BIOLOGY NMDCAT EARLIER PREP

PMC UNIT WISE TEST Unit-2

TOPICS:

- ✓ **Biological molecules**
- ✓ **Enzymes**

Q.1 The most abundant organic compound to be found in any type of cell is:

A. Carbohydrates B. Proteins
C. Lipids D. Water

Q.2 _____ act as product as well as reactant of photosynthesis.

A. Glycine B. Ribose
C. Glucose D. Water

Q.3 The compounds which on hydrolysis yield polyhydroxy aldehyde or ketone subunits are:

A. Lipids B. Nucleic acids
C. Proteins D. Carbohydrates

Q.4 The type of chemical reaction which correctly justifies the synthesis of cellulose is:

A. Hydrolysis B. Condensation
C. Decarboxylation D. Reduction

Q.5 Which of the following is not a macromolecule?

A. Nucleic acid B. Glucose
C. Polysaccharides D. Proteins

Q.6 Most common ring structure formed by glucose molecule is:

A. 4 cornered B. 5 cornered
C. 6 cornered D. 7 cornered

Q.7 Monosaccharides are major components of:

A. DNA, ATP, ribulose bisphosphate and cysteine
B. DNA, NADP, ATP and ribulose bisphosphate
C. DNA, NAD and Insulin
D. DNA, RNA and myosin

Q.8 The type of polysaccharides which can be stored in plants and animals are_____ and _____, respectively.

A. Starch, cellulose B. Glycogen, cellulose
C. Starch, glycogen D. Glycogen, starch

Q.9 _____is the most abundant carbohydrate in nature.

A. Cellulose B. Dextrins
C. Chitin D. Starch

Q.10 It is an example of keto-triose, produced by the splitting of fructose 1,6-bisphosphate during glycolysis:

A. Glyceraldehyde B. Ribose
C. Dihydroxyacetone D. Xylulose

Q.11 Identify the type of carbohydrates which has high molecular weight and sparingly soluble in water:

A. Monosaccharides B. Oligosaccharides
C. Disaccharides D. Polysaccharides

Q.12 1,4-glycosidic linkage is found in all of the following carbohydrates except:

A. Sucrose B. Maltose
C. Lactose D. Amylose

Q.13 All of the following are common in all amino acids except:

A. Amino group B. Carboxyl group
C. Alpha carbon D. R-group

Q.14 The number of amino acids that have been found to occur in cells and tissues are:

A. 170 B. 25
C. 20 D. 45

Q.15 A protein molecule is related to all of the following except:

A. Homopolymer B. Polypeptide
C. Heteropolymer D. Peptide bond formation

Q.16 Which of the following holds the alpha helix of protein in its place?

A. Hydrogen bond B. R-group
C. Amino group D. Disulphide bond

Q.17 The most abundant protein to be found in animals is:

A. Myoglobin B. Hemoglobin
C. Collagen D. Albumin

Q.18 Which of these is not significant to maintain quaternary structure of proteins?

A. Peptide bonds
B. Hydrogen bonds
C. Ionic bonds
D. Hydrophobic interactions

Q.19 In an insulin molecule, the polypeptide chains are held together by:
A. Peptide bond
B. Disulphide bridges
C. Hydrogen bond
D. Ionic interaction

Q.20 If a protein molecule having two polypeptide chains and 990 amino acids, then how many water molecules were released during its synthesis?
A. 987
B. 988
C. 989
D. 990

Q.21 The structure of a fibrous protein comprises of polypeptide chains in the form of:
A. Cluster
B. Spherical or curled up ball
C. Flat uncoiled chains
D. Long strands or fibrils

Q.22 All of the following are included in lipids except:
A. Acylglycerols
B. Terpenoids
C. Sphingolipids
D. Chitin

Q.23 Acylglycerols are esters formed by condensation reaction between:
A. Fatty acids and water
B. Fatty acids and glucose
C. Fatty acids and alcohols
D. Fatty acids and phosphates

Q.24 A fatty acid is unsaturated if it contains double bond between:
A. Carbon and hydrogen
B. Carbon and oxygen
C. Carbon and carbon
D. Oxygen and oxygen

Q.25 Specific properties of tail in phospholipid molecule is due to:
A. Glycerol
B. Phosphate group
C. Fatty acid
D. Nitrogenous base

Q.26 From the following options, identify an example of phospholipids:
A. Palmitic acid
B. Butyric acid
C. Lecithin
D. Phosphatidic acid

Q.27 Cuticle is an example of:
A. Acylglycerol
B. Wax
C. Phospholipid
D. Terpenoids

Q.28 The hormones of adrenal cortex and gonads belong to:
A. Terpenoids
B. Diacyglycerol
C. Glycolipds
D. Tyrosine

Q.29 It is not a chemical component of lecithin molecule:
A. Isoprenoid
B. Fatty acids
C.Glycerol
D. Phosphate group and choline

Q.30 What are the features of triglycerides?

	Polar	**Less dense Than water**	**Higher energy value than carbohydrates**	**Lower proportion of hydrogen than in carbohydrates**
A.	✓	✓	×	×
B.	✓	×	✓	✓
C.	×	✓	✓	×
D.	×	×	×	✓

Q.31 The combination of a pentose sugar with a base result in a compound known as:
A. Nucleotide
B. Nucleic Acid
C. Nucleoside
D. Polynucleotide

Q.32 Phosphodiester bond is:
A. P—O—C—P—O—C
B. C—O—P—O—C
C. C—O—P
D. C—N—C—O—P

Q.33 Which one is an example of mono-nucleotide?
A. Adenosine
B. Guanine
C. ATP
D. NAD^+

Q.34 All of the following molecules are directly synthesized from DNA except:
A. DNA
B. tRNA
C. Protein
D. mRNA

Q.35 It is the usual mode of flow of genetic information within the cells:
A. DNA → Ribosome → Protein
B. DNA → rRNA → Protein
C. DNA → tRNA → Protein
D. DNA → mRNA → Protein

Q.36 Most of the cellular secretions are _____ in nature.
A. Glycoprotein
B. Nucleolipid
C. Glycolipid
D. Nucleohistone

Q.37 _____ play an important role in regulation of gene expression.

A. Glycoprotein
B. Nucleolipid
C. Glycolipid
D. Nucleohistone

Q.38 Enzymes increase the rate of reaction by:

A. Increasing temperature
B. Decreasing activation energy
C. Decreasing pH
D. Increasing product concentration

Q.39 All of the following correctly describe the active site of an enzyme except:

A. It is small relative to the entire enzyme
B. It is two dimensional in structure
C. Specificity is defined by arrangement of certain amino acids
D. It initially binds substrates by weak attractions

Q.40 The non-protein part of enzyme which is covalently and permanently bonded is called:

A. Prosthetic group
B. Co-Enzyme
C. Co-Factor
D. Activator

Q.41 It acts as precursor substance for coenzymes used by various enzymes during cellular metabolism:

A. Proteins
B. Carbohydrate
C. Nucleic acids
D. Vitamins

Q.42 According to _____ model, the active site of enzyme is modified as the substrate interacts with enzyme.

A. Induced fit
B. Emil Fischer
C. Lock and key
D. Fluid Mosaic

Q.43 Ionization of active sites and substrates are affected by:

A. Slight change in temperature
B. Extreme change in temperature
C. Slight change in pH
D. Extreme change in pH

Q.44 If due to high temperature, globular structure of enzyme is destroyed, enzyme is said to be:

A. Activated
B. Inactivated
C. Denatured
D. Catalyzed

Q.45 The competitive inhibitors have structural similarity with:

A. Active site
B. Substrate
C. Binding site
D. Co-enzyme

Q.46 In eukaryotes, enzymes are mostly:

A. Present in extracellular fluid
B. Attach to membrane system
C. Suspended in cytoplasm
D. Present in lumen of organs

Q.47 Succinate dehydrogenase converts succinate into:

A. Malate
B. Citrate
C. Malonic acid
D. Fumarate

Q.48 Any agent which reduces or stops the rate of reaction of enzymes is termed as:

A. Inhibitors
B. Promoter
C. Repressors
D. Activator

Q.49 It is the common requirement of all enzymes working in living organisms:

A. Acidic medium
B. Basic medium
C. Aqueous medium
D. Alkaline medium

Q.50 If all the active sites are occupied, then rate of reaction would be:

A. Minimum and constant
B. Zero and constant
C. Maximum and accelerating
D. Constant and maximum

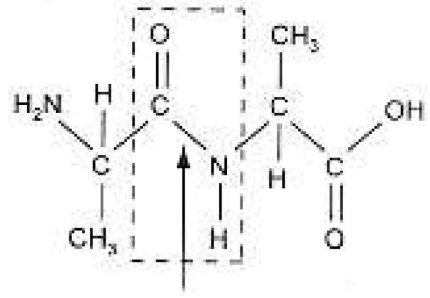
Q.51 Ribosomes exist as separate subunits that bind together during protein synthesis. What do these sub units consist of?

A. mRNA and protein
B. mRNA and tRNA
C. rRNA and protein
D. rRNA and tRNA

Q.52 Which type of reaction takes place when starch molecules are converted into reducing sugars?

A. Condensation
B. Polymerization
C. Hydrolysis
D. Synthesis

Q.53 The diagram shows part of a polymer.



Which molecule is used to break the bond indicated by the arrow?

A. Amino acid
B. Amylase
C. Peptide
D. Water

Q.54 The most abundant carbohydrate found in muscles and liver of animals is:

A. Cellulose
B. Polysaccharides
C. Starch
D. Glycogen

Q.55 Sucrose is non-reducing due to:

A. 1, 4-Glycosidic bond between two glucose
B. 1, 2-Glycosidic bond between glucose and fructose
C. 1, 2-Glycosidic bond between two glucose
D. 1, 4-Glycosidic bond between glucose and fructose

Q.56 How many haem groups are there in one molecule of human haemoglobin?

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

Q.57 In aqueous medium, the most stable tertiary conformation is that in which:

A. Hydrophobic amino acids are buried inside
B. Hydrophilic amino acids are buried inside
C. Hydrophobic amino acids are on the surface
D. Only hydrophilic amino acids are present in it

Q.58 Which substance contains carbon, hydrogen, oxygen and nitrogen?

A. Collagen
B. Amylopectin
C. Glycogen
D. Triglyceride

Q.59 What will break an ionic bond between amino acids?

A. Condensation
B. Hydrolysis
C. Low temperature
D. pH change

Q.60 How many fatty acids residues are normally present in a phospholipid molecule?

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

Q.61 Which statement about triglycerides is correct?

A. These are made up of three fatty acids combined with glycogen
B. They are more saturated with hydrogen compared with phospholipids
C. They form bilayer in the membranes of cells
D. They have a lower ratio of oxygen to carbon compared with carbohydrates

Q.62 How many phosphodiester bonds are present in one molecule of ATP?

A. 0
B. 1
C. 2
D. 3

Q.63 An enzyme and substrate react through a specific site present in the enzyme known as:

A. Building site
B. Catalyst site
C. Active site
D. Allosteric site

Q.64 Which statement is true of all enzymes?

A. They are denatured at temperature above 60°C
B. They are inactivated at low pH values
C. They catalyze the breakdown of large molecules into smaller ones
D. They reduce the amount of energy required to start a reaction

Q.65 What is the effect of an increasing substrate concentration on the degree of inhibition of an enzyme-controlled reaction?

	Competitive inhibition	Non-competitive inhibition
A.	Decreased	Increased
B.	Decreased	No change
C.	Increased	Decreased
D.	No change	Increased

Q.66 Dipeptide means.

A) two Similar amino acids attached by peptide bond
B) two dissimilar amino acids attached by peptide
C) two similar or dissimilar amino acids attached by peptide bond
D) two Similar or dissimilar proteins attached by bond

Q.67 What is ribonucleoside.

A) ribose + nucleic acid
B) ribose + phosphate
C) ribose + nitrogen base
D) ribose + adenine

Q.68 Which of the following are linked together to form proteins.

A) phosphate
C) nitrogen base
B)sugar
D) amino acids

Q.69 In a typical nucleotide, phosphoric acid IS attached to pentose sugar at carbon number:

A) 1
B) 3
C) 2
D) 5

Q.70 Which of the following nucleotide Is not found In DNA?

A) d-AMP
B) d-UMP
C) d-GMP
D) d-CMP

Q.71 Link formed between nitrogenous base and pentose sugar Is :

A) C-C link
B) C-N link
C) C.O link
D) C-O-P link

Q.72 X-ray diffraction analysis or DNA was first carried out by:

A) Fredrick Miescher
B) Rosalind Franklin
C) Maurice Wilkins
D) James Watson

Q.73 It is the major proportion of RNA in the cell:

A) mRNA
B) tRNA
C) rRNA
D) rDNA

Q.74 There are the most important group of protein which are biologically active:

A) Ribozymes
B) hormones
C) enzymes
D) coenzymes

Q.75 A character that is applied to all co-factors for enzymes:

A) Organic
B) protein
C) inorganic
D) non-protein

Q.76 On hydrolysis nucleoside will not yield

A) Pyrimidine's
B) Pentose sugar
C) Purines
D) Phosphoric acid

Q.77 According to the induce fit model substrate induces change In

A) Enzyme function
B) enzyme structure
C) Enzyme activity
D) Enzyme composition

Q.78 Fats are solid due to presence of.

A) saturated fatty acids .
B) Glycerols
C) Unsaturated fatty acid
D) ester

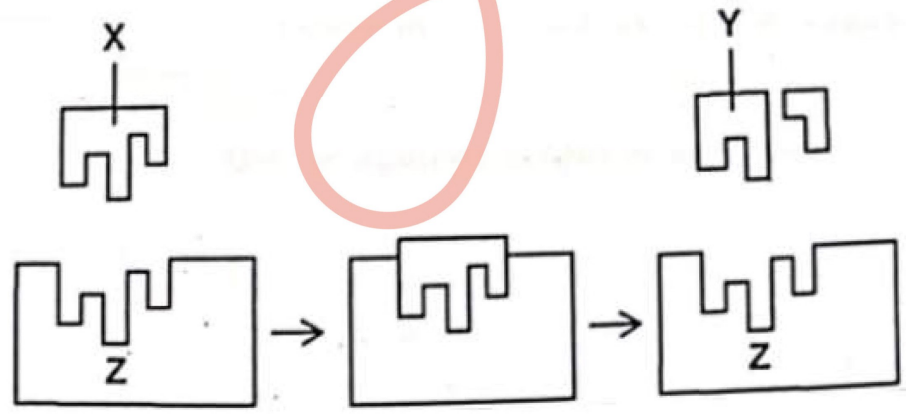
Q.79 Phosphodiester. bond is present in.

A) ATP
B) cAMP
C) ADP
D) None

Q.80 Which of the following is not found in plant.

A) sucrose
B) lactose
C) glucose
D) fructose

Q.81 The diagram represents a model of enzyme action.



Option	X	Y	Z
A)	Enzyme	Product	Subtract
B)	Enzyme	Subtract	Product
C)	Subtract	Enzyme	Product
D)	Subtract	Product	Enzyme

Q.82 The number of carbon atoms in monosaccharide vary from.

