GPLUS EDUCATION

Date :

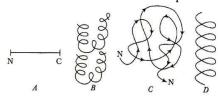
BIOLOGY

Time: Marks:

BIOMOLECULES

Single Correct Answer Type

1. Which kinds of structures of proteins are shown in the figures given below



- a) $A = 1^{\circ}$ structure, $B = 2^{\circ}$ structure, $C = 3^{\circ}$ structure, $D = 4^{\circ}$ structure
- b) $A = 4^{\circ}$ structure, $B = 2^{\circ}$ structure, $C = 3^{\circ}$ structure, $D = 1^{\circ}$ structure
- c) $A = 1^{\circ}$ structure, $B = 4^{\circ}$ sstructure, $C = 3^{\circ}$ structure, $D = 2^{\circ}$ structure
- d) $A = 4^{\circ}$ structure, $B = 3^{\circ}$ structure, $C = 2^{\circ}$ structure, $D = 1^{\circ}$ structure
- 2. Lipid are found in acid insoluble fraction during the analysis of chemical composition of tissues. Given the reason
 - a) It has very high molecular weight
 - b) It is polymer
 - c) It has low molecular weight
 - d) On grinding, the biomembranes are broken into pieces and form insoluble vesicles
- 3. Choose the element which is negligible in living matter
 - a) Si

b) Mg

c) Ca

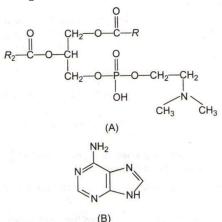
d) S

- 4. Name the plant pigments present in the following
 - I. Carrots
 - II. Tomatoes
 - a) I-Tycopene II-Carotene

b) I-Carotene II-Lycopene

c) I-Leucopene II-Carotene

- d) None of the above
- 5. Which one of the following structural formulae of two organic compounds is correctly identified along with its related function?



- a) A- Triglyceride major-Source of energy
- b) B- Uracil
- -A component of DNA
- c) A-Lecithin
- -A component of cell membrane

	d) B-Adenine	-A nucleotide that make	s up nucleic acids	
6.	Silk consists of		-	
	a) Central core of serici	n	b) Central core of fibroi	n
	c) Both (a) and (b)		d) A fine mixture of fibr	
7.		ding coenzyme is incorre		om and beriem
<i>'</i> ·	=	= -		
	•	cofactor and every cofac		
	-	cofactor but every cofact		
	•		re composed of vitamins	
	•	ctive constituents of enz		
8.			f, for every °C change in e	
	a) 10°	b) 15°	c) 20°	d) 27°
9.		-	ictures that are made up	
	proteins. When this add	ditional chemical part is	an organic molecule, it is	called
	a) Cofactor	b) Coenzyme	c) Substrate	d) Both (a) and (b)
10.	Which one is imino acid	d?		
	a) Pepsin	b) Proline	c) Cysteine	d) Rennin
11.	The sum total compositio	n of acid soluble and acid i	nsoluble fraction pool repr	esents the
	a) Molecular	b) Dead cells	c) Gene library	d) Cellular pool
12.	The 'lock' and 'key' mod	del of enzyme action illus	strates that a particular e	nzyme molecule
	a) May be destroyed an	d resynthesised several	times	
	b) Interacts with a spec	ific type of substrate mo	lecule	
	-	tes under all conditions	>	
		enzyme-substrate compl	ex	
13.	•		groups per molecule. Keep	oing this in mind, select the
	correct pair of acidic amin			,
	a) Lysine and arginine	C FRIIV	b) Aspartic acid and gluta	mic acid
	c) Glycine and alanine	JPLUS EDU(d) Both (a) and (b)	
14.	After doing the chemical	analysis of organic compou	ınds found in living organis	ms, two fractions were
	observed namely			
	a) Acid soluble pool and a	acid insoluble pool		
	b) Carbon pool and hydro	ogen pool		
	c) Inorganic pool and org	anic pool		
	d) Aquous pool and non-a	aquous pool		
15.	Which one is not an exa	ample for hydrolases?		
	a) Dehydrogenase	b) Protease	c) Amylase	d) Esterase
16.	Which type of protein is p	oresent in human skin?		
	a) Primary proteins		b) Secondary proteins	
	c) Tertiary proteins		d) Quarternary proteins	
17.	The metabolic flow is call	ed		
	a) Dynamic state of body	constituents		
	b) Flow of traffic junction	S		
	c) Turn over flow			
	d) Adiabatic flow of react			
18.		and B given below and sele	ct the correct option accord	lingly
	A. $ADP + Pi \rightarrow ATP$			
	$B. ATP \rightarrow ADP + Pi$			
	a) A-Endergonic; B-Exerg			
	b) A-Exergonic; B-Enderg	onic		

