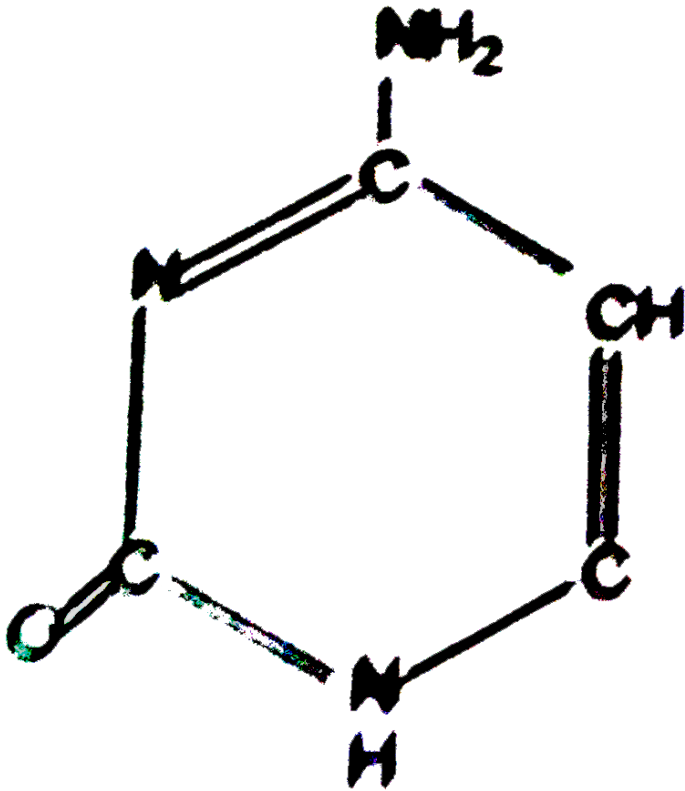
D. A-2, B-1, C-4, D-3

**Answer: B**



**Watch Video Solution**

10. Which nitrogen base is this



A. Cytosine

B. Thymine

C. Adenine

D. uracil

**Answer: A**



**Watch Video Solution**

**11.** Identify the polypeptide subunit present in the adult haemoglobin

A. two  $\alpha$ - and two  $\beta$ -subunits

B. four  $\alpha$ -subunits

C. four  $\beta$ -subunits

D. three  $\alpha$ -subunits and one  $\beta$ -subunits

**Answer: A**



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**12.** Which one of the following combination of all three fatty acids are essential for human beings

A. Oleic acid, lineic acid and linolenic acid

B. Palmitic acid, linoleic acid and linolenic acid

C. Oleic acid, linoleic acid and arachidonic acid

D. linoleic acid, linolenic acid and arachidonic acid

**Answer: D**



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**13.** An allosteric inhibitor of the enzyme acts by binding to the

A. substrate

B. product

C. catalytic site of enzyme

D. non-catalytic site of enzyme

**Answer: D**



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14. identify the incorrect match between protein and its role

A. keratin-structural component of hair

B. Immunoglobulins-protection of body against diseases

C. haemoglobin-transport of oxygen in muscles

D. Thrombin-blood clotting

**Answer: C**



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15. \_\_\_\_\_ are the most abundant protein in the living world

A. Ribozyme of plants and collagen of animals

B. RuBisCO of plants and collagen of animals

C. PEPcase of plants and keratin of animals

D. Alcohol dehydrogenase of plants and melanin of animals

**Answer: B**



**Watch Video Solution**

**16.** In how many interlocking rings are the carbon atoms arranged in a steroid molecule

A. One

B. Two

C. Three

D. Four

**Answer: D**



**Watch Video Solution**

**17. Which of the following sugars cannot be hydrolysed further to yield simple sugars**

A. Ribose

B. Maltose

C. Sucrose

D. Lactose

**Answer: A**



**Watch Video Solution**

**18.** Which of the following amino acids contain sulphur in its side chains

A. Methionine

B. Alanine

C. Tryptophan

D. Phenylalanine

**Answer: A**



**Watch Video Solution**

**19.** Which of the following statements regarding fats is true

A. Arachidonic acid has 20 carbons  
excluding the carbonyl carbon

B. glycerol is trihydroxy propane

C. palmitic acid has 18 carbons including  
the carboxyl carbon

D. Oils have higher melting point than fats

**Answer: B**



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**20. Match the following column**