A) 3 to 6
B) 3 to 7
C) 2 to 7
D) 3 to 5

Q.83 In a polysaccharide chain like glycogen the right end is called reducing end since.
A) -CHO group is engaged in glyosidic linkage
B)-CHO group is free
C)-CH_3 group is engaged in glyosidic linkage
D)-CH_3 group may free

Q.84 Inhibitors have structural similarity with substrate:
A) Irreversible
B) Competitive
C) non-competitive
D) All of the above

Q.85 One which help enzyme and is an organic non protein
A) Activator
B) Co enzyme
C) Cofactor
D) none of these

Q.86 Which of the following is a coenzyme?
A) NAD
B) NADP
C) FAD
D) All of above

Q.87 At a temperature below the freezing point of an enzyme is
A) Unaffected
B) Slightly in activated
C) Inactivated
D) Killed

Q.88 The most important property of an enzyme is its
A) Composition
B) Thermal denaturation
C) Solubility
D) Specificity

Q.89 Enzyme inhibition caused by a substrate analog is
A) Competitive
B) In competitive
C) Noncompetitive
D) Semi-competitive

Q.90 The smallest R group in any amino acid is :
A) S
B) H
C) NH_2
D) CH_3

Q.91 In the DNA molecule.
A) The total amount of purine nucleotides and pyrimidine nucleotides is not always equal
B) There are two strands which run parallel in the 5' — 3' direction
C) The proportion of adenine in relation to thymine varies with the organism
D) There are two strands which run antiparallel one 5' — 3' direction and other in 3' — 5'

Q.92 Which one of the following is correct sequence of carbohydrates in increasing order of complexity of chemical structure.
A) oligosaccharides triose starch sucrose maltose
B) sucrose starch oligosaccharides maltose trioses
C) triose glucose maltose oligosaccharide starch
D) triose glucose maltose oligosaccharide starch

Q.93 Each beta chain of a hemoglobin molecule contains:
A) 21 amino acids
B) 141 amino acids
C) 30 amino acids
D) 146 amino acids

Q.94 Enzyme B requires Zna2+ in order to catalyze the conversion of substrate X. The zinc is best identified as a (n):
A) Coenzyme
B) Substrate
C) Cofactor
D) Product

Q.95 What about enzymes is wrong?
A) Thermo labile
B) Catalysts
C) Proteins in nature
D) None of these

Q.96 Which will cause the broken down of substrate?
A) Enzyme substrate complex
B) Enzyme + Optimum pH
C) Enzymes+ substrate + water
D) Enzyme + Optimum pH & Temperature

Q.97 The pair of nitrogen base in DNA is conjugated with.
A) disulphide bond
B) peptide bond
C) hydrogen bond
D) glyosidic bond

Q.98 Which one of the following pairs is
A) triose sugar — glyceraldehydes — aldo sugar
C) pentose sugar — ribulose — keto sugar
B) hexoses sugar — fructose —aldo sugar —
D) trisoe sugar — dihydroxy acetose - keto sugar

Q.99 Which one of the following pairs is matched.

A) galactose - lactose
B) fructose - galactose
C) fructose - glucose
D) ribose – Deoxyribose

Q.100 The function or tRNA is:

A) To carry genetic information's from DNA to
B) To synthesize protein
C) Pick up amino acids and transfer them to
D) Constitute ribosomes

Q.101 Glucose + Fructose → Sucrose H_2O

A) Hydrolysis
B) Denaturation
C) Condensation
D) Incorporation synthesis

Q.102 Distance between twist of DNA molecule is:

A) 31 A"
B) 34 A"
C) 24 A"
D) 44 A"

Q.103 Extreme changes in pH cause denaturation of enzyme by breaking :

A) bond
B) ionic bond
C) hydrogen
D) ester

Q.104 Fatty acids are found in all of the following except:

A) Acylglycerols
B) waxes
C) phospholipids
D) terpenoids

Q.105 Variability among different types of Acylglycerols is due to :

A) glycerol's
B) ketones
C) fatty acids
D) isoprenoid

Q.106 It is not a component of phosphatidic acid:

A) glycerol
B) phosphoric acid
C) fatty acid
D) base

Q.107 A-helix _____ amino acids in each turn of the helix:

A) 3.0
B) 3. 6
C) 3.5
D) 3.8

Q.108 Silk is chemically:

A) Lipid
B) Protein
C) wax
D) Carbohydrate

Q.109 Pick the odd one

A) Maltose
B) Cellulose
C) Sucrose
D) Lactose

Q.110 The RNA transporting-amino acid to the protein synthesizing site known as.

A) t-RNA
B) m-RNA
C) r-RNA
D) any one of a.b,c

Q.111 Which the following pair regarding to biological importance of carbohydrates is not correct match.

A) Cellulose — forms the plant cell wall
B) Glycogen— reserve food in animals
C) Ribose sugar — structural components of ATP
D) Galactose — the most widely used in respiration

Q.112 Find out the miss matched pairs.

A) Protein — important compounds of nucleus
B) Nucleic acid — major components Of chromosomes
C) Amino acid — an amphoteric Compound
D) Enzymes — colloidal catalysts

Q.113 Two amino acids are attached due to:

A) Disulphide bonds
B) Hydrogen bond
C) Glycosidic bond
D) Peptide bond

Q.114 Phosphoric acid has the ability to develop_____ with OH group Of pentose sugar

A) Hydrogen bond
B) Covalent bond
C) Ester linkage
D) None of these

Q.115 NAD is an important:

A) Enzyme
B) Coenzyme
C) Hormone
D) Vitamin

Q.116 An amino acid has a minimum of _____ carbon atoms and_____ nitrogen atom;

A) 1 & 2
B) 2 & 2
C) 2 & 1
D) 1 & 1A

Q.117 Segment of DNA has 120 adenine and 120 cytosine bases. The total number of nucleotides present in the segment is

A) 120 B) 200
C) 240 D) 480

Q.118 The bond formed between glucose and fructose to from sucrose is

A) 1, 4 Glycosidic bond B) 1, 2 Glycosidic bond
C) 1, 6 Glycosidic bond D) 1, 3 Glycosidic bond

Q.119 The sugar Component of DNA molecule has an empirical formula:

A) $C_5H_{10}O_4$ B) $C_4H_{10}O_5$
C) $C_5H_{10}O_5$ D) $C_6H_{12}O_6$

Q.120 In glycogen, which kind or linkage is found between adjacent glucose molecules?

A) 1, 4 B) 1, 6
C) 1, 4 and 1, 6 D) 1, 2 and 1-4

Q.121 Which of following is an example of phospholipid?

A) Palmitic acid B) Arachidonic acid
C) Lecithin D) Glycerol

Q.122 Which of the following is incorrect about lipids?

A) On basis of single and double bonds they are divided into fats and oils
B) Neural tissues are made up of neutral fats only
C) Phospholipids are never form part of cell membrane
D) Lipids store more •energy then proteins

Q.123 Solubility, high heat of vaporization and high heat capacity of water in due to?

A) Its polar nature B) Its covalent bonds
C) Its ionic nature D) Polar and ionic nature

Q.124 Not true for co-factor of enzyme

A) Serve as bridge B) Provide source of chemical energy
C) Is non protein D) React with substrate

Q.125 In which of the following groups, all are polysaccharides?

A) Glycogen, sucrose, maltose B) Glycogen, cellulose, starch
C) Sucrose, glucose, fructose D) Maltose, lactose, fructose

Q.126 The following molecule represents a Simplest sugar

A) Fructose B) Sucrose
C) Ager D) G3P

Q.127 The distinctive characteristic and functional groups of fats is

A) Ketone B) Alcohol
C) Peptide D) Ester

Q.128 Vegetable oils are

A) Sodium salts of higher fatty acids
B) Mixture of sodium and potassium salts of higher fatty acids
C) Potassium salts of higher fatty acids
D) Glycerides of fatty acids

Q.129 Each fat molecule is formed from

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

Q.130 A protein rich in lysine and arginine behave as

A) Acidic protein B) Neutral protein
C) Basic Protein D) Buffer protein

Q.131 Plants synthesize proteins from

A) Sugars B) Fatty acids
C) Amino acids D) Phospholipids

Q.132 The primary structure of a protein is maintained due to

A) Glycosidic bonds B) Hydrogen bonds
C) S-S linkage D) Peptide bonds

Q.133 The number of different amino acids discovered yet

A) 26 B) 20
C) 170 D) 270

Q.134 Which Of the following is a type of dinucleotide?

A) DNA B) RNA
C) ADP D) NAD

Q.135 Which of the following sequence is correct on the basis of increasing molecular weight?

A) DNA, ATP, NADP, AMP
B) AMP, ADP, NADP, DNA
C) ATP, AMP, DNA, NADP
D) ATP, ADP, NADP, DNA

Q.136 These are polyhydroxy aldehydes or ketones:

A) Carbohydrates
B) Lipids
C) Proteins
D) Nucleic acids

Q.137 These are the primary products of photosynthesis:

A) Carbohydrates
B) Lipids
C) Proteins
D) Nucleic acids

Q.138 Cotton is pure form of:

A) Starch
B) Cellulose
C) Fibrous protein
D) Silk fiber

Q.139 Fatty acids found in acylglycerols in animals are commonly:

A) Straight chains
B) Branched chains
C) Ringed
D) All A, B, C

Q.140 Classification of amino acids into different groups depends upon:

A) Amino group
B) Carboxyl group
C) Alpha carbon
D) Alkyl group

Q.141 Scale model of DNA was built by:

A) Frederick Miescher
B) Erwin Chargaff
C) James D. Watson
D) Maurice Wilkins

Q.142 Genetic message for the formation of a particular protein resides at:

A) mRNA
B) tRNA
C) rRNA
D) All A, B, C

Q.143 A statement that is not true for enzymes:

A) Increase rate of reaction
B) Affect nature of end products
C) Required in small amounts
D) Sehsitive to environment

Q.144 At unlimited substrate concentration, rate of reaction depends directly upon:

A) Substrate
B) Enzyme
C) Product
D) Intermediate

Q.145 Slight change in optimum pH can affect enzyme activity due to:

A) Destruction of globular structure
B) Denaturation of enzyme structure
C) Effect on ionic state of active site
D) Breakdown of hydrogen bonds

Q.146 An enzyme that works in liver at very high pH:

A) Pepsin
B) Chymotrypsin
C) Lipase
D) Arginase

Q.147 An enzyme inhibitor is a chemical substance that:

A) Attaches substrate with enzyme
B) Transforms substrate into product
C) Blocks active site of enzyme
D) Activates catalytic site of enzyme

Q.148 Which one will be at tertiary structural level?

A) Haemoglobin
B) Fibrin
C) Myoglobin
D) Keratin

Q.149 General formula for monosaccharides can best be expressed as:

A) $C_x(H2O)_y$
B) $C_n(H_2O)_n$
C) $(CH_2O)_n$
D) $C(H_2O)_{n-1}$

Q.150 Number of ester bonds in a trinucleotide:

A) 1
B) 2
C) 3
D) 5

Q.151 Presence of which type of bond shows more complexity among carbohydrates?

A) 1-2 glycosidic linkage
B) 1-6 glycosidic linkage
C) 1-4 glycosidic linkage
D) 1-3 glycosidic linkage

Q.152 Which of the following does not contain carbohydrates?

A) Pectin
B) Dextrin
C) Cutin
D) Chitin

Q.153 Which one is not a nitrogenous busc?

A) Adenine
B) Lecithin
C) Ethanolamine
D) Choline

Q.154 Which substance contains carbon, hydrogen, oxygen and nitrogen?

A) Collagen
B) Glycogen
C) Amylopectin
D) Triglyceride

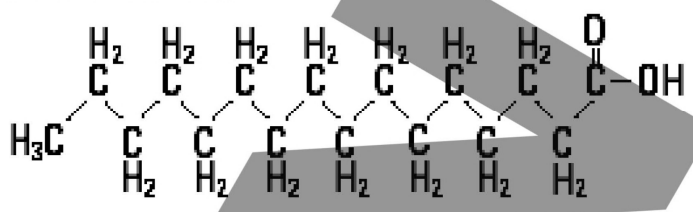
Q.155 What is the effect of an increasing substrate concentration on the degree of inhibition of an enzyme-controlled reaction?

	Competitive inhibition	Non-competitive inhibition
A.	Decreased	Increased
B.	Decreased	No change
C.	Increased	Decreased
D.	No change	Increased

Q.156 Formation of trisaccharide involves release of _____ water molecules.

A) 2 B) 3
C) 1 D) 4

Q.157 Given below is the formula of:



A) Palmitic acid B) Oleic acid
C) Acetic acid D) Butyric acid

Q.158 A triglyceride molecule has:

A) Three fatty acids with two glycerol mplecules
B) Three fatty acids with one glycerol molecule
C) Two fatty acids with two glycerol molecules
D) One fatty acid with one glycerol molecule

Q.159 Starch is:

A) Monomer & micromolecule B) Monomer & macromolecule
C) Pdlymer & micromolecule D) Polymer & macromolecule

Q.160 Chemical reaction which correctly justifies the synthesis of cellulose is:

A) Hydrolysis B) Decarboxylation
C) Condensation D) Reduction

Q.161 Types of amino acids that are used to form most of the proteins:

A) 18 B) 20
C) 21 D) 25

Q.162 When an assembly of more than one globular polypeptides occurs then it is known as _____ structure of protein.

A) Secondary B) Primary
C) Tertiary D) Quaternary

Q.163 Cuticle is an example of:

A) Acylglycerols B) Phospholipids
C) waxes D) Terpenoids

Q.164 In a molecule of DNA, nucleotide of thymine pairs with:

A) Datp B) dAMP
C) dUTP D) dGTP

Q.165 How many nitrogen atoms are present in adenine?

A) 3 B) 4
C) 5 D) 6

Q.166 The catalytic activity of an enzyme is restricted to a small portion of the structure known as:

A) Active site B) Allosteric site
C) Binding site D) Substrate site

Q.167 Most abundant organic compound in a bacterial cell is:

A) water B) RNA
C) Protein D) Lipid

Q.168 Water acts as temperature stabilizer in organism' due to its very high:

A) Heat of vaporization B) Ionic properties
C) Heat capacity D) Solubility

Q.169 Hydrolysis of which of the following will give two glucose molecules?

A) Sucrose B) Maltose
C) Lactose D) Mannose

Q.170 Which of the following is a non-reducing carbohydrate?

A) Maltose B) Glucose
C) Cellulose D) Lactose

Q.171 Most common stored fats in our body belong to which group of lipids?

A) Steroids
B) Phospholipids
C) Glycolipids
D) Acylglycerols

Q.172 Which one is used in formation of lecithin?

A) Serine
B) Ethanolamine
C) Choline
D) Adenine

Q.173 Which group of amino acid is involved in formation of peptide linkage with other amino acid?

A) CH_3
B) Alpha - Carbon
C) Amino group
D) R-group

Q.174 Which type of bond cannot be found in tertiary structure of a protein?

A) Peptide bond
B) Ionic bond
C) H-bond
D) Ester bond

Q.175 Which amino acid is involved in formation of disulphide bridges?

A) Serine
B) Cysteine
C) Arginine
D) Methionine

Q.176 Most abundant type of RNA in cytoplasm is:

A) rRNA
B) tRNA
C) mRNA
D) rDNA

Q.177 Which is mainly responsible for the movement of chromosomes during anaphase of cell division?

A) RNA
B) Lipids
C) Proteins
D) DNA

Q.178 What is the Common character in fructose and dihydroxyacetone?

A) Aldehyde group
B) Ketonic group
C) Number of carbons
D) Number of OH groups

Q.179 Active site of enzyme is made up of:

A) Few amino acids
B) Co-factors
C) Bulk of amino acids
D) Bulk of amino acids and co-factor

Q.180 What is objection on lock and key model of enzyme action?