	c) A-Endergonic; B-Endergonic		•
10	d) A-Exergonic; B-Exergonic	. I die . David David	
19.	The pyrimidine base, which confers additional s	=	
	a) Adenine b) Guanine	c) Cytosine	d) Thymine
20.	If the total amount of adenine and thymine in a	double-stranded DNA is (60%, then the amount of
	guanine in this DNA will be		
	a) 15% b) 20%	c) 30%	d) 40%
21.	An enzyme extract when subjected to electric fie	eld, separates into two fra	actions each catalyzing
	the same reaction. These fractions are		
	a) Allosteric enzymes b) Isoenzymes	c) Inducible enzymes	d) Coenzymes
22.	Amino acids the substituted methanes. Name the fou	ır substituent groups occup	ying the four valency
	positions		
	a) Hydrogen, carboxyl group, amino group and a	b) Two carboxyl groups a	mino group and OH
	variable group (R)		
	c) Two hydrogen, one carboxyl group, amino group		e hydrogen and one
	and a variable group (R)	carboxyl group	
23.	The 'lock' and 'key' theory of enzyme structure a		•
	a) Morgan b) Robertson	c) Brown	d) Fischer
24.	Histone octamer contains		
	a) Eight types of histones	b) Eight histones of four	r different types
	c) Five histones	d) Six types of histones	
25.	What is grape sugar?	>	
	a) Glucose b) Fructose	c) Sucrose	d) Galactose
26.	Pepsin is anenzyme	2.7.4.62.4.62	D. V. G. I
27	a) Intracellular b) Extracellular	c) Both (a) and (b)	d) None of these
27.	Which one is a polymer?	'ATTAN	1) r .
20	a) Sucrose b) Glycogen	c) Fructose	d) Lactose
28.	Which of the following statements are correct?		
	I. Acetic acid can form cholesterolII. Flow of metabolites through metabolic pathway h	as a definite rate and direc	tion It is called dynamic
	state of body constituents	ias a definite rate and direc	tion. It is called dynamic
	III. Anabolic pathway is endergonic while catabolic p	nathway is exergonic	
	IV. All biomolecules have a term over, <i>i. e.</i> , they are o		to some other
	biomolecules and also made from other biomolecule		
	The correct options is		
	a) All are correct	b) I and II are correct	
	c) Only IV is correct	d) All are wrong	
29.	An α -helix is the example of protein structure		
	a) Primary b) Secondary	c) Tertiary	d) Quaternary
30.	Which is a reducing sugar?		
	a) Galactose	b) Gluconic acid	
	c) β- methyl galactoside	d) Sucrose	
31.	Formation of glycogen from glucose is called		
	a) Glycogenolysis b) Glycogenesis	c) Glycolysis	d) Gluconeogenesis
32.	Which of the following statements are correct for po		
	I. The polysaccharides are found as a part of the acid	l insoluble pellet	
	II. These are long chains of sugars	.,	
	III. They are threads containing different monosacch	arides as building blocks	