Column I	Column II
A. Nitrogen base	1. RNA
B. Nucleoside	2. Thymidylic acid
C. Nucleotide	3. Cytidine
D. Nucleic acid	4. Uracil

A. A-1,B-2,C-3,D-4

B. A-1,B-3,C-2,D-4

C. A-4,B-3,C-2,D-1

D. A-4,B-1,C-2,D-3

**Answer: C**



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**21. Coenzymes NAD and NADP contain the vitamin**

A. niacin

B. biotin

C. thiamin

D. vitamin- $B_{12}$

**Answer: A**



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**22.** Which of the following scientists discovered the triple helical structure of collagen



A. GN Ramachandran

B. Anton van Leeuwenhoek

C. Mathias Schleiden

D. Theoder Schwann

**Answer: A**



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

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

B. A non-competitive inhibitor binds the enzyme at a sight distinct from the which binds the substrate

C. malonate is a competitive inhibitors of succinic dehydrogenase

D. substrate binds with the enzyme at its- active site

**Answer: A**



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**24.** 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 molecule 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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25. Transition state structure of the substrate formed during an enzymatic reaction is

- A. transient but stable
- B. permanent but unstable
- C. transient and unstable
- D. permanent and stable

**Answer: C**



**Watch Video Solution**

26. Macromolecule chitin is a

A. phosphorus containing polysaccharide

B. sulphur containing polysaccharide

C. simple polysaccharide

D. nitrogen containing polysaccharide

**Answer: D**



**Watch Video Solution**

27. With reference to enzymes, which one of the following statements is true ?

A. Apoenzyme=Holoenzyme+Coenzyme

B. Holoenzyme=Apoenzyme +Coenzyme

C. Coenzyme=Apoenzyme+Holoenzyme

D. Holoenzyme=Coenzyme-Apoenzyme

**Answer: B**



**Watch Video Solution**

**28.** Holoenzyme is

- A. non-protein and apoenzyme
- B. protein and apoenzyme
- C. enzyme non-protein and coenzyme
- D.

**Answer: C**



**Watch Video Solution**

**29.** Which of the following is a coenzyme?



A.  $NAD^+$

B. Protein

C.  $Cu^+$

D. None of these

**Answer: A**



**Watch Video Solution**

**30.** Which is a carbohydrate having  $\beta$ -repeated units

A. pectin

B. Lignin

C. Both (a) and (b)

D. Cellulose

**Answer: D**



**Watch Video Solution**

**31.** Allosteric modulation is due to the inhibition action of enzyme by

A. product

B. competitive inhibition

C. substrate

D. enzyme

**Answer: A**



**Watch Video Solution**

**32.** What is common among amylase, rennin and trypsin?

- A. All are proteins
- B. All act at less than 7 pH
- C. all are produced in stomach
- D. All are hormones

**Answer: A**



**Watch Video Solution**

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

A. coenzyme

B. Holoenzyme

C. apoenzyme

D. isoenzyme

**Answer: A**



**Watch Video Solution**

**34.** Lysozyme that is present in perspiration, saliva and tears, destroys

- A. certain fungi
- B. certain types of bacteria
- C. all viruses
- D. most virus infected cells