A) Active site has different charges
B) Active site shape is rigid
C) Active site shape is flexible
D) Binding site is not a separate site

Q.181 Salivary amylase can digest starch optimally at:

A) Slightly acidic pH
B) Highly basic pH
C) Highly acidic pH
D) Slightly basic pH

Q.182 Which one of the following are found rarely in nature, and occur in some bacteria?

A) Hexoses
B) Pentoses
C) Trioses
D) Tetroses

Q.183 The main source of carbohydrates for animals is:

A) Starch
B) Chitin
C) Glycogen
D) Cellulose

Q.184 How many carbon atoms contribute to form a pyran ring of glucose?

A) 7
B) 6
C) 5
D) 4

Q.185 Lipids store high amount of energy because of higher proportion of:

A) C - H bond
B) C -C bond
C) C-N bond
D) C-O bond

Q.186 Phospholipids are derivatives of phosphatidic acid. Phosphatidic acid contains all of the following except:

A) Glycerol
B) Phosphoric acid
C) Fatty acid
D) Nitrogenous base

Q.187 Lipids are usually non-polymers. The only polymers found in lipids are included in:

A) Acylglycerols
B) Phospholipids
C) Waxes
D) Terpenoids

Q.188 Keratin is a protein of:

A) Muscles
B) Spindles
C) Hairs
D) Blood

Q.189 The compound formed by combination of a base and a pentose sugar is called:

A) Ester
B) Nucleotide
C) Nucleoside
D) Phospholipid

Q.190 All of the following are true for both DNA and RNA except:

A) Contain pentose sugar, nitrogenous base and phosphoric acid
B) Are nucleic acids and formed by condensation of nucleotides
C) Each containing four different types of nitrogenous bases
D) Both are double stranded molecules of nucleic acids

Q.191 Point out the odd pair:

A) Protein, peptide bond
B) Fats, ester bond
C) Polysaccharide, glyosidic bond
D) ATP, hydrogen bond

Q.192 %age of ribosomal RNA out of all RNAs is:

A) 3-4%
B) 50%
C) 10-20%
D) 80%

Q.193 The biologically active proteins are known as:

A) Glycoproteins
B) Activators
C) Enzymes
D) Inhibitors

Q.194 In a eukaryotic cell, most of the enzymes are:

A) Dissolved in cytoplasm
B) Attached to membrane system
C) Float in cytoplasm
D) None of these

Q.195 They check the reaction rate by occupying the active sites. or destroying the globular structure:

A) Irreversible inhibitors
B) Competitive inhibitors
C) Reversible inhibitors
D) Non-competitive inhibitors

Q.196 Number of peptide bonds in insulin :

A) 51
B) 49
C) 50
D) 48

Q.197 Insulin is a protein consisting of two polypepetide chains of amino acids held together by:

A) Peptide bonds
B) Gtycosidic bonds
C) Covalent
D) Disulphide

Q.198 Which one of the following reactions results in the conversion of amino acids to proteins

A) Condensation
B) Deamination
C) Phosphorylation
D) Transamination

Q.199 All of the following are keto sugars except

A) Ribulose
B) Glucose
C) Dihydroxyacetone
D) Fructose

Q.200 The chief form of carbohydrate stored in animals cells is

A) Glucose
B) cellulose
C) Starch
D) Myoglobin

Q.201 The main source of carbohydrates for animals is

A) Starch
B) Chitin
C) Glycogen
D) Cellulose

Q.202 Number of peptide bonds in a molecule of hemoglobin is

A) 574
B) 572
C) 573
D) 570

Q.203 How many carbon atoms contribute to form a pyran ring (glucopyranose)?

A) 7
B) 6
C) 5
D) 4

Q.204 On hydrolysis triglyceride yields:

A) A glycerol and three fatty acids
B) A fatty acid and three glycerol
C) A glucose and three fatty acids
D) A maltose and two fatty acids

Q.205 Both DNA & RNA

A) Are single standard molecules
B) Contain the same four nucleotide bases
C) Have the same five-carbon sugar
D) Contain phosphate group

Q.206 Which of the following characteristics does not apply to a structural protein such a silk?

A) Peptide bond
B) Specific secondary structure
C) Active site
D) Hydrogen bonds between separate polypeptide chains

Q.207 Which of the following is not a function of polysaccharides in organisms?

A) Storage of heredity material
B) Energy storage
C) Formation of cell walls
D) Structural support

Q.208 When a peptide is formed, which statement is correct?

A) One amino Eid loses a hydroxyl group from its amine group
B) One amino acid loses a hydroxyl group from its carboxyl group.
C) Both amino acid lose a hydrogen atom from their amine group.
D) Both amino acid lose a hydrogen atom from their group,

Q.209 When hydrolysed, which molecule have products containing a carboxyl group?

1. phospholipids
2. polysaccharides
3. Proteins

A) 1 and 2
B) 1 and 3
C) 2 and3
D) 3 only

Q.210 Which term most nearly means substrate?

A) Reactant
B) Enzymes lower
C) Activation energy
D) Active site

Q.211 Enzymes lower the _____ of the reaction:

A) pH
B) Temperature
C) Activation energy
D) speed

Q.212 The type of inhibition in which inhibitor has no structural similarity to substrate with enzyme at other than the active site is called.

A) Irreversible inhibition
B) Competitive inhibition
(C) Non-competitive and reversible inhibition
D) Reversible inhibition

Q.213 Which answer choice matches the functions listed to the correct RNA types?

I. Interprets a codon as an amino acid
II. Binds to a gene transcript
Ill. Contains information for assembling a protein

A) l. mRNA: II. rRNA; Ill tRNA
B) l. mRNA: II. tRNA; Ill, rRNA
C) l. tRNA: II. mRNA; Ill. rRNA
D) l. tRNA: II. rRNA; Ill. mRNA

Q.214 J. D. Watson and F.H. Crick utilized X-ray diffraction data purposed by:

A) Rosalind Wilkins and Maurice Franklin
B) Sutton and Boveri
C) Maurice Wilkins and Rosalind Franklin
D) None of these

Q.215 The optimum pH for sucrase is:

A) 680
B) 4.50
C) 5.50
D) 7.60

Q.216 Such cofactor that make the weak linkage with the Enzyme:

A) Reversible inhibitors
C) Activator
B) co Enzyme
D) Activator and Co Enzyme?

Q.217 It increases the Vibration of atoms violent Which up enzyme denature

A) PH
B) Inhibitors
C) Substrate cone
D) Heat

Q.218 Active site by virtue of its flexibility becomes complementary to substrate

A) Induced fit model
B) Emil Fischer's proposal
C) Lock and key model
D) Statement is wrong

Q.219 It has optimum pH of 9.0

A) Pancreatic lipase
B) Chymotrypsin
C) Arginase
D) Catalase

Q.220 Enzymes increase the rate of reaction by.

A) Increasing Temperature
C) Decreasing Activation Energy
B) Decreasing pH
D) Increasing-Activation Energy

Q.221 Which of the following combination of pair is absent in DNA?

A) A-T
B) C-G
C) A-U
D) T-A

Q.222 The inhibitors that bind tightly and to enzymes and destroy their globular Structure and catalytic activity are:

A) Reversible inhibitors
B) Irreversible inhibitors
C) Competitive inhibitors
D) Non-competitive inhibitors

Q.223 Enzyme succinate dehydrogenase converts succinate into

A) Malate
B) Malonic acid
C) Citrate
D) Fumarate

Q.224 If the detachable cofactor is an inorganic ion then it is designated as:

A) Coenzyme
B) Prosthetic group
C) Holoenzyme
D) Activator

Q.225 The cornbination of a pentose sugar with a base result in a compound is known as:

A) Nucleotide
B) Nucleoside
C) Nucleic Acid
D) Polynucleotide

Q.226 Number of base pairs in one turn of DNA is:

A) 10
B) 2
C) 34
D) 54

Q.227 Which one of the following is an example of competitive inhibitor?

A) Glucose
B) Fumarate
C) Succinic Acid
D) Melonic acid

Q.228 Which sugar is not present in plants

A) Sucrose
B) Lactose
C) Glucose
D) Fructose

Q.229 All Coenzymes are derived from

A) Proteins
B) Nucleic acids
C) Carbohydrates
D) Vitamins

Q.230 Bond b/w phosphate and sugar in anucleotide is

A) H -bond
B) Phosphodiester bond
C) Covalent bond
D) Sulphide bond

Q.231 On the surface of _____ mRNA and tRNA interact to translate the information into from genes intro a specific proteins:

A) rRNA
B) Chrornosome
C) Ribosorne
D) Nuclesome

Q.232 Antiparallel strands of DNA molecules means

A) One strand tums anti-clock wise
B) The phosphate group of two DNA strands. at their ends share the same position
C) The phosphate group at the strands of DNA are in position (Poles)
D) One strand turns clock-wise

Q.233 The enzymes important in photosynthesis are found in:

A) Mitochondria
B) Chloroplast
C) Ribosomes
D) apparatus

Q.234 By increasing the enzyme molecules an increase in the number of _____ takes place:

A) Substrate molecules
B) Product molecules
C) Active sites
D) Inhibitor molecules

Q.235 Following are the properties of enzyme EXCEPT:

A) Enzymes are globular proteins
B) Not used up in chemical reactions
C) Have no effect on the nature of end
D) the activation energy of reactants

Q.236 A detachable organic co-factor is called:

A) Prosthetic group
B) Activator
C) Co-enzyme
D) Apenzyme

Q.237 Both of them can used again and again:

A) Hormones & Antibodies
B) Enzymes & Co-enzymes
C) Enzymes & substrates
D) Substrates & Products

Q.238 All three types of _____ are synthesized from _____ in the _____

A) RNA DNA. Nucleus
B) RNA Nucleus. DNA
C) DNA RNA Nucleus
D) Nucleus. RNA DNA

Q.239 This type of RNA consists of a single strand of variable length:

A) Messenger RNA
C) Transfer RNA
B) Ribosomal RNA
D) snRNA

Q.240 Small amount of an enzyme can accelerate chemical reactions means enzymes are _____ in their action:

A) Specific
B) Non-specific
C) Efficient
D) Accurate

Q.241 In a feedback mechanism, the final product _____ the enzyme of first step:

A) inhibits
B) Stimulates
C) Activates
D) Regulates

Q.242 If the enzyme concentration is _____ and amount of substrate is _____ a point is reached when a further increase in the substrate does not increase the rate of reaction, any more-

A) Increased, Increased
B) Increased. Decreased
C) Decreased , Increased
D) Keep constant.

Q.243 All enzymes can work at their maximum rate at a specific temperature called as:

A) Suitable temperature
B) Minimum temperature
C) Optimum temperature
D) Maximum temperature

Q.244 An enzyme with its co-enzyme or prosthetic group removed is designated as:

A) Apoenzyme
B) Co-enzyme
C) Holoenzyme
D) Co-factor

Q.245 Who proposed lock and key model to visualize substrate and enzyme action:

A) Koshland
B) Emil Fischer
C) Edward Bucher
D) J. B Sumner

Q.246 Is a chemical substance which can react in place of substrate, with enzyme, but is not transformed into

A) Cyanide
B) Inhibitor
C) Antibodies
D) Antimetabolites

Q.247 The role of enzyme controlled reaction may increase with increase in temperature

A) up to a certain limit
C) up to minimum level
B) up to maximum level
D) up to infinite level

Q.248 At high substrate level, further increase in the substrate does not increase the reaction rate because:

A) There is no enzyme
B) All the active sites of the enzyme are
C) There is no active site
D) All the active Sites of the enzyme are free

Q.249 Maximum amount of DNA occurs inside the nucleus , however a small amount of DNA is always located outside the nucleus in:

A) Mitochondria
B) Chloroplast
C) Plasmids
D) Mitochondria and Chloroplast

Q.250 The factor that affect the rate of enzyme catalysis actually effect _____ and _____ of enzyme:

A) Chemistry, Shape
B) PH and Temperature
C) Ionization and temerature
D) energy and Temperature

Q.251 In nucleic acids adenine can make a base pair with:

A) Guanine
B) Thymine
C) Uracil
D) Thymine or Uracil

Q.252 A DNA sample having 34% Will have what percentage of cytosine:

A) 16%
B) 32%
C) 34%
D) 68%

Q.253 Pepsin is a powerful_____ digestive enzyme

A) Carbohydrates
B) Proteins
C) Lipids
D) Nucleic acid

Q.254 Because of the structural similarity with the substrate they may be selected temporarily by the binding sites, but are not able to activate me catalytic sites:

A) Irreversible it inhibitors
B) Reversible inhibitors
C) Competitive inhibitors
D) Non-Competitive inhibitors

Q.255 The structure of the glucose and galactose are same except with regards to

A) 1st Carbon
B) 3rd Carbon
C) 2nd Carbon
D) 4th Carbon

Q.256 Enzyme are different from inorganic catalyst

A) Not being used up in reactions
B) Being proteinases in nature
C) Having high diffusion rate
D) Working at high temperature

Q.257 Glycerol is the back bone molecule for

A) Waxes
B) Triglycerides
C) Phospholipid
D) All of these

Q.258 A fatty acid is saturated if it

A) All internal carbon atoms in fatty acid chain contain at least two hydrogen
B) Contains Single bond between carbon
C) Contain double bond between carbon
D) A and B

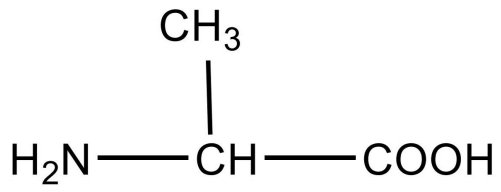
Q.259 Which of the following is mixture of compounds?

A) Acylglycerols
B) phospholipids
C) waxes
D) Terpenoids

Q.260 Phospholipids are derivatives of Phosphatidic acid. Phospholipids acid contains all of following except

A) glycerol
B) phosphoric Eid
C) fatty acid
D) Nitrogenous base

Q.261 This amino acid is called



A) Leucine
B) Alanine
C) Glycine
D) Arginine

Q.262 Each of the 20 naturally occuring amino acids has a different

A) NH_2 group
B) R Group
C) — COOH group
D) — OH group

Q.263 Which class of molecule is the major component of cell

A) Phospholipid
C) cellulose
B) wax
D) Triglyceride

Q.264 The two pyrimidine bases most commonly found in DNA are:

A) Uracil and thymine
B) Cytosine and thymine
C) Cytosine and uracil
D) Cytosine and Guanine

Q.265 Deoxyribonucleic acid, adenosine triphosphate and ribonucleic acid do not contain:

A) Bases
B) pentose
C) nucleotides
D) Peptides

Q.266 What is the advantage of DNA having wo complementary strands?

A) Pairing can occur between chromatids
B) Transcription and replication can occur simultaneously
C) Semi — conservative replication is possible
D) Diploid cells can inherit DNA from both parents

Q.267 Which of the following statements about strands of a newly replicated DNA molecule is

A) Both strands are made up of newly assembled nucleotides
B) One strand is new and the other is part of the original molecules
C) Both strands contain some nucleotides from the original molecules
D) The sugar — phosphate chains are and new bases are inserted between them

Q.268 Which statement describe base in nucleic acids?

A) Adenine cannot pair with either uracil or
B) Guanine is paired adenine
C) Hydrogen bonding can only occur between pyrimidine bases
D) Purine bases can only pair ,with pyrimdine

Q.269 What is the function of the enzyme DNA polymerase?