	IV. Cellulose is a polymeric polysaccharide consisting of only one type of monosaccharide $i.e.$, fructose				
	a) All are correct		b) All are correct except	IV	
	c) III and IV		d) Only IV is correct		
33.	Select the false statemen				
	= -	stant effort to promote falli	ng into equilibrium		
	II. Energy can enter and l				
	III. Matter can enter and				
	IV. Metabolic pathways a			D 0 1 11	
0.4	a) Only I	b) Only IV	c) I and IV	d) Only II	
34.	Arachidonic acid is				
	a) Non-essential fatty a		b) Essential fatty acid		
	c) Polyunsaturated fatt	ty acid	d) Both (b) and (c)		
35.	Inulin is a polymer of				
	a) Glucose	b) Galactose	c) Fructose	d) Arabinose	
36.	Table sugar consists of				
	a) Lactose	b) Sucrose	c) Maltose	d) glucose	
37.	For nucleic acids, the bui	lding block is a			
	a) Nucleotide	b) Nucleoside	c) Polynucleotide	d) Sugar	
38.	An example of feedbac	k inhibition is			
	a) Cyanide action on cy	rtochrome			
	b) Sulpha drug on folic	acid synthesizer bacteria	a		
	c) Allosteric inhibition	of hexokinase by glucose	e 6-phosphate		
	d) Reaction between su	accinic dehydrogenase ar	nd succinate		
39.	The term metabolism me	eans			
39.	a) The sum of all the enz	ymatically catalysed chemi	cal reactions constantly ta	king place in the cells and	
39.	a) The sum of all the enzitissues of the living or	ymatically catalysed chemi ganisms		king place in the cells and	
39.	a) The sum of all the enz tissues of the living orb) Processes that change	ymatically catalysed chemi ganisms the small molecules into la	arger ones	king place in the cells and	
39.	a) The sum of all the enzy tissues of the living orb) Processes that changec) Processes that conver	ymatically catalysed chemi ganisms	arger ones	king place in the cells and	
	a) The sum of all the enzy tissues of the living orb) Processes that changec) Processes that convered) None of the above	ymatically catalysed chemi ganisms the small molecules into la	arger ones	king place in the cells and	
	a) The sum of all the enzy tissues of the living orb) Processes that changec) Processes that convered) None of the aboveChitin is a	ymatically catalysed chemi ganisms the small molecules into la	arger ones smaller ones		
	a) The sum of all the enzytissues of the living orb) Processes that changec) Processes that converd) None of the aboveChitin is aa) Polysaccharide	ymatically catalysed chemi ganisms the small molecules into la	orger ones smaller ones b) Nitrogenous polysa		
40.	 a) The sum of all the enzytissues of the living or b) Processes that change c) Processes that conver d) None of the above Chitin is a a) Polysaccharide c) Lipoprotein 	ymatically catalysed chemi ganisms the small molecules into la ts the large molecules into :	arger ones smaller ones		
40.	 a) The sum of all the enzy tissues of the living or b) Processes that change c) Processes that conver d) None of the above Chitin is a a) Polysaccharide c) Lipoprotein Richest energy compound 	ymatically catalysed chemi ganisms the small molecules into la ts the large molecules into a	orger ones smaller ones b) Nitrogenous polysa d) protein	ccharide	
40.	 a) The sum of all the enzy tissues of the living or b) Processes that change c) Processes that conver d) None of the above Chitin is a a) Polysaccharide c) Lipoprotein Richest energy compound a) Creatine phosphate 	ymatically catalysed chemi ganisms the small molecules into la ts the large molecules into a und is b) Protein	orger ones smaller ones b) Nitrogenous polysa		
40.	a) The sum of all the enzy tissues of the living or b) Processes that change c) Processes that conver d) None of the above Chitin is a a) Polysaccharide c) Lipoprotein Richest energy compout a) Creatine phosphate Select the wrong states	ymatically catalysed chemi ganisms the small molecules into la ts the large molecules into a und is b) Protein ment.	orger ones smaller ones b) Nitrogenous polysa d) protein	ccharide	
40.	a) The sum of all the enzy tissues of the living or b) Processes that change c) Processes that conver d) None of the above Chitin is a a) Polysaccharide c) Lipoprotein Richest energy compout a) Creatine phosphate Select the wrong stater a) The building blocks	ymatically catalysed chemi ganisms the small molecules into la ts the large molecules into a und is b) Protein ment. of lipids are amino acids	orger ones smaller ones b) Nitrogenous polysa d) protein c) Carbohydrate	ccharide d) fat	
40.	a) The sum of all the enzy tissues of the living or b) Processes that change c) Processes that conver d) None of the above Chitin is a a) Polysaccharide c) Lipoprotein Richest energy compour a) Creatine phosphate Select the wrong states a) The building blocks b) Majority of enzymes	ymatically catalysed chemi ganisms the small molecules into la ts the large molecules into s und is b) Protein ment. of lipids are amino acids s contain a non-protein pa	arger ones smaller ones b) Nitrogenous polysa d) protein c) Carbohydrate art called the prosthetic	ccharide d) fat group	
40.	a) The sum of all the enzytissues of the living or b) Processes that change c) Processes that conver d) None of the above Chitin is a a) Polysaccharide c) Lipoprotein Richest energy compout a) Creatine phosphate Select the wrong stater a) The building blocks b) Majority of enzymes c) The thylakoids are a	ymatically catalysed chemi ganisms the small molecules into la ts the large molecules into a b) Protein ment. of lipids are amino acids contain a non-protein pa	b) Nitrogenous polysad) protein c) Carbohydrate art called the prosthetic	ccharide d) fat group	
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40. 41. 42.	a) The sum of all the enzytissues of the living or b) Processes that change c) Processes that conver d) None of the above Chitin is a a) Polysaccharide c) Lipoprotein Richest energy compout a) Creatine phosphate Select the wrong states a) The building blocks b) Majority of enzymes c) The thylakoids are a d) Crossing over occurs Which of the following is a) Valine	ymatically catalysed chemi ganisms the small molecules into lats the large molecules into state the large molecules into some some some sate pachytene stage of man essential amino acids? b) Leucine	b) Nitrogenous polysad) protein c) Carbohydrate art called the prosthetic ther like a stack of coins eiosis-I c) Tryptophan	ccharide d) fat group forming a granum d) All of these	
40. 41. 42.	a) The sum of all the enzy tissues of the living or b) Processes that change c) Processes that conver d) None of the above Chitin is a a) Polysaccharide c) Lipoprotein Richest energy compout a) Creatine phosphate Select the wrong state a) The building blocks b) Majority of enzymes c) The thylakoids are a d) Crossing over occurs Which of the following is a) Valine The aggregation of the value of the sum o	ymatically catalysed chemi ganisms the small molecules into lats the large molecules into some state of the large molecules into some some some state of the large amino acids are amino acids are contain a non-protein parranged one above the of some state of mean essential amino acids?	b) Nitrogenous polysad) protein c) Carbohydrate art called the prosthetic ther like a stack of coins eiosis-I c) Tryptophanes in a cell is referred to as	ccharide d) fat group forming a granum d) All of these	
40. 41. 42.	a) The sum of all the enzy tissues of the living or b) Processes that change c) Processes that conver d) None of the above Chitin is a a) Polysaccharide c) Lipoprotein Richest energy compout a) Creatine phosphate Select the wrong stater a) The building blocks b) Majority of enzymes c) The thylakoids are a d) Crossing over occurs Which of the following is a) Valine The aggregation of the value a) Acid soluble pool	ymatically catalysed chemi ganisms the small molecules into lats the large molecules into state the large molecules into some some some sate pachytene stage of man essential amino acids? b) Leucine	b) Nitrogenous polysad) protein c) Carbohydrate art called the prosthetic ther like a stack of coins eiosis-I c) Tryptophan is in a cell is referred to as b) Acid insoluble pool	ccharide d) fat group forming a granum d) All of these	
40. 41. 42. 43. 44.	a) The sum of all the enzytissues of the living or b) Processes that change c) Processes that conver d) None of the above Chitin is a a) Polysaccharide c) Lipoprotein Richest energy compose a) Creatine phosphate Select the wrong states a) The building blocks b) Majority of enzymes c) The thylakoids are a d) Crossing over occurs Which of the following is a) Valine The aggregation of the value a) Acid soluble pool c) Cellular pool	ymatically catalysed chemi ganisms the small molecules into lats the large molecules into state the large molecules into some some some some some some some som	b) Nitrogenous polysad) protein c) Carbohydrate art called the prosthetic ther like a stack of coins eiosis-I c) Tryptophanes in a cell is referred to as	ccharide d) fat group forming a granum d) All of these	
40. 41. 42. 43. 44.	a) The sum of all the enzytissues of the living or b) Processes that change c) Processes that conver d) None of the above Chitin is a a) Polysaccharide c) Lipoprotein Richest energy compout a) Creatine phosphate Select the wrong state a) The building blocks b) Majority of enzymes c) The thylakoids are a d) Crossing over occurs Which of the following is a) Valine The aggregation of the value a) Acid soluble pool c) Cellular pool Secondary metabolites can	ymatically catalysed chemical ganisms the small molecules into lates the large molecules into some state of lipids are amino acids a contain a non-protein parranged one above the or some at pachytene stage of man essential amino acids? b) Leucine arious kinds of biomolecules and be observed in	b) Nitrogenous polysa d) protein c) Carbohydrate art called the prosthetic ther like a stack of coins eiosis-I c) Tryptophan is in a cell is referred to as b) Acid insoluble pool d) None of the above	ccharide d) fat group forming a granum d) All of these the	
40. 41. 42. 43. 44.	a) The sum of all the enzytissues of the living or b) Processes that change c) Processes that conver d) None of the above Chitin is a a) Polysaccharide c) Lipoprotein Richest energy compout a) Creatine phosphate Select the wrong stater a) The building blocks b) Majority of enzymes c) The thylakoids are a d) Crossing over occurs Which of the following is a) Valine The aggregation of the value a) Acid soluble pool c) Cellular pool Secondary metabolites ca a) Plant cells	ymatically catalysed chemi ganisms the small molecules into lats the large molecules into state the large molecules into some some some some some some some som	b) Nitrogenous polysa d) protein c) Carbohydrate art called the prosthetic ther like a stack of coins eiosis-I c) Tryptophan in a cell is referred to as b) Acid insoluble pool d) None of the above c) Microbial cells	ccharide d) fat group forming a granum d) All of these	