**Answer: B**



**Watch Video Solution**

**35.** The tightly bound non-proteinaceous organic compound in enzyme, is

A. coenzyme

B. prosthetic group

C. cofactor

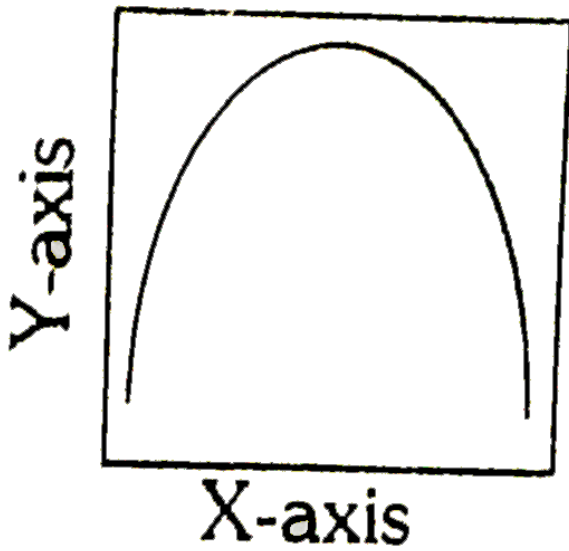
D. apoenzyme

**Answer: B**



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



What do the two axes (x and y) represent

A. X-axis- Temperature, Y-axis-Enzyme  
activity

B. X-axis- Substrate concentration, Y-axis-  
Enzymatic activity



C. X-axis- Enzymatic activity, Y-axis-  
Temperature

D. X-axis- Enzymatic activity, Y-axis- pH

**Answer: C**



**Watch Video Solution**

**37.** The most abundant molecule in cell is

A. water

B. carbohydrate

C. lipids with phosphates

D. protein

**Answer: A**



**Watch Video Solution**

**38. Which one is an amino acid**

A. Pepsin

B. Proline

C. Cysteine

D. Renin

**Answer: C**



**Watch Video Solution**

**39.** Which one of the following is polysaccharide?

A. Glycogen

B. Sucrose

C. Lactose

D. Maltose

**Answer: A**



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**40.** In a polysaccharide, the individual monosaccharides are linked by a

A. glycosidic bond

B. peptide bonds

C. ester bond

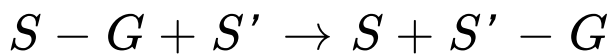
D. phosphodiester bond

**Answer: A**



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**41.** Select the type of enzyme involved in the following reaction



A. dehydrogenase

B. transferases

C. hydrolase

D. lyase

**Answer: B**



**Watch Video Solution**

**42. Pick out the wrong statement**

A. amino acids are substituted methanes

B. glycerol is a trihydroxy propane

C. lysine is a neutral amino acid

D. lecithin is a phospholipid

**Answer: B**



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**43.** Select the wrong statement.

A. Proteins are heteropolymers made of amino acids

B. Ribozymes are nucleic acid with catalytic power

C. nucleic acid serve as genetic material

D. Collagen is the most abundant protein

in the whole of the biosphere and

RuBisCO is the most abundant protein in

animal world

**Answer: D**



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**44.** Find out the wrongly matched pair



A. Primary metabolite-Ribose

B. Secondary metabolite-Anthocyanin

C. protein-Insulin

D. Cellulose-Heteropolymer

**Answer: D**



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

(A) The enzyme releases the products of the

reaction and the enzyme is free to bind to another substrate

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

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

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

A. IV,III,II,I

B. III,II,I,IV

C. IV,II,I,III

D. II,I,IV,III

**Answer: A**



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**46.** Which of the following is not conjugated protein

A. Peptone

B. Phosphoprotein

C. Lipoprotein

D. Chromoprotein

**Answer: A**



**Watch Video Solution**

**47.** Which one is diaminodiacrboxlic amino acid

A. cystine

B. lysine

C. cysteine

D. aspartic acid

**Answer: A**



**Watch Video Solution**

**48.** Enzymes often have additional parts in their structure that are made up of molecules other than proteins. When this additional chemical part is an organic molecule, it is called

A. cofactor

B. coenzyme

C. Both (a) and (b)

D. substrates

**Answer: C**



**Watch Video Solution**

**49.** Which of the following is the sweetest sugar?

A. Glucose

B. Fructose

C. sucrose

D. maltose

**Answer: B**



**Watch Video Solution**

**50.** Study the statements and choose the correct answer

Statement a. Amino acids are amphoteric.