A) To build a strand of DNA using DNA as a ten-gate
B) To build a strand of DNA using a polypeptide as a template
C) To build a strand of mRNA using DNA as a template
D) To build a polypeptide using mRNA as a template

Q.270 Glyosidic seen in Lactose

A) Alpha 1-4 linkage
B) Alpha 1-6 linkage
C) Beta 1-4 linkage
D) Alpha 1-2 linkage

Q.271 What is the effect of the enzyme DNA ligase?

(B) DNA replication
(D) DNA transcription occurs

Q.272 Which of the following statement about the structure of DNA is incorrect?

A) one complete turn requires 3.4 10 nm and 10 bases pairs
B) The backbones of each strand run in opposite directions relative to each other
C) Each pair of nucleotides is held together by three hydrogen bonds
(D) The width of the molecule is a constant 2 nm

Q.273 An mRNA is 336 nucleotides long. including the inhibitor and termination codons The number of amino acids in the protein translated from this mRNA is

A) 10
B) 111
C) 112
D) 330

Q.274 Phosphodiester bond is formed between

A) Two Phosphate Group
B) One Phosphate & Two Hydroxyl Group
C) Two Phosphate & one Hydroxyl Group
D) Two Phosphate & Two Hydroxyl Group

Q.275 Proteins consist of definable sequences of amino acids arranged in a certain definite order. This was suggested for the first tinw by

A) PA Levene
B) F. Miescher
C) F. Sanger
D vernnon ingram

Q.276 The Inhibition caused by the competitive Inhibitor can be overcome by:

A) Increasing temperature of reaction
B) Decreasing temperature of reaction
C) Increasing concentration of substrate
D) Decreasing concentration of substrate

Q.277 Large RNA molecule displays more conformational changes than DNA double helices because _____.

A) Presence of triplex region
B) Occurrence of single stranded regions
C) Presence of unusual modified bases
D) Presence of ribose Sugars

Q.278 Pick up pyrimidine from following.

A) Adenine
B) Cytocine
C) Guanine
D) All are pyrimidine

Q.279 Which of following is Incorrect absent Monosaccharides?

A) C-5
B) C-9
C) C-6
D) All are correct

Q.280 What kind of glycosidic linkage is found In sucrose?

A) 1, 6
B) 1, 4
C) 2, 6
D) 1, 2

Q.281 Which one of the following molecules has the lowest molecular weight?

A) Sucrose
B) Lactose
C) Glucose
D) Cellulose

Q.282 Which of the following has the greatest number of glycosidic bonds?

A) Glucose
B) DNA
C) Amylose
D) Vitamin A

Q.283 The amount of DNA in picogram in kindly cells of chicken are:

A) 2.3
B) 2.4
C) 3.3
D) 1.3

Q.284 Choline contains how many carbon and nitrogen atoms

A) 4-1
B) 3-1
C) 5-1
D) 4-2

Q.285 A peptide chain attains secondary structures through the formation of_____

A) Ionic bonds
B) Hydrogen bonds
C) Di-sulfide bond
D) Peptide bond

Q.286 Amylopectin is soluble in

A) Hot water
B) Cold water
C) Soluble in both
D) Cold & Hot water

Q.287 Human cell amount of thymine 29% what would be the age of Guanine in cell:

A) 30
B) 29
C) 20
D) 23

Q.288 Pick up Globular protein which is defensive for body:

A) Enzymes
B) Hormones
C) Antibodies
D) All of these

Q.289 An example of a saturated fatty acid is_____

A) Palmitic acid
B) Oleic acid
C) Acetic Acid
D) Butaric Acid

Q.290 Proteins of hair, horns, feathers and other skin appendages is_____

A) Storage protein
B) Enzymatic protein
C) Structural protein
D) Hormonal protein

Q.291 The two chains of Insulin are held together by_____ ?

A) Covalent bond
B) Ionic bond
C) Hydrogen bond
D) Di-sulfide bridges

Q.292 Cholesterol is the basis of_____.

A) Starch
B) Carbohydrate
C) Protein
D) Steroids

Q.293 No of Atoms In Hemoglobin are:

A) 574
B) 9517
C) 9512
D) 57491

Q.294 Which form head in phospholipids?

A) Fatty acids
B) Glycerol
C) Phosphoric acid
D) Phosphoric acid and nitrogen group

Q.295 Percentage of lipoprotein in bacterial cell is:

A) 15
B) 22
C) 3
D) 18

Q.296 For the synthesis of 1gm of glucose solar energy required is:

A) 71.76 Kcal
B) 7177.0 Kcal
C) 717.6 Kcal
D) 717600 Kcal

Q.297 One of the following chemical bonds is not involved in the folding of protein:

A) Hydrogen bonds
B) Hydrophobic bonds
C) Peptide bonds
D) Ionic bonds

Q.298 Which is an aldo sugar?

A) Dihydroxyacetone
B) Glyceraldehyde
C) Fructose
D) Ribulose

Q.299 Which of the following enzyme is non — protein in nature?

A) Ribozyme
B) Lipase
C) Amylase
D) Sucrase

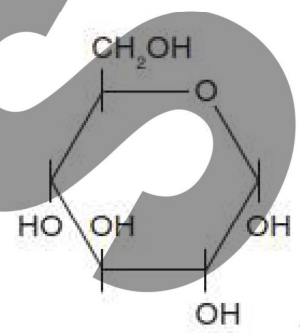
Q.300 If an enzyme solution is saturated with substrate, the most effective way to obtain an even faster yield of products would be:

A) Add more of the enzymes
B) Add an allosteric inhibitor
C) Add more substrate
D) Add a non-competitive inhibitor

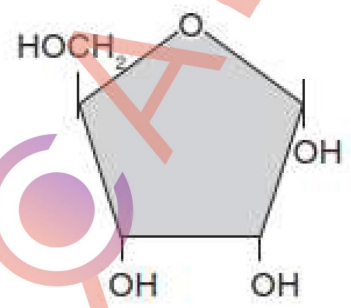
Q.301 The function of competitive inhibitors is defined by their ability to interact or bind to_____.

A) The active site of an enzyme
C) Non-competitive inhibitor
B) Regulatory sub-units of an enzyme
D) Enzyme cofactors

Q.302 Which of the following options correctly identifies the structural formulae shown in figure?



A



B

A) A — Fructose, B — Ribose
B) A — Glucose, B — Deoxyribose
C) A — Glucose B — Ribose
D) A — Glucose B — Fructose

Q.303 The detachable cofactor if it is an inorganic ion is called _____.

A) Activator
B) Coenzyme
C) Prosthetic group
D) All of these

Q.304 Chymotrypsin has optimum PH

A) 7.60
B) 5.50
C) 6.80
D) 7.00 - 8.00

Q.305 Which of the following is covalently bounded cofactor?

A) Prosthetic group
B) ATP
C) NADP
D) Mg^{2+}

Q.306 Which of the following is most unstable?

A) Product
B) Substrate
C) Enzyme-substrate complex
D) None of these

Q.307 An Inhibitor that Changes the overall Shape and chemistry of an enzyme is known

A) Anti-steric inhibitor
B) Non- Steric inhibitor
C) Competitive inhibitor
D) Non-competitive inhibitor

Q.308 At high temperature the rate of enzyme action decreases because the Increased heat:

A) Changes the pH of the system
B) Neutralize acids and bases in the system
C) Alters the active site of the enzyme
D) Increases the concentration of enzymes,

Q.309 A fatty acid is a compound made of a chain of carbon atoms and _____.

A) An acid group at one end
B) An amino group
C) Acid group at both ends
D) Amino group at both ends

Q.310 _____ protein has quaternary structure.

A) keratin
B) Silk
C) Hemoglobin
D) Fibrin

Q.311 Which bond provides stability to complex carbohydrates?

A) N-C
B) C-O-C
C) P-O-C
D) C-O-N

Q.312 Blood contains ————_percent of glucose.

A) 0.8 %
B) 0.08%
C) 0.06%
D) 6%

Q.313 Most common acyl glycerol is _____.

A) Animal fats
B) Plant fats
C) Triacyclglycerol
D) Diacylglycerol

Q.314 The basic unit of nucleic acid is

A) Pentose sugar
B) Nucleoid
C) Nucleoside
D) Nucleotide

Q.315 MRNA have AUG for methionine what will be present on TRNA.

A) Atg
B) Tac
C) Tag
D) Uac

Q.316 Which of the following groups are all polysaccharides?

A) Sucrose, glucose and fructose
B) Glycogen, sucrose and maltose
C) Maltose, lactose and fructose
D) Glycogen, cellulose and starch

Q.317 Lactose is composed of_____.

A) Glucose + galactose
B) Glucose + fructose
C) Fructose + galactose
D) Glucose + glucose

Q.318 Which of the following categories includes all others in the list?

A) Monosaccharide
B) Carbohydrate
C) Disaccharide
D) Polysaccharide

Q.319 Which of following is precursor of sex hormones.

A) Carbohydrates
B) Lecithin
C) Steroid
D) All of these

Q.320 The structural level of a protein least affected by a disruption in hydrogen bonding is

A) Primary level
B) Quaternary level
C) Secondary level
D) All structural levels

Q.321 _____ is the first microbe to have genome completely sequenced & was published in july 28,1995.

A) Streptococci Pneumonia
B) Campylobacter
C) Haemoplrilus
D) Saccharomyces

Q.322 The molecular formula for glucose is C6H12O6. What would be the molecular formula for a polymer made by linking ten glucose molecules together by dehydration reactions?

A) $C_{60}H_{120}O_{60}$
B) $C_{60}H_{100}O_{60}$
C) $C_{60}H_{111}O_{51}$
D) $C_{60}H_{102}O_{51}$

Q.323 No, of Amino acid found to be occur in cells & tissue are:

A) 20
B) 170
C) 25
D) 300 more then

Q.324 Iodine gives a red colour with:

A) Starch
B) Dextrin
C) Glycogen
D) Inulin

Q.325 Each turn of α-helix contains the amino acid residues (number):

A) 3.6
B) 3.0
C) 4.2
D) 4.5

Q.326 Nitrogen base in a phospholipid molecule attached with

A) Phosphoric
B) Butaric Acid
C) Acetic Acid
D) Palmitic Acid

Q.327 Protection against sudden thermal change is carried out by the help of:

A) Water
B) Salt
C) Ions
D) Bonds

Q.328 Percentage of water in an average brain cell is

A) 5%
B) 85%
C) 95
D) 80%

Q.329 Which property of lipids is significant for structural role of plasma membrane?

A) Hydrophilic
B) Hydrophobic
C) Catenation
D) Conjugation

Q.330 A bacterial cell contains _____ of water

A) 60%
B) 70%
C) 80%
D) 90%

Q.331 Two molecules belonging to different categories and combine with each other?

A) Macromolecules
B) Heteromolecules
C) Conjugated molecules
D) None

Q.332 The discovery about the presence of equal amount of adenine and thymine, also guanine and cytosine in DNA was elucidated by:

A) Erwin Chargaff
B) Fred Sanger
C) James Watson
D) Francis crick

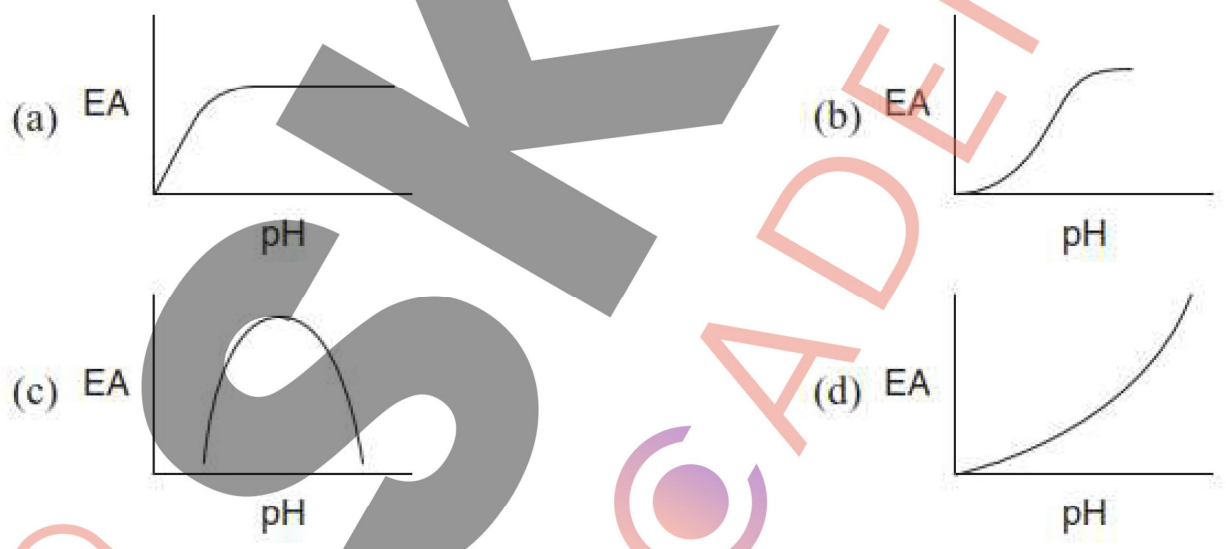
Q.333 Which makes the protein active and globular I Which structure provides specific shape and function to the protein?

A) Primary structure
B) Secondary structure
C) Tertiary structure
D) Sulphide bonds and peptide bonds

Q.334 Which of following used X-Rays diffraction of DNA

A) Erwin Charga
B) Maurice Wllkins
C) James D-Watson
D) Francis Crick

Q.335 Which one of the graphs shows the effect of pH on the enzymatic activity (EA)?



Q.336 Root tubers are rich source of:

A. Carbohydrates
B. Lipids
C. Proteins
D. Vitamins

Q.337 Primary source of energy in any cell is:

A. Monosaccharides
B. Polysaccharides
C. Oligosaccharides
D. Polypeptides

Q.338 Carbohydrates are the main constituent of cell wall in:

A. Plants
B. Fungi
C. Algae
D. All A, B, C

Q.339 The reduction of the contact area between water and hydrophobic substances which are placed in water is termed as:

A. Cohesion
B. High polarity
C. Adhesion
D. Hydrophobic exclusion

Q.340 In general formula of carbohydrates, 'x' and 'y' are whole numbers which are same in:

A. Glucose
B. Maltose
C. Sucrose
D. Starch

Q.341 Minimum number of carbon atoms that can be found in any carbohydrate is:

A.6
B. 3
C. 2
D. More than 10

Q.342 Glycolipids and glycoproteins are found in all except:

A. Extracellular matrix of animals
B. Biological membranes
C. Bacterial cell wall
D. Plant cell wall

Q.343 Carbohydrates are complex substances which on hydrolysis yield polyhydroxy aldehyde or ketone subunits. This definition is not applicable to:

A. Monosaccharides
B. Polysaccharides
C. Oligosaccharides
D. Disaccharides

Q.344 The carbon without hydroxyl group in straight chain of fructose is:

A. Carbon 2
B. Carbon 5
C. Carbon 3
D. Carbon 6

Q.345 1,4 glycosidic linkage is found in all of the following except:

A. Sucrose
B. Lactose
C. Maltose
D. Amylopectin

Q.346 Cellulose cannot be digested by amylase of human digestive tract because:

A. It contain 1,4-glyosidic linkages
B. It is unbranched
C. It is insoluble in water
D. It contains β-glucose

Q.347 These are heterogeneous group of compounds related to fatty acids:

A. Carbohydrates
B. Lipids
C. Proteins
D. Nucleic acids

Q.348 Acylglycerols like fats and oils are esters formed by condensation reaction between:

A. Fatty acids and water
B. Fatty acids and alcohol
C. Fatty acids and glucose
D. Fatty acids and phosphates

Q.349 All of the following functions are related to lipids except:

A. Components of cellular membranes
B. Insulation against cold
C. Immediate source of energy
D. Protection from water loss

Q.350 It acts as water barrier on surface of leaves.