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II. flavonoids

III. rubber

IV. essential oils

V. antibiotics

VI. coloured pigments

VII. scents

VIII. gums

IX. spices

Choose the correct option

- a) I to IX
- b) All except II and IX
- c) I, III, IV and VI
- d) All except I and VII

- 47. What is the starting point in the production of food?
 - a) Catabolism
- b) Metabolism
- c) Anabolism
- d) Photosynthesis

48. Name the amino acids A - C correctly

a) A-Glycine, B-Serine, C-Alanine

b) A-Alanine, B-Glycine, C-Serine

c) A-Serine, B-Glycine, C-Alanine

- d) A-Serine, B-Alanine, C-Glycine
- 49. Name the heterocyclic compounds which are known as nitrogenous bases

Choose the most appropriate options

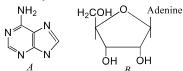
- a) Adenine, guanine, uracil, cytosine and thymine
- b) Adenine, guanine, uracil and thymine
- c) Adenine, guanine, cytosine, uracil
- d) None of these
- 50. In which one of the following enzymes copper is necessarily associated as an activator?
 - a) Carbonic anhydrase

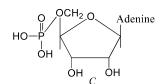
b) Tryptophanase

c) Lactic dehydrogenase

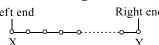
d) Tyrosinase

51. Identify the structural formulae and select the correct option





- a) A-Adenine, B-Adenosine, C-Adenylic acid
- b) A-Guanine, B-Adenosine, C-Adenylic acid
- c) A-Adenosine, B-Adenylic acid, C-Adenine
- d) A-Uracil, B-Adenosine, C-Adenylic acid
- 52. The regulation of the chemical composition of blood and body fluids and other aspects of its internal environment by an organism to maintain the physiological process is called
 - a) Entropy
- b) Enthalpy
- c) Homeostasis
- d) Metabolism
- 53. Name the term given to the left and right ends of a polysaccharide