Statement b. All amino acids are necessary for our body.

A. Statement A is correct, statement B is wrong

B. Both the statement A and B are correct

C. Statement A is wrong, statement B is correct

D. Both the statement A and B are wrong.

**Answer: A**



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51. match the following columns.

Column I	Column II
A. Triglycerides	1. Galactose
B. Lactose	2. Glycerol
C. RNA	3. Palmitic acid
D. $\beta$ -pleats	4. Uracil
E. Bee-wax	5. Secondary structure

A. A-4,B-1,C-5,D-2,E-3

B. A-5,B-1,C-4,D-2,E-3

C. A-3,B-1,C-4,D-5,E-2

D. A-2,B-1,C-4,D-5,E-3

**Answer: D**



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52. Sucrose, a common table sugar, is composed of

- A. glucose and fructose
- B. glucose and galactose
- C. fructose and galactose
- D. none of these

**Answer: A**



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**53.** Which of the following statements is/are not true

(A) Glycerol is a 3 carbon alcohol with 3 OH groups that

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

(C) The term protein was coined by Gerardus Johannes Mulder

(D) Agar is an indispensable polysaccharide and it is a complex polymer of glucose and sulphur-containing carbohydrates

A. I and III

B. I and IV

C. I,II and IV

D. Only IV

**Answer: D**



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

A. cyanide action on cytochrome

B. sulpha drug on folic acid synthesiser  
bacteria

C. allosteric inhibition of hexokinase by  
glucose-6-phosphate

D. reaction between succinic  
dehydrogenase and succinate

**Answer: C**



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**55.** ATP is a

A. nucleotide

B. nucleosome

C. purine base

D. nucleoside

**Answer: A**



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56. Which of the following is the simplest amino acid

A. glycine

B. lysine

C. tyrosine

D. aspartic acid

**Answer: A**



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

A. branched chain of glucose molecules linked by a  $\alpha - 1, 6$  glycosidic bond at the site of branching

B. unbranched chain of glucose molecules linked by  $\alpha - 1, 4$  glycosidic bond

C. Branched chain of glucose linked by  $\beta - 1, 4$  glycosidic bond is straight chain and  $\alpha - 1, 4$  glycosidic bond in straight



chain and  $\alpha - 1,6$  glycosidic bond at the site of branching

D. unbranched chain of glucose molecules linked by  $\beta - 1,4$  glycosidic bond

**Answer: D**



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**58.** 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 synthesised in the body

of a living organism at present

D. help in regulating metabolism

**Answer: D**



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59. Bond present between two residues of carbohydrate is

A. amide

B. hydrogen

C. glycosidic

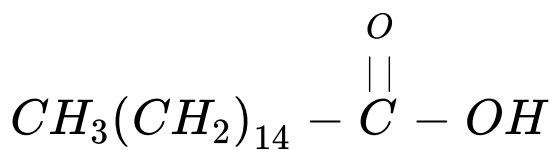
D. phosphodiester

**Answer: C**



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60. Given below is the chemical formula of



A. palmitin acid

B. stearic acid

C. glycerol

D. galactose

**Answer: A**



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61. Find out the mis-matched pair

A. Agar-polymer of glucose and sulphur containing carbohydrates.

B. Chitin-polymer of glucosamine

C. Peptidoglycan polysaccharide linked to peptides

D. Lipopolysaccharides a complex of lipid and polysaccharide

**Answer: A**



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**62. Assertion.** A coenzyme or metal ion that is very tightly bound to enzyme protein called prosthetic group.

**Reason.** A complete, catalytically active enzyme together with its bound prosthetic group is called apoenzyme.

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

B. Both assertion and reason are true, but reason is not the correct explanation of assertion.

C. assertion is true, but reason is false

D. Both assertion and reason are false

**Answer: C**



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