A. Cutin
B. Carotenoids
C. Triglyceride
D. Phosphatidylcholine

Q.351 Waxes contain all of the following except:

A. Nitrogenous base
B. Fatty acid
C. Alkane
D. Alcohol

Q.352 It is an example of macromolecule:

A. Water
B. ATP
C. Amino acid
D. mRNA

Q.353 Most abundant type of lipid in plant, animal and bacterial plasma membrane is:

A. Phospholipid
B. Steroid
C. Terpenoids
D. Sphingolipids

Q.354 All of the following are features of oils except:

A. Unsaturated fatty acids
B. Mostly obtained from plants
C. Liquid at room temperature
D. Can be crystallized

Q.355 Terpenoids are made of:

A. Fatty acids
B. Isoprenoid units
C. Amino acids
D. Nucleotides

Q.356 All proteins contain all of the following elements essentially except:

A. Hydrogen
B. Oxygen
C. Nitrogen
D. Sulphur

Q.357 Most of the proteins are made of:

A. 20 types of amino acids
B. 25 types of amino acids
C. 45 types of amino acids
D. 64 types of amino acids

Q.358 All the amino acids have all of the following except:

A. $-NH_2$
B. –COOH
C. H
D. $-CH_3$

Q.359 Smallest amino acid in nature is:

A. Valine
B. Histidine
C. Glycine
D. Alanine

Q.360 All of the following are true about globular proteins except:

A. Spherical
B. Soluble in aqueous media
C. Inelastic
D. More stable

Q.361 These are reactive parts of amino acids involved in condensation reactions:

A. Alpha carbon & Hydrogen
B. Amino & Carboxyl groups
C. Carboxyl group & R group
D. Only R group

Q.362 It is an example of fibrous protein:

A. Haemoglobin
B. Pepsin
C. Keratin
D. Albumin

Q.363 Formation of a phosphodiester linkage involves:

A. Hydrolysis
B. Dehydration synthesis
C. Hydrogen bonding
D. Oxidation

Q.364 The amount of DNA is fixed for a particular species, as it depends upon:

A. Number of genes
B. Amount of RNA
C. Number of chromosomes
D. Size of cell

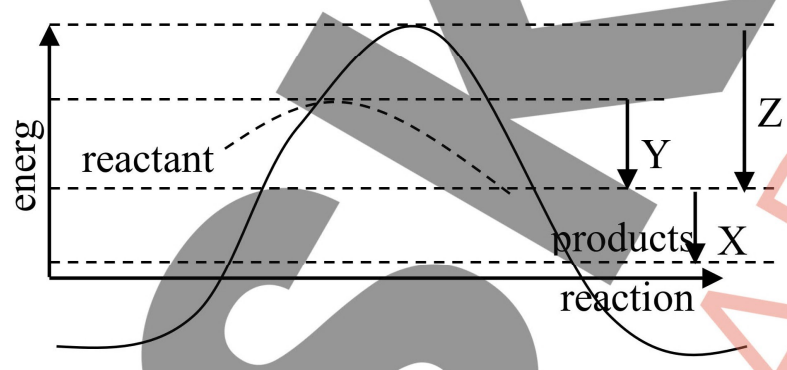
Q.365 Secondary structure of DNA duplex is maintained by:

A. Phosphodiester linkage
B. Hydrogen bond
C. Ionic bond
D. Hyperphobic interaction

Q.366 In a living cell, reactions without enzymes would:

A. Stop
B. Speed up
C. Slow down
D. Occur at normal pace

Q.367 The diagram illustrates energy changes in an enzyme-controlled reaction.



Which of the following represents the lowering of the activation energy?

A. X
B. X+Y
C. Y-Z
D. Z-Y

Q.368 The charge and shape of the active site is formed by:

A. Cofactor
B. Amino acids
C. Allosteric site
D. Globular shape

Q.369 All the enzyme active sites are occupied when:

A. Enzyme concentration is high
B. Substrate concentration is high
C. Temperature is high
D. pH is high

Q.370 It works in highly alkaline medium:

A. Catalase
B. Chymotrypsin
C. Pancreatic lipase
D. Arginase

Q.371 All of the following enzymes work in acidic environment except:

A. Pepsin
B. Sucrase
C. Enterokinase
D. Pancreatic lipase

Q.372 They occupy the active sites by forming covalent bonds or they may physically block the active sites, permanently

A. Irreversible inhibitors
B. Reversible inhibitors
C. Competitive inhibitors
D. Non-competitive inhibitors

Q.373 Heat accelerates chemical reactions because it:

A. Provides activation energy
B. Supplies kinetic energy to reacting molecules
C. Increases chances of collisions between reactant molecules
D. All A, B, C

Q.374 Enzymes are essential in our body because they:

A. Provide energy for metabolism
B. Catalyze biochemical reactions in cell
C. Are structural components of the body
D. Coordinate nervous activities of body

Q.375 At low temperature enzymes are:

A. Degraded
B. Inactivated
C. Denatured
D. Highly effective

Q.376 Which form of carbohydrate is found in RNA?

A. Aldo pentose
B. Keto pentose
C. Aldo hexose
D. Keto hexose

Q.377 Histones are linked to_____ of DNA:

A. Nitrogenous base
B. Phosphate
C. Ribose
D. Deoxyribose

Q.378 Which one of the following is not an amino acid?

A. Choline
B. Alanine
C. Arginine
D. Glutamic acid

Q.379 Which of the following is a nucleoside?

A. cAMP
B. Adenosine
C. Adenine
D. ATP

Q.380 Which of the following would be least affected when a protein is denatured?

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

Q.381 It is correct for biomolecules.

A. DNA is a polymer of ribonucleotides
B. All carbohydrates are broken down into glucose
C. Sequence of amino acids determines primary structure
D. RNA is single stranded and contains different purine bases other than in DNA

Q.382 What is the most important property of water for which it is needed in the body?

A. It exists in three physical states
B. It acts as universal solvent
C. It is tasteless and odorless
D. It is made up of hydrogen and oxygen

Q.383 Which of the following yields twice as many calories per gram as carbohydrates?

A. Fats
B. Proteins
C. Minerals
D. Vitamins

Q.384 Murein present in bacterial cell wall is an example of:

A. Macromolecules
B. Conjugated molecules
C. Micro-molecules
D. Organic molecules

Q.385 It is the major portion of RNA in the cell:

A. mRNA
B. tRNA
C. rRNA
D. Rdna

Q.386 The type of covalent bond that is formed between two monosaccharides is known as:

A. Ester bond
B. Hydrogen bond
C. Peptide bond
D. Glycosidic bond

Q.387 The bond synthesized between glucose and fructose to form sucrose is:

A. α-1, 4 Glycosidic linkage
B. α-1, 2 Glycosidic linkage
C. β-1, 2 Glycosidic linkage
D. α-1, 6 Glycosidic linkage

Q.388 Carbohydrates are organic molecules and contain which elements?

A. Carbon, Water and Oxygen
B. Carbon, hydrogen and oxygen
C. Carbon, Nitrogen and Hydrogen
D. Carbon, Sulphur and Hydrogen

Q.389 The intermediates found in both respiration and photosynthesis are:

I. Glucose, II. Glyceraldehydes, III. Ribose, IV. Dihydroxyacetone

A. I and III
B. III and IV
C. II and III
D. II and IV

Q.390 The most abundant carbohydrate in nature is:

A. Starch
B. Lactose
C. Glycogen
D. Cellulose

Q.391 Which of the following is an aldose sugar?

A. Glyceraldehyde
B. Fructose
C. Dihydroxyacetone
D. Ribulose

Q.392 The phospholipid molecule consists of _____ ends that are _____.

A. 2; fatty acids & glycerol
B. 2; hydrophilic head & hydrophobic tail
C. 3; fatty acids, glycerol & phosphate group
D. 2; hydrophobic head & tail

Q.393 The amino acid having hydrogen as R-group is:

A. Alanine
B. Glutamic acid
C. Glycine
D. Valine

Q.394 Which one of the following sets is correct set that belongs to polysaccharides?

A. Glycogen, Starch, Sucrose
B. Cellulose, Starch, Maltose
C. Starch, Chitin, Cellulose
D. Steroid, Glycogen, Starch

Q.395 The chemical nature of cell walls in plants and fungi is:

A. Nucleic acid in nature
B. Protein in nature
C. Lipid in nature
D. Carbohydrate in nature

Q.396 Three fatty acids and one glycerol → Triglyceride.
The above reaction shows:

A. Condensation reaction
B. Hydrogenation
C. Hydration
D. Hydrolysis

Q.397 In simple carbohydrates the ratio of hydrogen and oxygen is:

A. Same as in lipids
B. Same as in nucleic acids
C. Same as in proteins
D. Same as in water

Q.398 Find the right statement accordingly.

I) The most common respiratory substance as a source of energy is haemoglobin.
II) The reserved food in animals is starch.
III) The most common respiratory substance as a source of energy is glucose.

A. I only
B. II only
C. III only
D. I and III

Q.399 Identify the simplest monosaccharide possessing keto group is:

A. Erythrose
B. Ribulose
C. Galactose
D. Ribose

Q.400 Monosaccharides are major components of:

A. DNA, RNA and Oil
B. DNA, NAD and Haemoglobin
C. DNA, ATP and Milk sugar
D. None of these

16. The exoskeleton of butterfly is made up of:

A. Silk proteins
B. Fatty acids
C. Amino acids
D. Chitin

Q.401 Amino acids are organized according to:

A. Information present on tRNA
B. Information present on rRNA
C. Information present on mRNA
D. All of these

Q.402 How many nucleotides are there in tRNA?

A. 40 – 50 nucleotides
B. 1000 nucleotides
C. 75 – 90 nucleotides
D. 10 – 50 nucleotides

Q.403 On hydrolysis, oligosaccharides produce:

A. 1-10 monosaccharides
B. 2-10 monosaccharides
C. 3-7 monosaccharides
D. More than 10 monosaccharides

Q.404 Actin is categorized to which class of proteins?

A. Intermediate
B. Simple
C. Globular
D. Fibrous

Q.405 Find the odd one out regarding disaccharides.

A. Glucose
B. Sucrose
C. Fructose
D. Galactose

Q.406 Glycogen looks like:

A. Cellulose
B. Amylopectin starch
C. Amylose starch
D. None of these

Q.407 Glycolipids consists of:

A. Polysaccharides + long fatty acids
B. Complex sugars + Alcohol
C. Simple sugars + Alcohol
D. Simple sugars + Amino acid

Q.408 Triglycerides are called neutral lipids because of:

A. -NH_2 groups are present
B. Charge bearing -OH groups are present
C. -COOH groups are present
D. Charge bearing -OH groups are not present

Q.409 α-1, 4-glycosidic linkage is formed during the:

A. Formation of sucrose
B. Formation of lactose
C. Formation of maltose
D. Both A and C

Q.410 Animals release excess heat in hot environment; it is related to which property of water molecules?

A. Hydrophobic exclusion
B. High heat of vapourization
C. Cohesion
D. High specific heat capacity

Q.411 It is one of two stereoisomers that are mirror images of each other and that are not identical, and is called as:

A. Polymers
B. Monomers
C. Enantiomer
D. All of these

Q.412 Which of the following is not an unsaturated fatty acid?

A. Vegetable oils
B. Oleic acid
C. Linoleic acid
D. Palmitic acid

Q.413 Acylglycerols are formed by:

A. Condensation reaction between fatty acids and water
B. Hydrolysis reaction between fatty acids and glycerol
C. Condensation reaction between fatty acids and glycerol
D. Hydrolysis reaction between fatty acids and water

Q.414 Which one of the following is composed of two monomers?

A. Glucose
B. Chitin
C. Starch
D. None of these

Q.415 Which one of the following is not composed of one kind of monosaccharides?

A. Pectin
B. Chitin
C. Cellulose
D. All of these

Q.416 A product of two amino acids is known as:

A. Disaccharide
B. Diglyceride
C. Dipeptide
D. None of these

Q.417 A change of single nucleotide in DNA is known as:

A. Hydrolysis
B. Condensation reaction
C. Point mutation
D. Esterification

Q.418 Find the helical structure of protein among the following components.

A. β-pleated sheet
B. α-pleated sheet
C. β-helix
D. α-helix

Q.419 In solution, most of the monosaccharides form:

A. Straight chain
B. Ring structure
C. Branched chain
D. 3D structure

Q.420 Proteins at the time of synthesis on ribosomal surface belong to:

A. Primary structure of proteins
B. Secondary structure of proteins
C. Tertiary structure of proteins
D. Quaternary structure of proteins

Q.421 Glycerol is a:

A. Monohydroxy alcohol
B. Dihydroxy alcohol
C. Trihydroxy alcohol
D. Pentahydroxy alcohol

Q.422 What is true about phospholipids?

I) They are derived from palmitic acid.
II) They are derived from nucleic acid.
III) They are derived from phosphatidic acid.

A. I only
B. II only
C. III only
D. I and III

Q.423 Which type of proteins provide immunity?

A. Enzyme
B. Haemoglobin
C. Fibrinogen
D. Antibodies

Q.424 What is produced on complete hydrolysis of starch & glycogen?

A. Fructose
B. Glucose
C. Maltose
D. Galactose

Q.425 How many – OH groups are there in glycerol?

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

Q.426 Matrix of bone and cartilage are established by:

A. Keratin
B. Histone
C. Collagen
D. Elastin

Q.427 Tristearin is a type of simple lipid having molecular formula:

A. $C_{57}H_{110}O_{114}$
B. $C_{57}H_{104}O_6$
C. $C_{57}H_{110}O_{57}$
D. $C_{57}H_{110}O_6$

Q.428 The monomers of glycogen are:

A. α-glucoses
B. β-glucoses
C. N-acetyl glucosamine
D. Both a and B

Q.429 Organisms can also survive under ice; it is because of:

A. Dehydration process
B. Maximum no. of hydrogen bonding among water molecules
C. Condensation process
D. Both B and C

Q.430 The maximum no. of carbon atoms are present in:

A. Stearic acid
B. Palmitic acid
C. Acetic acid
D. All of these have equal no. of carbons

Q.431 Which one of the following types of lipids is major constituent of cell membrane?

A. Cholesterol
B. Phospholipid
C. Steroid
D. Waxes

Q.432 Unsaturated fatty acids:

A. Have higher melting point
B. Are more common in animals
C. Are fully saturated with hydrogen
D. None of these

Q.433 Which type of haemoglobin causes red blood cells to become stiff and sticky?

A. HBS
B. HBA
C. Glutamic acid
D. Valine

Q.434 Fatty acid contain how many Carbon atoms in their chains?

A. 2 to 10
B. 20 only
C. 2 to 30
D. 30 only

Q.435 Lecithin is another name of:

A. Phosphatidic acid
B. Choline
C. Phosphatidylcholine
D. Inositol

Q.436 During the formation of ester bond, water (H + OH) molecule is also released; -OH group comes from:

A. -COOH group of amino acid
B. -OH group of glycerol
C. Both of these
D. None of these

Q.437 Both cohesion and adhesion properties of water molecules are due to:

A. Covalent bonding
B. Hydrogen bonding
C. Ionic bonding
D. All of these

Q.438 The structure of a fibrous protein comprises of polypeptide chains in the form of.