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	a) End product b) Substrate	c) A by-product d) Coenzyme
66.	Jacob and Monod named some enzymes as allost	
6.0	a) H ³ b) P ³²	c) N ¹⁵ d) S ³⁵
05.	Which of the following radioisotope is not suitab	
65	d) Providing constant supply of enzymes Which of the following redicinatons is not switch	le for DNA labeling bessed studies?
	c) Cellular metabolism utilises only those reactions t	hat are irreversible
	b) The products of one reaction become the reactant	
	a) Use feedback inhibition to turn off pathways	
	How do cells avoid reaching metabolic equilibrium?	
64.	When a metabolic disequilibrium is in effect, then on	ly cells continue to function
	c) Reducing sugars	d) proteins
	a) Polysaccharides like starch	b) Lipids
63.	Benedict's reagent test is conducted to confirm t	he presence of
	c) Coenzyme=Apoenzyme+Holoenzyme	d) Holoenzyme=Coenzyme+Apoenzyme
	a) Apoenzyme=Holoenzyme+Coenzyme	b) Holoenzyme=Apoenzyme+Coenzyme
62.	With reference to enzymes, which one of following	ng statements is true?
	c) Higher number of –CH ₂ groups (1 to 19 carbons)	d) All of the above
	a) Methyl	b) Ethyl
61.	A fatty acid has a carboxyl group attached to R group	•
	c) Organic compounds	d) Only DNA
	a) Biomolecules	b) Inorganic compounds
60.	All the carbon compounds obtained from living tissue	
	a) Ligases b) Lyases	c) Hydrolases d) Isomerases
59.	Enzymes that catalyze inter-conversion of optical	ıl, geometrical or positional isomers, are
	the same carbon	9 assaut 9 ab an anamenen on
	d) Amino acids are inorganic compounds containing	an amino group and acidic group as substituents on
	c) Amino acids are inorganic compounds containing two different carbons	an ammo group and acidic group as substituents on
	the same carbon s) Amino acids are inorganic compounds containing	an amino group and acidic group as substituents as
	b) Amino acids are organic compounds containing an	amino group and an acidic group as substituents on
	different carbons	
	a) Amino acids are organic compounds containing an	amino group and acidic group as substituents n two
58.	Amino acids are organic compounds and are called $\boldsymbol{\alpha}$	-amino acids. Why?
	c) Enzyme – Lipopolysaccharide	d) ATP – Nucleotide derivative
	a) Fungi – Chitin	b) Phospholipid – Plasma membrane
57.	Which one of the following is wrongly matched?	
	c) Uracil and cytosine	d) Guanine and uracil
J 0.	a) Cytosine and thymine	b) Adenine and guanine
56.	Select the correct pair of substituted purines	a) i ecaback illilibrioi
	c) Allosteric modulator	d) Feedback inhibitor
	a) Non-competitive inhibitor	b) Competitive inhibitor
55.	The inhibitor which inhibits the enzyme activity by b close resemblance to the substrate in its molecular st	-
	a) Hydrogen b) Von der Waal The inhibitor which inhibits the engume activity by h	c) Covalent d) Ionic
54.	'G' in DNA strand base pairs with 'C' by 3 bonds	
	end	end–N –terminal end
	Left end— non-reducing end, Right end—reducing	d) Left end—C —terminal end, Right
	end—C —terminal end	end
	Left end—N —terminal end, Right	Left end—reducing end, Right end—non-reducing

- 67. Identify the term 'ash' in term of living tissue sample analysis from the statements given below
 - a) Organic compounds oxidised to gaseous form (CO₂ and water vapour) after burning of the tissue
- b) The material left after burning the tissue which contains inorganic elements (*e.g.*, calcium, magnesium etc.)
 - c) Compounds removed in the form of gases
- d) Compounds which may be soluble in intracellular fluid
- 68. Grinding of a living tissue in trichloroacetic acid shows the presence of the inorganic compounds like sulphate, phosphate etc, which are categorised in
 - a) Acid insoluble fraction
 - b) Acid soluble fraction
 - c) Both (a) and (b)
 - d) Not found in cellular pool
- 69. Formation of lactic acid form glucose occurs in... metabolic steps
 - a) 25

b) 5

c) 30

- d) 10
- 70. A nucleotide has three chemically distinct compounds. These are A, B and C

Choose the correct option for A, B and C

- a) A-Sugar, B-carbonates, C-chlorides
- b) A-DNA, B-cellulose, C-chitin
- c) A-Heterocyclic compound, B-Monosaccharide, C-a phosphate
- d) A-Phosphoric acid, B-Proteins, C-acids
- 71. Answer briefly
 - I. Hydrolysis of glycogen to glucose is termed as?
 - II. Name the enzyme which takes part in the hydrolysis of glycogen
 - III. Amylum is an another name of
 - IV. Name the polysaccharide formed as the end product of the photosynthesis