A. 3D shape
B. Spherical
C. Filament like shape
D. None of these

Q.439 Protein category, that is involved in regulation of blood pressure is:

A. Fibrinogen
B. Haemoglobin
C. Antibodies
D. Hormones

Q.440 The most abundant lipids in living things are:

A. Steroids
B. Waxes
C. Acylglycerol
D. Terpenes

Q.441 Which one of the following is/are classified as water soluble and inelastic nature of protein(s)?

A. Channel protein
B. Myosin
C. Collagen
D. All of these

Q.442 Lipids contain double amount of energy as compared to the same amount of carbohydrates; it is because of:

A. Higher proportion of oxygen
B. Higher proportion of C-O bonds
C. Higher proportion of C-H bonds
D. Lower proportion of C-H bonds

Q.443 How many different types of fatty acid are there?

A. 20 types
B. 30 types
C. 40 types
D. 50 types

Q.444 3' of tRNA is terminated with base sequence of:

A. ACC
B. CCA
C. CAC
D. AAC

Q.445 The fatty acid, butyric acid consists of:

A. 2C
B. 4C
C. 16C
D. 18C

Q.446 Identify the peptide bond.

A. –C–P
B. –C–O
C. –C–N
D. –C–S

Q.447 Cellulase belongs to which class of biomolecules?

A. A polysaccharide
B. A disaccharide
C. A protein
D. An oil

Q.448 What is true about RNA molecules?

I) They are transcribed from ribosomes.
II) They are transcribed from mRNA.
III) They are transcribed from DNA template.

A. I only
B. II only
C. III only
D. I and III

Q.449 Secondary structure of protein is present in:

A. Pepsin
B. Keratin
C. Insulin
D. Haemoglobin

Q.450 The protein found in quills is:

A. Keratin
B. Myosin
C. Elastin
D. Collagen

Q.451 What is the proportion of mRNA in total RNA contents?

A. 1.1% of the total RNA in a cell
B. 2 to 4% of the total RNA in a cell
C. 5% of the total RNA in a cell
D. 6% of the total RNA in a cell

Q.452 Which type of RNA is the longest among the types of RNA?

A. mRNA
B. tRNA
C. rRNA
D. Either A or B

Q.453 Which of the following is a polysaccharide present in human muscle?

(a) amylase
(b) collagen
(c) glycogen
(d) myoglobin

Q.454 At which levels of protein structure do hydrophobic interactions occur?

(a) primary, secondary and tertiary
(b) primary, secondary, tertiary and quaternary
(c) tertiary and quaternary
(d) quaternary only

Q.455 A peptide bond is formed between

(a) an aldehyde group and an amino group
(b) an aldehyde group and a carboxyl group
(c) an aldehyde group and an ester group
(d) a carboxyl group and an amino group

Q.456 A sequence of amino acids may end is either an amino group (-NH2) or a carboxyl group (-COOH). What is the theoretical number of chemically different dipeptides that may be assembled from 20 different amino acids?

(a) 40
(b) 80
(c) 160
(d) 400

Q.457 The secondary order of protein structure is

(a) the sequence of amino acids in the polypeptide chain
(b) the formation of peptide bonds between amino acids
(c) the coiling of the polypeptide chain
(d) the folding of the coiled polypeptide chain

Q.458 Polysaccharides are synthesized in plants by the process of

(a) condensation (b) glycolysis
(c) hydrolysis (d) oxidation

Q.459 Most polysaccharides are composed of chains of condensed

(a) cellulose units (b) hexose units
(c) pentose units (d) sucrose units

Q.460 Which one of the following types of bond is principally concerned in maintaining the alpha – helix shape of secondary protein structure?

(a) disulphide bonds (b) ester bonds
(c) hydrogen bonds (d) peptide bonds

Q.461 Which one of the following molecules contains amino acids?

(a) ascorbic acid (b) cellulose
(c) collagen (d) galactose

Q.462 Which of the following is a complex of globular protein with non-proteinaceous material?

(a) collagen (b) egg albumen
(c) haemoglobin (d) fibrinogen

Q.463 What does a haemoglobin molecule contain?

(a) Four iron (Fe^{2+}) ions attached to each haem group
(b) Four oxygen molecules attached to each haem group
(c) Four polypeptide chains each with four attached haem groups
(d) four polypeptide chains each with one attached haem group

Q.464 Which of the following does not contain amino acids?

(a) Carbonic anhydrase (b) glycogen
(c) haemoglobin (d) insulin

Q.465 Which property of proteins enables them to act as pH buffers?

(a) they are soluble
(b) they contain carboxyl and amino groups
(c) they have a high molecular mass
(d) they possess both secondary and tertiary structure

Q.466 Due to polar neuron water molecules attract each other to form _____.

(a) Dipole (b) Polymers
(c) Chain (d) N.O.T

Q.467 At which levels of protein structure do hydrophobic interactions occur?

(a) Primary, secondary and tertiary
(b) Primary, secondary, tertiary and quaternary
(c) Tertiary and quaternary
(d) Quaternary only

Q.468 The helical form of a polypeptide chain is due the presence within the molecule of

(a) Covalent bonds (b) Disulphide bonds
(c) Glycosidic bonds (d) hydrogen bonds

Q.469 Which one of the following is a characteristic of saturated fats which distinguished them from unsaturated fats?

(a) They do not contain glycerol
(b) they contain a high proportion by mass of oxygen
(c) They contain only unbranched fatty acids
(d) They have no double bonds between their carbon atoms

Q.470 How many fatty acid molecules are normally present in a fat or oil molecule?

(a) 1 (b) 2
(c) 3 (d) 4

Q.471 Which type of bond maintains the helix shape of secondary proteins structure?

(a) disulphide (b) ester

(c) hydrogen (d) peptide

Q.472 Which molecule contains peptide bonds?

(a) ATP (b) Collagen

(c) DNA (d) maltose

Q.473 Life emerges on the level of

(a) Organelle (b) Biomolecules

(c) Cell (d) Organisms

Q.474 Select the correct statement regarding ecosystem

(a) Several species living and interacting in the same area

(b) Members of the same species living in close association in given area

(c) Entire surface region of the world inhabited by living things

(d) Community with its environment

Q.475 All are advantages of hydroponics else?

(a) Control weeds and soil disease problem

(b) Area require for cultivation increase

(c) Crop successfully grown in arid parts of the world

(d) Determine role of mineral

Q.476 During process of condensation, seven monomers of glucose ($C_6H_{12}O_6$) condensed to form polymer having molecular formula?

(a) $C_{42}H_{76}O_{40}$ (b) $C_{42}H_{76}O_{42}$

(c) $C_{42}H_{72}O_{42}$ (d) $C_{42}H_{72}O_{36}$

Q.477 Straight chain of glucose in polysaccharide form

(a) Amylose (b) Amylopectin

(c) Amylase (d) Starch

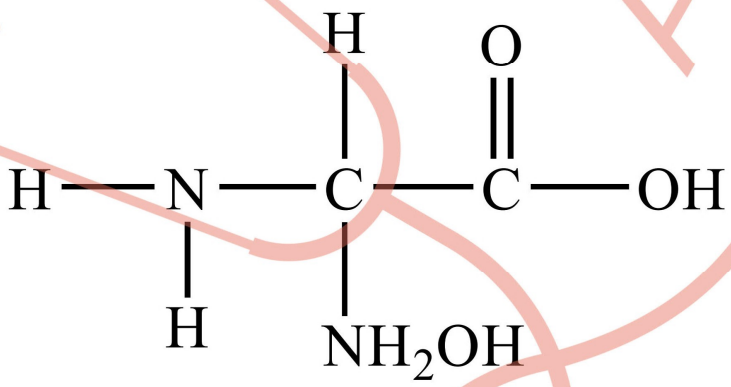
Q.478 Select incorrect statement

(a) Small size terpenes are volatile in nature and made up of C5H8

(b) Cholesterol a precursor for the synthesis of Oxytocin hormone

(c) Derivates of some terpenes are found in Vitamin A1 and A2

(d) Waxes contain one molecule of fatty acid forming ester bond with long chain of alcohol.



Q.479 Is structural formula of

(a) Glycine (b) Serine

(c) Alanine (d) Phenlyalanine

Q.480 All are sources of protein except.

(a) Egg (b) Meat

(c) Stearin (d) Pulses

Q.481 During nucleotide formation nitrogenous base attached with which carbon of pentose?

(a) First carbon (b) Second carbon

(c) Third carbon (d) Fifth Carbon

Q.482 Select the correct statement regarding ATP?

(a) ATP an energy carrier molecule

(b) Mononucleotide act as co-enzyme

(c) When loss one phosphate produce 31.81 Kj energy

(d) All of These

Q.483 Protein having peptide, hydrogen, ionic and disulphide bond.

(a) Primary structure protein (b) Secondary structure protein

(c) Tertiary structure protein (d) Quaternary structure protein

Q.484 Most abundent macromolecule of cell.

(a) Carbohydrate (b) Protein
(c) Lipids (d) Nucleic acid

Q.485 All living bodies are structurally composed of cells and living cell contain a living material called.

(a) Proplast (b) Protoplast
(c) Protoplasm (d) Proplasm

Q.486 The compounds produced by living organisms are called.

(a) Active compounds (b) Reactive compound
(c) Biomolecuels (d) All of these

Q.487 Most abundant bioelement of human body.

(a) Carbon (b) Hydrogen
(c) Oxygen (d) Nitrogen

Q.488 Life activities occur in a cell due to the presence of.

(a) Energy (b) Nutrients
(c) Water (d) ATP

Q.489 All are monomers else.

(a) Amino acid (b) Glucose
(c) Nucelotide (d) Cellulose

Q.490 Macromolecules are broken into monomers by the process of hydrolysis with the help of.

(a) Analytical enzymes (b) Amylase
(c) Hydrolytic enzymes (d) Maltase

Q.491 Which is mismatched?

(a) Amino acid→ Protein (b) Glucose → Cellulose
(c) Fatty acid → Myosin (d) Nucleotide→ RNA

Q.492 An enzyme found in tears(lysozymes) is

(a) Primary structure Protein (b) Secondary structure Protein
(c) Tertiary structure Protein (d) Quaternary structure Protein

Q.493 Head of phospholipids is polar due to

(a) Cholesterol (b) Phosphate
(c) Fatty acids (d) Glycerol

Q.494 What is the chemical mechanism by which cells make polymers from monomers?

(a) Phosphodiester linkages (b) Hydrolysis
(c) Dehydration reactions (d) Ionic bonding of monomers

Q.495 Which of the following polymers contain nitrogen?

(a) Starch (b) Glycogen
(c) Cellulose (d) Chitin

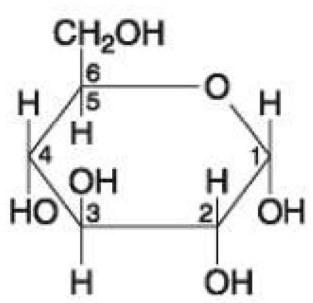
Q.496 Which of the following is not a polymer?

(a) Glucose (b) Starch
(c) Cellulose (d) Chitin

Q.497 A molecule with the chemical formula $C_6H_{12}O_6$ is probably a/an

(a) Carbohydrate (b) Lipid.
(c) Monosaccharide (d) Both A and C

Q.498 If 2 molecules of the general type shown in given figure were linked together, carbon 1 of one molecule to carbon 4 of the other, the single molecule that would result would be



(a) Maltose. (b) Sucrose
(c) Glucose (d) Lactose.

Q.499 Lactose, a sugar in milk, is composed of one glucose molecule joined by a glycosidiclinkage to one galactose molecule. How is lactose classified?

(a) As a pentose
(b) As a hexose
(c) As a monosaccharide
(d) As a disaccharide
(e) As a polysaccharide.

Q.500 All of the following are polysaccharides except

(a) Glucagon
(b) Starch
(c) Chitin
(d) Cellulose

Q.501 Which of the following is true of both starch and cellulose?

(a) They are both polymers of glucose.
(b) They are geometric isomers of each other.
(c) They can both be digested by humans.
(d) They are both used for energy storage in plants.

Q.502 Which of the following is true of cellulose?

(a) It is a polymer composed of sucrose monomers.
(b) It is a storage polysaccharide for energy in plant cells.
(c) It is a storage polysaccharide for energy in animal cells.
(d) It is a major structural component of plant cell walls.

Q.503 All of the following statements concerning saturated fats are true except

(a) They are more common in animals than in plants.
(b) They have multiple double bonds in the carbon chains of their fatty acids.
(c) They generally solidify at room temperature.
(d) They contain more hydrogen than saturated fats having the same number of carbon atoms.

Q.504 A molecule with the formula $C_{18}H_{36}O_2$ is probably a

(a) Carbohydrate.
(b) Fatty acid.
(c) Protein
(d) Nucleic acid.

Q.505 Which of the following statements is false for the class of biological molecules known as lipids?

(a) They are soluble in water.
(b) They are an important constituent of cell membranes.
(c) They contain more energy than proteins and carbohydrates.
(d) They are not true polymers.

Q.506 What is a triacylglycerol?

(a) A protein with tertiary structure
(b) A lipid made with three fatty acids and glycerol
(c) A lipid that makes up much of the plasma membrane
(d) A molecule formed from three alcohols by dehydration reactions

Q.507 Which of the following is true regarding saturated fatty acids?

(a) They are the predominant fatty acid in corn oil.
(b) They have double bonds between carbon atoms of the fatty acids.
(c) They are the principal molecules in lard and butter.
(d) They are usually liquid at room temperature.

Q.508 Why are human sex hormones considered to be lipids?

(a) They are essential components of cell membranes.
(b) They are steroids, which are not soluble in water.
(c) They are made of fatty acids.
(d) They are hydrophilic compounds.

Q.509 All of the following contain amino acids except

(a) Hemoglobin.
(b) Cholesterol.
(c) Antibodies.
(d) Enzymes.

Q.510 The bonding of two amino acid molecules to form a larger molecule requires

(a) The release of a water molecule.
(b) The release of a carbon dioxide molecule.
(c) The addition of a nitrogen atom.
(d) The addition of a water molecule.

Q.511 Polysaccharides, lipids, and proteins are similar in that they

(a) Are synthesized from monomers by the process of hydrolysis.
(b) Are synthesized from monomers by dehydration reactions.
(c) Are synthesized as a result of peptide bond formation between monomers.
(d) Are decomposed into their subunits by dehydration reactions.
(e) All contain nitrogen in their monomer building blocks.

Q.512 Dehydration reactions are used in forming which of the following compounds?

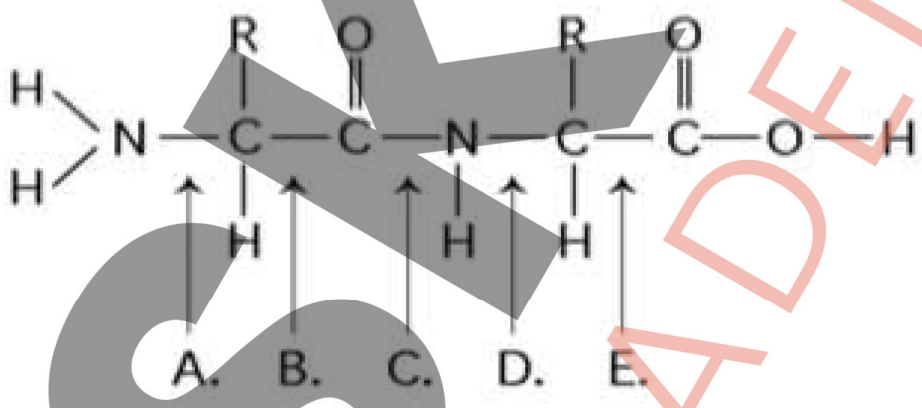
I. Triacylglycerides
II. Polysaccharides
III.Proteins

(a) I only (b) I and II
(c) II and III (d) I and III (e) I, II and III

Q.513 Upon chemical analysis, a particular polypeptide was found to contain 100 amino acids. How many peptide bonds are present in this protein?

(a) 101 (b) 100
(c) 99 (d) 98 (e) 97

Q.514 At which bond would water need to be added to achieve hydrolysis of the peptide, back toits component amino acid?



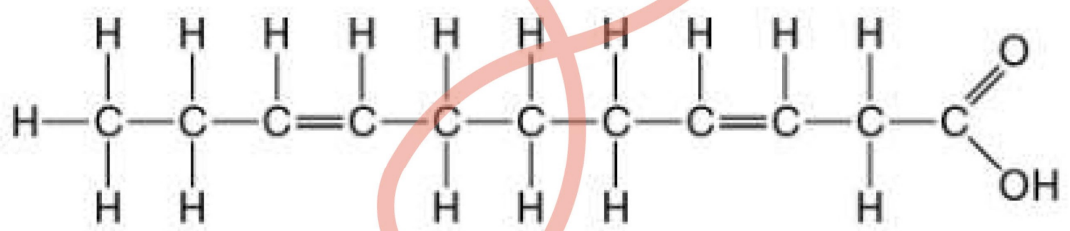
Q.515 Which bonds are created during the formation of the primary structure of a protein?

(a) Peptide bonds (b) hydrogen bonds
(c) Disulfide bonds (d) Phosphodiester bonds

Q.516 What maintains the secondary structure of a protein?

(a) Peptide bonds (b) Hydrogen bonds
(c) Disulfide bonds (d) Ionic bonds
(e) Phosphodiester bonds

Q.517 The molecule shown in given figure is a



(a) Polysaccharide. (b) Polypeptide.
(c) Saturated fatty acid. (d) Triacylglycerol.
(e) Unsaturated fatty acid.

Q.518 The major purpose of RNA is to

(a) Transmit genetic information to offspring.
(b) Function in the synthesis of protein.
(c) Make a copy of itself thus ensuring genetic continuity.
(d) Act as a pattern or blueprint to form DNA.

Q.519 Which of the following best describes the flow of information in eukaryotic cells?

(a) DNA →RNA →proteins (b) RNA →proteins →DNA
(c) Proteins →DNA →RNA (d) RNA →DNA →proteins

Q.520 Which of the following descriptions best fits the class of molecules known as nucleotides?

(a) A nitrogenous base and a phosphate group
(b) A nitrogenous base and a pentose sugar
(c) A nitrogenous base, a phosphate group, and a pentose sugar
(d) A phosphate group and an adenine or uracil

Q.521 Which of the following are nitrogenous bases of the pyrimidine type?

(a) Guanine and Adenine
(b) Cytosine and Uracil
(c) Thymine and Guanine
(d) Ribose and Deoxyribose

Q.522 The element nitrogen is present in all of the following except

(a) Proteins.
(b) Nucleic acids.
(c) Amino acids.
(d) DNA.
(e) Monosaccharides.

Q.523 Which of the following is a diverse group of hydrophobic molecules?

(a) Carbohydrates
(b) Lipids
(c) Proteins
(d) Nucleic acids

Q.524 Which of the following store and transmit hereditary information?

(a) Carbohydrates
(b) Lipids
(c) Proteins
(d) Nucleic acids

Q.525 Which term includes all others in the list?

(a) Monosaccharide
(b) Disaccharide
(c) Starch
(d) Carbohydrate
(e) Polysaccharide

Q.526 Which of the following statements concerning unsaturated fats is true?

(a) They are more common in animals than in plants.
(b) They have double bonds in the carbon chains of their fatty acids.
(c) They generally solidify at room temperature.
(d) They contain more hydrogen than saturated fats having the same number of carbon atoms.

Q.527 Life arose in the form of

(a) Unicellular eukaryotes
(b) Simple unicellular
(c) Simple multicellular
(d) Multicellular prokaryotes

Q.528 Chemical foundation of life is based on

(a) Elements
(b) Atoms
(c) Molecules
(d) Cells

Q.529 Which one of the following is not sweet carbohydrate

(a) Cellulose
(b) Sucrose
(c) Galactose
(d) Lactose

Q.530 Protein which are consist of two or more chains called

(a) Primary structure
(b) Secondary structure
(c) Tertiary structure
(d) Quaternary structure

Q.531 Lipids which are volatile in nature

(a) Waxes
(b)Acyglycerol
(c)Terpenoids
(d) Phospholipids

Q.532 All are correct else

(a) DNA contain deoxyribose
(b) water control all activities of cell
(c) PH of cell is maintain by amino group
(d) Waxes are lipids

Q.533 Chemical composition of mucoids?

(a) Nucleic acid and protein
(b) Lipid and protein
(c) Carbohydrate and Protein
(d) Carbohydrate and lipid

Q.534 Select the correct statement regarding NAD (nicotinamide adenine dinucleotide)

I. Vitamin constituent
II. Act as co-enzyme.
III. Carrier of electron

(a) I and II
(b) I and III
(c) II and III
(d) I, II and III

Q.535 Experiment on bacteriophage experimentally confirmed that_____?

(a) RNA must be the genetic material
(b) DNA must be the carrier of information between nucleus and cytoplasm
(c) Deoxyribonucleic acid must be the genetic material
(d) Ribonucleic acid must be the carrier between nucleus and cytoplasm

Q.536 Glycolipid in plant cell found in

(a) Energy producing cell organelle mitochondria
(b) Energy producing cell organelle chloroplast
(c) Energy storing vacuole
(d) Glycolipid is absent in plant

Q.537 What will happen in concentration of substrate increases in a chemical reaction?

(a) Enzyme activity will keep on increasing.
(b) Enzyme activity 1st increase then decrease.
(c) Enzyme activity will increase and then maintain a steady level.
(d) Enzyme activity will not increase at all.

Q.538 "The active site of each enzyme has distinct shape and distribution of charges". This statement refers the_____?

(a) Key–lock theory
(b) Induce fit model
(c) Mosaic model
(d) Above statement is incorrect

Q.539 Cell use RNA to make?

(a) DNA
(b) Protein
(c) Chromosomes
(d) Carbohydrate

Q.540 The holoenzymes in which prosthetic group is an inorganic ions are known as____?

(a) Co-factor
(b) Co-enzyme
(c) Allosteric group
(d) Apoenzyme

Q.541 Select the mismatched

(a) Co-enzyme → NADP
(b) Co-factor → Manganese
(c) FMN → Co-factor
(d) Proteozyme→ Amylase

Q.542 All are correct regarding characteristics of enzymes except?

a) Specific in nature and their action
b) Their molecules are much smaller than the substrate
c) React with both acidic and alkaline substances
d) Chemically unchanged during and after reaction

Q.543 Substance which obstruct enzymatic reactions by binding to a part of the enzyme away from the active

(a) Competitive inhibitor
(b) Non-Competitive inhibitor
(c) Activators
(d) Co-factors

Q.544 Each enzyme contain groove or dimple _____?

(a) Allosteric site
(b) Active site
(c) Binding site
(d) Reactive site

Q.545 Enzyme activities can be accelerated by

(a) Organic co-enzymes like NAD and FAD
(b)Inorganic Co-factors like ADP & NADP
(c) Organic co-factors like FMN and ATP
(d) Inorganic Activators like Mn, Ni Mg & CL

Q.546 What will happen to enzyme activity when substrate concentration increases by three folds?

(a) Enzyme activity reduce two half
(b) Enzyme activity increase to three time
(c) Enzyme activity increase two time
(d) Enzyme activity reduce three time

Q.547 Enzymes are

I. Proteinaceous in nature
II. All are protein in nature
III. Lower the amount of activation energy

(a) I only
(b) I and II
(c) III only
(d) I and III

Q.548 Conjugated molecule which is weakly acidic and soluble in water

(a) Glycolipid (b) Glycoprotein
(c) Nucleoprotein (d) Lipoprotein

Q.549 Two nucleotides are linked by _____ of one another

(a) Pentose (b) Phosphate
(c) Nitorgenous base (d) None of these

Q.550 Nucleoside refer to

(a) Nitrogenous base and phosphate (b) Pentose and Phosphate
(c) Nitrogenous base and pentose (d) Nitrogenous base and Hexose

Q.551 Inhibitors which are mimics of substrate called

(a) Competitive inhibitors (b) Non-competitive inhibitors
(c) Competitive activators (d) Non-competitive activators

Q.552 An enzyme(carbonic anhydrase) which is help in transport of Co2 through blood activated by

(a) Mg (b) Ca
(c) Zn (d) C

Q.553 Protein part of holoenzyme is called

(a) Apoenzyme (b) Proteozymes
(c) Co-factors (d) Co-enzymes

Q.554 Which one of the following is the mechanism of action of enzymes?

(a) They act upon substrate molecules to release new substrate molecules.
(b) They actually increase the amount of energy of activation.
(c) Enzymes dramatically decrease the amount of energy of activation.
(d) Enzymes break product molecules to release new product molecules.

Q.555 If by adding substrate molecules in a reaction, initially it increases but after a period of time it maintain a steady level this shows that?

(a) Enzyme molecules become saturated with substrate
(b) Enzyme molecules denatured.
(c) No effect on enzyme activity.
(d) Both "a" and "b".

Q.556 Most vitamins are _____ or raw material from which _____ are made?

(a) Co-enzymes and co-factor (b) Co-factor and Co-enzymes
(c) Co-enzymes and co-enzymes (d) Co-factor and Co-factor

Q.557 All are activators for enzymes except

(a) Mg (b) Ca
(c) Zn (d) C

Q.558 An enzyme accelerates a metabolic reaction by?

(a) Increase overall free energy change for the reaction.
(b) Making an endergonic reaction occur spontaneously.
(c) Lowering the activation energy.
(d) Making the substrate molecule more stable.

Q.559 Which statement about enzyme is not true?

(a) They consist of protein, with or without a non-protein part.
(b) They change the rate of catalyzed reaction.
(c) They are sensitive to heat.
(d) They are non-specific in their action.

Q.560 The rate of an enzyme catalyzed reaction?

(a) Is constant under all conditions.
(b) Decrease as substrate concentration increase.
(c) Cannot be measured.
(d) Can be reduced by inhibitors.

Q.561 Choose the correct statement regarding enzymes?

I. They act on specific substrate
II. Decrease the amount of energy of activation.
III. Activated by certain organic ions

(a) I only (b) II only (c) I and II (d) I and III

Q.562 In a chemical reaction in which two glucose molecules are condensed to form maltose molecule enzymes are required in?

(a) Small amounts. (b) Huge amounts.
(c) Enzymes are not required at all.
(d) Enzymes are used but their role is not clear.

Q.563 Which one of the following is pure proteinaceous enzyme?

(a) Amylase. (b) Pepsin.
(c) Lipases. (d) Both 'a' and 'b'.

Q.564 Enzyme molecule has a specific site in which substrate molecule attaches, known as active site. The site other than active site is known as?

(a) Active site. (b) Specific site.
(c) Allosteric site. (d) Non specific site.

Q.565 Induced fit model of enzyme action was presented by?

(a) Koshland. (b) Fischer.
(c) Thomas Cech. (d) Sidney Altman.

Q.566 What is apoenzyme?

(a) Protein part of enzyme. (b) Non protein part of enzyme.
(c) Co factor. (d) Co enzyme.

Q.567 Inorganic non protein part of enzyme molecule is known as?

(a) Protein part of enzyme. (b) Non protein part of enzyme.
(c) Co factor. (d) Co enzyme.

Q.568 What is coenzyme?

(a) Protein part of enzyme. (b) Non protein part of enzyme.
(c) Non protein organic part of enzyme. (d) Non protein inorganic part of enzyme.

Q.569 Fisher proposed a _____ theory of enzyme activity?

(a) Lock and key theory. (b) Induced fit model.
(c) Role of substrate in enzyme activity. (d) Role of pH in enzyme activity.

Q.570 The rate of enzymatic reaction is _____ on the substrate concentration?

(a) Directly. (b) Inversely.
(c) Both of these (d) above statement is wrong.

Q.571 The activity of almost every enzyme in a cell is regulated by:

(a) Feed-back inhibition (b) Positive feedback
(c) Negative feedback (d) Feedback control

Q.572 The pH at which enzyme perform its best activity is known as?

(a) Minimal pH (b) Optimal pH.
(c) Defined pH. (d) All of these.

Q.573 If the amount of an enzyme is increased by two folds the reaction rate will be ____?

(a) No change. (b) Double.
(c) Three time. (d) Depend upon the enzyme.

Q.574 Chemical molecules which attached at allosteric site and inhibit enzyme activity are known as?

(a) Inhibitors. (b) Competitive inhibitors.
(c) Non competitive inhibitors. (d) Activators.

Q.575 Which one of the following is true for competitive inhibitors?

(a) They attach at active site. (b) Compete with substrate molecules.
(c) Their effects are reversible. (d) All of these.

Q.576 An mRNA codon for the amino acid lysine is AAG.
How many lysine molecules are present in the polypeptide, containing five amino acids, coded for by the following DNA template?
TTCGGTTTCTTATTC

(a) 0. (b) 2. (c) 3. (d) 4.

Q.577 All are correct regarding DNA else?

(a) One Complete turn of DNA is 3.4 x 10-9m
(b) The uprights of the ladder are made up of deoxyribose and phosphoric acid part of nucleotide
(c) Each pair of nucleotides is held together by two/three hydrogen bonds.
(d) Both polypeptide strands remain separated by 2nm

Q.578 The statement describe the base pairing in DNA is

(a) Purine bases always pair with purine bases
(b) Purine bases can only pair with pyrimidine bases
(c) Adenine cannot pair with thymine
(d) Hydrogen bonding can only takes place between pyrimidine

Q.579 A temperature beyond optimum

(a) Can affect the shape of an enzyme (b) Lowers the energy of an enzyme
(c) Makes cells less susceptible to disease. (d) Both a and c.

Q.580 What is the advantage of DNA having two complementary strands

(a) Two chromatids can pair-up
(b) Semi-conservative replication is possible
(c) Both Transcription and replication occursimilterasly
(d) Bond between phosphate group

Q.581 A DNA molecules has 28% of Adenine as base of a cell what is the % of Cytosine in the DNA

(a) 18% (b) 22%
(c) 28% (d) 36%

Q.582 A bacteria a growing for many generations on a medium containing N15 isotopes. It contains 36% of Adenine in its DNA. The same bacterium was transferred to a medium in which only Nitrogen source is N14. What was the percentage of guanine in DNA?

(a) 14% (b) 18%
(c) 28% (d) 36%

Q.583 A DNA analysed and calculated the relative amount of four nitrogenous bases. The result are shown in table

Purine		Pyrimidine	
Adenins	Base 1	Base 2	Base 3
28.2%	21.5%	27.8%	22.5%

What are 1,2,3 bases?