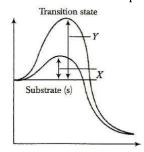
Correct option with all the answers is

- a) I-Glycogenolysis, II-Amylases, III-Starch, IV-Starch b) I-Starch, II-Amylases, III-Glycogenolysis, IV-Starch
- c) I-Starch, II-Glycogenolysis, III-Starch, IV-Amylases d) I-Amylases, II-Glycogenolysis, III-Starch, IV-Starch
- 72. Which of the following is not a conjugated protein?
 - a) Peptone
- b) Phosphoprotein

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- c) Lipoprotein
- d) Chromoprotein

- 73. is the most abundant protein in whole of the biosphere
 - a) Collagen
- b) Trypsin
- c) Insulin
- d) RUBISCO
- 74. Choose the correct option representing X and Y in the given graph



- a) X-Activation energy without enzymes, Y-Activation energy with enzyme
- c) X-Substrate concentration with enzyme, Y-Substrate concentration without enzyme
- 75. Given below is the chemical formula of

 $\begin{array}{c} & \text{O} \\ & || \\ \text{CH}_{3}(\text{CH}_{2})_{14} - \text{C} - \text{OH} \end{array}$

- b) X- Activation energy with enzyme, Y-Activation energy without enzyme
- d) X-Substrate concentration without enzyme, Y-Substrate concentration with enzyme

	a) Palmitic acid b) Stearic acid	c) Glycerol	d) Galactose		
76.	Which enzyme is useful as colour brightening agent in detergent industry?				
	a) Amylase b) Lipase	c) Protease	d) Cellulase		
77.	Locations or sites in the human DNA where sing	gle base DNA differences	occur, are called		
	a) Repetitive DNA	b) VNTR			
	c) SNP	d) SSCP			
78.	An organic substance bound to an enzyme and o	essential for its activity, i	s called		
	a) Coenzyme b) Holoenzyme	c) Apoenzyme	d) Isoenzyme		
79.	Choose the correct statements				
	I. Bond energy (ATP) is utilised for biosynthesis, osi		•		
	II. When glucose is degraded into lactic acid in our n				
	III. Assembly of a proteins from amino acids require				
	IV. Majority of metabolic reactions can occur in isola				
	V. There are many examples of uncatalysed metabol a) Except IV and V b) I and III	c) All of these	d) None of these		
80.	Maltose consists of which one of the following?	c) All of these	d) None of these		
00.	a) β – glucose and α – galactose	b) α – glucose and α –	fructose		
	c) α – sucrose and β – glucose	d) Glucose and glucose	ii detose		
81.	Mannitol is	a) dideose dila gideose			
011	a) Amino acid b) Amino alcohol	c) Sugar alcohol	d) Sugar acid		
82.	Almost all enzymes are in nature	-) bagar areonor	any bugur ucra		
	a) Lipids b) Proteins	c) Carbohydrates	d) Nucleic Acid		
83.	One of the secondary structures exhibited by DNA is				
	a) Stehenson's model b) Watson-Crick model	c) Bohr's model	d) Wilkenson model		
84.	Feedback inhibition of enzymes is affected by w	hich of the following?			
	a) Enzyme	b) Substrate			
	c) End products	d) Intermediate end pro	oducts		
85.	All the chemical reactions occurring in living organi		22.7		
0.0	a) Metabolism b) Anabolism	c) Catabolism	d) Enzymatic		
80.	Given below are two statements A and B. Choos		ited to the statements.		
	Statement A Amino acids are amphoteric in th				
	Statement B All amino acids are necessary for	b) Both the statements	A and D and gameat		
	a) Statement A is correct but statement B is wrong	b) Both the statements	A and B are correct		
	c) Statement A is wrong but statement B is	d) Both the statements	A and B are wrong		
	correct				
87.	The tertiary structure of the proteins containing	•	chieved through		
	a) Hydrogen bonds	b) Disulphide bonds			
	c) Van der Waal's force	d) Ionic bonds			
88.	Maltose gives rise to two molecules of) (1	D 0		
00	a) Fructose b) Lactose	c) Glucose	d) Sucrose		
89.	One of the following is a simple protein.	A. I. branch at the	J) All		
0.0	a) Nucleoprotein b) Glycoprotein	c) Lipoprotein	d) Albumin		
90.	Identify X and Y in the given protein structure First Last				
	amino acid amino acid				