(a) Cytosine thymine guanine (b) Cytosine Guanine thymine
(c) Guanine thymine cytosine (d) thymine cytosine guanine

Q.584 Following events occur in the replication of DNA.

i) Bonds between complementary bases break
ii) Bonds
iii) DNA molecule uncoil
iv) Opposite strands separate
v) Sugar – phosphate bond form.
vi) Free nucleotides align with complementary nucleotides on each strand.

(a) i→iii →v→iv→ii→vi (b) iii→i→iv→vi→ii→v
(c) iii→vi→i→iv→v→ii (d) iv→iii→i→vi→v→ii

Q.585 What is the effect of the enzymes deoxyribonuclease?

(a) DNA broken at specific site (b) DNA fragments joined together
(c) DNA replication (d) DNA transcription

Q.586 Pyrimidine bases contain 4carbon atoms and purine bases contain 5. How many carbon atoms are there in a nucleotide containing cytosine?

(a) 8 (b) 9
(c) 10 (d) 11

Q.587 Which of the following statements about the structure of DNA is incorrect.

(a) One complete turn require 3.4 nm and 10 base pairs
(b) Backbone of each strand runs in opposite directions relative to each other.
(c) Each pair of nucleotides in held together by three hydrogen bonds.
(d) The width of the DNA strand is a constant 2nm.

Q.588 The nitrogenous bases present in RNA are the same as those present in DNA except that

(a) Adenine replaces Cytosine
(b) Adenine replaces thymine
(c) Uracil replaces Adenine
(d) Uracil replaces thymine

Q.589 A fragment of DNA

-A	-T
-G	-C
-T	-A
-C	-G

How many hydrogen bonds are involved in holding these 2 strands of DNA together.

(a) 10
(b) 8
(c) 6
(d) 4

Q.590 It was found during study of an organism that it contains 18% Adenine, 32% Guanine, 32% Cytosine and 18% Thymine.

Genetic material in RNA
II. Genetic material in DNA
III. Genetic material may be double stranded
Which statement(s) can be made about this organism

(a) I only
(b) I and II
(c) II and III
(d) I, II and III

Q.591 What is the function of some enzyme in a seed during germination

(a) To break down insoluble food into soluble substances
(b) To increase the rate of photosynthesis
(c) To increase water absorption
(d) To make starch from storage

Q.592 A polypeptide chain has following sequence of Amino acid

A→B → C → D → B → E → C
mRNA codon are
amino acid A- UGU, **amino acid B- GAU, amino acid C-CAC**
amino acid D-UAG, **amino acid E AAG**
Which of the following sequences of nitrogenous base at DNA to synthesis above polypeptide?

a) ACACTTGTGATGCTATTCGTG
b) ACACUAGUGAUGCUAUUCGUG.
c) ACACTAGTGATGCTAAACGTG
d) ACACTAGTGATCCTATTCGTG.

Q.593 Synthetic mRNA → Polypeptide produce

UUU UUUUUUUUU → Phenylalanine–Phenylalanine–Phenylalanine-Phenylalanine
AAA AAAAAAAAA → Lysine - Lysine -Lysine - Lysine
UUU AAA UUU AAA → Phenylalanine - Lysine -Phenylalanine – Lysine
What are DNA code for phenylalanine and lysine.

Phenylalanine	Lysine
a) AAA	TTT
b) AAA	UUU
c) GGG	CCC
d) TTT	GGG

Q.594 If the sequence of nucleotide bases in DNA is TAGC, then the sequence of bases in tRNA will be?

(a) ATGC
(b) TAGC
(c) UTGC
(d) UAGC

Q.595 Following are the stages in the cellular synthesis of protein

I. Movement of mRNA from nucleus to cytoplasm **II. Peptide linkage**
III. Transcription **IV. Polypeptide formation** **V. mRNA attachment**

(a) I→III→II→V→IV
(b) I→V→III→IV→II
(c) III→I→V→II→IV
(D) III→IV→I→II→V

Q.596 Codes at DNA for amino acids are

CGG – Alanine, TTT- Lysine, GCG –arginine,
AAA Phenylalanine, CCA-Glycine, CAA- valine.

A polypeptide chain –Arginine – Glycine- Lysine- Valine – alanine

CGC	GUU	AAA	GUU	GCC

Which triplet contain error

(a) 1st (b) 2nd
(c) 3rd (d) 4th

Q.597 Three consecutive bases in the DNA molecule work as the code for each amino acid in a protein molecule What is maximum number of different triplets that could occur.

(a) 16 (b) 24
(c) 60 (d) 64

Q.598 The DNA code for glutamic acid is CTC or CTT the code for Valine is CAA or CAT. In sickle cell haemoglobin, valine is present instead of glutamic acid. Assuming a single base pair substitution has occurred what is the mRNA code in the affected mutant.

(a) CUU (b) GAA
(c) GAG (d) GUA

Q.599 Insulin is a protein containing 51 amino acids. These include 17 of the 20 different amino acids commonly occurring in proteins. What are the minimum number of different kinds of tRNA molecules involved synthesis of insulin?

(a) 3 (b) 17
(c) 20 (d) 51

Q.600 Insulin molecule is composed of two polypeptide chains, one consisting of 20 amino acids and other consisting 31. What is the minimum number of nucleotide base of DNA required to code this molecule.

(a) 20 (b) 51
(c) 102 (d) 153

Q.601 One complete turn of double helix of DNA contain 10 pairs, of bases with 3.4nm length. What is length of the DNA coding a protein of 150 amino acids?

(a) 153nm (b) 300nm
(c) 120nm (d) 15nm

Q.602 In a genetic engineering experiment a piece of DNA containing 6000 nucleotides in transcribed and translated into protein, How many amino acids are required.

(a) 1000 (b) 2000
(c) 3000 (d) 4500

Q.603 A synthetic mRNA molecule is made by using 2 types of nucleotides only i.e Adenine and Cytosine how many different codon could it contain.

(a) 2 (b) 4
(c) 8 (d) 16

Q.604 An mRNA CODON for amino acid alanine is GCC. How many alanine molecules are present in polypeptide, containing eight amino acids, coded by the following DNA template?

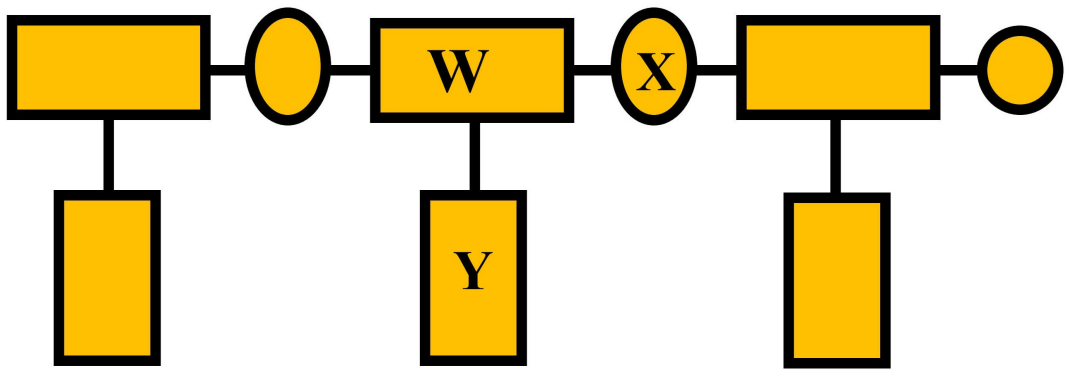
TCG GCC TAC CGG GCC CAT GCC AAT

(a) 0 (b) 1
(c) 2 (d) 3

Q.605 Magnesium (Mg^{+2}) is an inorganic activator for the enzyme

(a) Mangnase (b) Phosphatase
(c) Carbonic anhydrase (d) Lipase

Q.606 Diagram represent anti codon



What do w, x, y respect

	W	X	Y
A.	$C_5H_{10}O_4$	Nitrogenous base	Base Phosphate
B.	$C_5H_{10}O_4$	Phosphate	Nitrogenous base
C.	$C_5H_{10}O_5$	Nitrogenous base	Phosphate
D.	$C_5H_{10}O_5$	Phosphate	Nitrogenous base

Q.607 A polypeptide chain of ten amino acid contains 4 different kinds of amino acid what is the theoretical minimum number of tRNA molecules are required to translate the mRNA of this protein.

(a) 2 (b) 4
(c) 8 (d) 12

Q.608 DNA molecules carries information in

(a) Its amino acid sequence
(b) Its sugars and phosphates in back bone
(c) Order of nucleotides in the molecule
(d) Total number of nucleotides it contain

Q.609 Chromonemata exhibits deeper staining regions along their lengths, giving the threads the appearance of strings of beads, these intensely staining areas are the

(a) Centromere (b) Chromonema
(c) Chromosomes (d) Chromomeres

Q.610 The length of chromosome from centromeres to its terminal end is called

(a) Chromatids (b) Arm
(c) Centrosome (d) Chromomeres

Q.611 Arrange the steps of catalytic action of an enzyme in order and choose the right option:

i. The active site of enzyme is in close proximity of the substrate and breaks the chemical bonds of the substrate.
ii. The binding of substrate induces the enzyme to alter its shape fitting more tightly around the substrate.
iii. The enzyme releases the products of the reaction and the enzyme is free to bind to another substrate
iv. 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 (e) II→I→III→IV

Q.612 What is a ribozyme?

(a) An enzyme that uses RNA as a substrate
(b) An RNA with enzymatic activity
(c) An enzyme that catalyzes the association between the large and small ribosomal subunits
(d) An enzyme that synthesizes RNA as part of the transcription process
(e) An enzyme that synthesizes RNA primers during DNA replication

1	B	51		101	C	151	B	201	A	251	D	301		351	A	401	D	451	A	501	A	551	A	601	A
2	D	52		102	B	152	C	202	D	252	A	302		352	D	402	C	452	B	502	D	552	C	602	A
3	D	53		103	A	153	B	203	C	253	B	303		353	A	403	C	453	C	503	B	553	A	603	C
4	B	54		104	D	154	A	204	A	254	C	304		354	D	404	B	454	C	504	B	554	C	604	B
5	B	55		105	C	155	B	205	D	255	D	305		355	B	405	D	455	D	505	A	555	A	605	B
6	C	56		106	D	156	A	206	C	256	B	306		356	D	406	B	456	D	506	B	556	C	606	D
7	B	57		107	B	157	A	207	A	257	D	307		357	A	407	B	457	C	507	C	557	D	607	B
8	C	58		108	B	158	B	208	B	258	D	308		358	D	408	C	458	A	508	B	558	C	608	C
9	A	59		109	B	159	D	209	B	259	C	309		359	C	409	D	459	B	509	B	559	D	609	D
10	C	60		110	A	160	C	210	A	260	D	310		360	D	410	C	460	C	510	D	560	D	610	B
11	D	61		111	D	161	B	211	A	261	C	311		361	B	411	B	461	C	511	B	561	C	611	C
12	A	62		112	A	162	D	212	C	262	C	312		362	C	412	C	462	C	512	E	562	A	612	B
13	D	63		113	D	163	C	213	D	263	A	313		363	B	413	D	463	D	513	C	563	D	613	
14	A	64		114	C	164	B	214	C	264	B	314		364	C	414	C	464	B	514	C	564	C	614	
15	A	65		115	B	165	D	215	B	265	D	315		365	B	415	D	465	B	515	A	565	A	615	
16	A	66	C	116	C	166	A	216	B	266	D	316		366	C	416	A	466	A	516	B	566	A	616	
17	C	67	C	117	D	167	C	217	D	267	B	317		367	D	417	C	467	C	517	E	567	C	617	
18	A	68	D	118	B	168	C	218	A	268	D	318		368	B	418	C	468	D	518	B	568	C	618	
19	B	69	D	119	A	169	B	219	A	269	A	319		369	B	419	D	469	D	519	A	569	A	619	
20	B	70	B	120	C	170	C	220	A	270	C	320		370	D	420	B	470	C	520	C	570	A	620	
21	D	71	B	121	C	171	B	221	C	271	C	321		371	D	421	A	471	C	521	B	571	A		
22	D	72	B	122	C	172	C	222	B	272	C	322		372	A	422	C	472	B	522	E	572	B		
23	C	73	C	123	A	173	C	223	D	273	B	323		373	D	423	C	473	C	523	B	573	B		
24	C	74	C	124	D	174	D	224	D	274	B	324		374	B	424	D	474	D	524	D	574	C		
25	C	75	D	125	B	175	B	225	B	275	C	325		375	B	425	B	475	B	525	D	575	D		
26	C	76	D	126	D	176	A	226	A	276		326		376	A	426	B	476	B	526	B	576	C		
27	B	77	B	127	D	177	C	227	D	277		327		377	B	427	C	477	A	527	B	577	D		
28	A	78	A	128	D	178	B	228	B	278		328		378	A	428	D	478	B	528	A	578	B		
29	A	79	D	129	C	179	A	229	D	279		329		379	B	429	A	479	B	529	A	579	A		
30	C	80	B	130	C	180	C	230	B	280		330		380	A	430	B	480	C	530	D	580	B		
31	C	81	D	131	C	181	A	231	C	281		331		381	C	431	A	481	A	531	C	581	B		
32	B	82	B	132	D	182	D	232	C	282		332		382	B	432	B	482	D	532	C	582	A		
33	C	83	B	133	C	183	A	233	B	283		333		383	A	433	D	483	C	533	C	583	C		
34	C	84	B	134	D	184	C	234	C	284		334		384	B	434	A	484	B	534	D	584	B		
35	D	85	B	135	B	185	A	235	C	285		335		385	C	435	C	485	C	535	C	585	A		
36	A	86	D	136	A	186	D	236	C	286		336	A	386	D	436	C	486	C	536	B	586	B		
37	D	87	C	137	A	187	D	237	B	287		337	A	387	B	437	D	487	A	537	C	587	C		
38	B	88	D	138	B	188	C	238	A	288		338	D	388	B	438	B	488	C	538	A	588	D		
39	B	89	A	139	A	189	C	239	A	289		339	D	389	D	439	C	489	D	539	B	589	A		
40	A	90	B	140	D	190	D	240	C	290		340	A	390	D	440	D	490	C	540	A	590	C		
41	D	91	D	141	C	191	D	241	A	291		341	B	391	A	441	C	491	C	541	C	591	A		
42	A	92	C,D	142	A	192	D	242	D	292		342	D	392	B	442	A	492	C	542	B	592	D		
43	C	93	D	143	B	193	C	243	C	293		343	A	393	C	443	C	493	B	543	B	593	A		
44	C	94	C	144	B	194	B	244	A	294		344	A	394	C	444	B	494	C	544	B	594	D		
45	B	95	D	145	C	195	A	245	B	295		345	A	395	D	445	B	495	D	545	D	595	C		
46	B	96	D	146	D	196	B	246	B	296		346	D	396	A	446	B	496	A	546	B	596	B		
47	D	97	C	147	C	197	D	247	A	297		347	B	397	D	447	C	497	D	547	D	597	D		
48	A	98	C	148	C	198	A	248	B	298		348	B	398	C	448	C	498	A	548	C	598	D		
49	C	99	B	149	C	199	B	249	D	299		349	C	399	B	449	C	499	D	549	B	599	B		
50	D	100	A	150	D	200	A	250	A	300		350	A	400	C	450	B	500	A	550	C	600	D		