				opias Laacation
	a) X-N-terminal amine	o acid, Y-C-terminal amin	o acid	
	•	o acid, Y-N-terminal amin		
	=	o acid, Y-N-terminal amin		
	•	o acid, Y-C-terminal amin		
91.		g statements are correct?		
		of carbon and hydrogen v	with respect to other elei	nents is higher in any living
	organisms			
		ave more nitrogen and ox	ygen per unit mass than	inanimate objects (e.g., earth
	crust)	recent in a cample of eart	h's crust are also present	in a sample of living tissue
	-	nave more Ca, Mg, Na in th	-	
	a) All of these	b) All except IV	c) Only IV	d) None of these
92		nodicarboxylic amino ac	•	a) None of these
, 21	a) Cystine	b) Lysine	c) Cysteine	d) Aspartic acid
03		g statements about enzyn	<u>-</u>	u) Aspai de acid
75.		er the overall change in fro		
	II. Enzymes are highly		ee energy for a reaction	
		needed to start a chemical	l reaction is called activa	tion energy
		ins whose three dimension		
	a) I and V	b) I, II and V	c) II and V	d) All of these
94.	Which amino acid is	denoted by symbol 'F'	?	
	a) Phenylalanine		b) Proline	
	c) Tryptophan	< A	d) Methionine	
95.	Which enzyme catalys	se the break down of hydi	rogen peroxide to water	and oxygen?
	a) A carbonic anhydra	ise and catalase	b) Hydrolyase and	l oxidase
	c) Peroxidase and cat	alase	d) Hydrolase and	oxidase
96.	Sugar and amino aci		LICATION	
	a) Primary metaboli	tesPLUS_ELJ	b) Secondary me	tabolites
	c) Feedback		d) Inoculum	
97.	Which of the followi	ng statements regardir	ng enzyme inhibition is	correct?
	a) Non-competitive	inhibition of an enzyme	e can be overcome by a	dding large amount of substrate
	b) Competitive inhib	oition is seen when a su	bstrate competes with	an enzyme for binding to an
	inhibition protein	l		
	c) Competitive inhib	oition is seen when the	substrate and the inhib	oitor compete
	d) Non-competitive	inhibitors often bind to	the enzyme irreversib	ly
98.	Enzymes are function	onal at	•	
	a) 10-15°C	b) 15-25°C	c) 25-30°C	d) 30-50°C
99.	Cellulose is made up	of	•	•
	Branched chain o		ed by $\alpha - 1$, 4 glycosidi	c bond in straight chain and β –
		nd at the site of branchi		
	Branched chain o		•	ic bond in straight chain and β -1,
	nı	at the site of branching		
		n of glucose molecule li		ic bond
		n of glucose molecule li		
100	=	ng statements is wrong		
	a) Sucrose is a disac	•	b) Cellulose is a _l	oolvsaccharide
		ur containing amino ac		·
101	•	•		nents found in a living system

_				
(-n	liic	FAI	ucatior	7
\mathbf{u}	u	Lui	acution	

				Opius Luucution
	a) C, H, O, P	b) C, H, O, N	c) C, N, O, K	d) C, H, O, S
102.	Proteins are heteropolymo	ers which are madeup of	type of monomers of am	ino acids
	a) 10	b) 4	c) 20	d) 3
103.	Catabolic and anabolic pat	thways are often coupled in		
	a) Both the path are the sa	ame energy	b) The free energy release to drive other	d from are pathway is used
	c) The intermediate of a calin the anabolic pathway	atabolic pathway are used	d) Their enzymes are cont and inhibitors	rolled by their activators
104.	Molecular weight of pro	tein is		
	a) >12000	b) >6000	c) <12000	d) 600-3000
105.	Name the disaccharide wh	nich is the major sugar of in	sect haemolymph	
	a) Trehalose	b) Chitin	c) Cellulose	d) All of these
106.	One turn of DNA has nu	cleotide pairs		
	a) 8	b) 100	c) 6	d) 10
107.	Phospholipids are			•
		b) Amphibolic	c) Hydrophobic	d) None of these
108.	• •	catalysed by which of the er	•	,
	_		y	
	$NADH + H^+ + \frac{1}{2}O_2 \longrightarrow NA$	$AD^{+} + H_2O$		
	a) Hydrolases			
	b) Cytochrome oxidases			
	c) Transferases			
	d) Lyases	S. 4. 3		
109.		are comparable to automol		
	a) Because they have defin		b) Because they result in o	lumsiness
		nassive production of toxic	d) None of the above	
	compounds	Carrier EDITIO	ATTON	
110.		carboxyl group of one a	mino acid and amino gro	up of adjacent amino
	acid, is called			
	-		c) Covalent bond	d) All of these
111.	In animal tissues, the cate	gories of compounds prese	nt are called	
	a) Molecules	b) Primary metabolites	c) Secondary metabolites	d) Biomolecules
112.	Cellulose is a polymer of	f		
	a) α – glucose	b) α – fructose	c) β – glucose	d) β – fructose
113.	Proteins with catalytic pov	wer are called		
	a) Reactants	b) Substrate	c) Co-factors	d) Enzymes
114.	The enzyme which conv	erts corn starch into fruc	ctose rich corn syrup is	
	a) Amylase	b) Glucoamylase	c) Glucoisomerase	d) All of these
115.	The globular proteins un	ndergo structural change	es, in response to extreme	es of pH or temperature,
	the process called			
	a) Renaturation	b) Denaturation	c) Combination	d) Both (a) and (b)
116.	Which of the following i			, () ()
	a) Glucose	b) Fructose	c) Sucrose	d) Galactose
117		ahl's experiments, heavy		
/,	centrifugation in	am s experiments, neavy	Dian was alsoniguished i	Tom normal bish by
	-	ы 14ми <i>с</i> і	a) 15MU CI	d) CcCl gradient
110	a) CsOH gradient	b) ¹⁴ NH ₄ Cl	c) ¹⁵ NH ₄ Cl	d) CsCl gradient
11Ω.	Protein in silk thread is	L) IZ	-) A11 '	1) Cl 1 1:
	a) Fibroin	b) Keratin	c) Albumin	d) Globulin

119. What are proenzymes?			
a) Inactive form of enzymes	b) Active form of enzymes		
c) Neutral form of enzymes	d) None of these	d) None of these	
120. Which of the following is the simplest amino ac	cid?		
a) Tyrosine b) Asparagine	c) Glycine	d) Alanine	
121. Hydrolysis of a glycosidic bond in a disaccharide is			
a) Cleavage of biomolecules	b) Hydrolysis of biomol	ecules	
c) Transformation of biomolecules	d) Formation of biomole		
122. Which of the following is non-reducing sugar?			
a) Starch b) Sucrose	c) Maltose	d) Galactose	
123. Phospholipids are	,	,	
a) Conjugated lipids b) Derived lipids	c) Simple lipids	d) None of these	
124. Richest source of protein is	e) emple upide	and those of these	
a) Rice b) Gram	c) Wheat	d) <i>Glycine max</i>	
125. Which of the following polysaccharide is present as	-	•	
a) Glycogen b) Cellulose	c) Insulin	d) Starch	
126. Which form of keratin is present in human hair?	c) msum	u) starth	
a) Parallel β-sheet	b) α-helix		
c) Antiparallel β-sheet	d) None of these		
127. The most abundant chemical in living organisms is			
a) Protein	b) Water		
c) Lipids	d) Nucleic acids		
128. Basic structure of proteins was given by	a) Nucleic acius		
The state of the s	c) Wester	d) E Cangon	
	c) Waston	d) F Sanger	
129. Name the structural formulae of the given structure NH2	es correctly		
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			
N HN ON THE EDITION	CATION		
IN IN .l.	07111011		
H A B			
a) A-Adenine; B-Uracil	b) A-Guanine; B-Thymir	ne	
c) A-Adenine; B-Guanine	d) A-Cytosine; B-Thymir		
130. Name the most abundant protein in animal world			
a) RUBISCO	b) Carboxylase-oxygena	ise	
c) Collagen	d) Cellulose		
131. Proteins with catalytic power are known as			
a) Metabolites	b) Essential proteins		
c) Enzymes	d) Receptors		
132. In a polypeptide chain, a β -pleated sheet is an exam	nple of		
a) 2° structure b) 1° structure	c) 4° structure	d) 3° structure	
133. Which of the following is the example of struct	ural protein?		
a) Myosin b) Collagen	c) Keratin	d) All of these	
134. Which of the following statements are incorrect?	-		
I. Left end of a polysaccharide is called non-reducin	ng end while right end is ca	lled reducing end	
II. Starch and glycogen are branched molecules	0	O	
III. Starch and glycogen are the reserve food mater	ials of plants and animals, i	respectively	
IV. Starch can hold iodine molecules in its helical se			
cannot hold iodine	-	-	
a) Statements I and II are incorrect	b) All statement are inco	orrect	

c) Only statement IV is incorrect

- d) None of these
- 135. Enzymes catalyses the biochemical reactions by the activation energy a) Increasing
 - b) Lowering
- c) Unaltering
- d) Either (a) or (b)

136. Identify the given structure and name the compound



- a) Ribose
- b) Sucrose
- c) Glucose
- d) Ribulose

- 137. Answer briefly
 - I. Which colour glycogen gives on its reaction with iodine solution?
 - II. What is satellite DNA?
 - III. Name three components of a nucleotide molecule

Correct option will all answers is

a) I-Blue

II-Long sequences

III-Phosphoric acid, pentose sugar and nitrogenous base

c) I-Blue

II-Non-repetitive base pairs

III-Glucose phosphoric acid, nucleic acids

- 138. The acid soluble pool, roughly represents
 - a) Chemical composition of cell
 - c) Both (a) and (b)

b) I-Red

II-Repetitive base pairs

III-Phosphoric acid, pentose sugar and nitrogenous organic base

d) I-Red

II-Non-repetitive base pairs

III-Phosphoric acid, fructose, nucleotides

- b) Cytoplasmic composition of cell
- d) None of the above
- 139. Choose the type of enzyme involved in the following reaction

$$S - G + S' \rightarrow S + S' - G$$

- a) Dehydrogenase
- b) Transferase
- c) Hydrolase

b) Glucokinase

d) All of these

d) Lyase

- 140. Which of the following is an isozyme?
 - a) α-amylase
 - c) Lactic dehydrogenase
- 141. Primary metabolites play known roles in
 - a) Ecology
 - c) Human welfare

- b) Chemical process
- d) Physiological process

b) Glucose and galactose

d) None of the above

- 142. Sucrose, a common table sugar is composed of
 - a) Glucose and fructose
 - c) Fructose and galactose
- 143. Double sugar is
 - a) Table sugar
 - c) Sugar in germinating seeds

 - a) Position of hydroxyl group

- b) Milk sugar
- d) All of the above
- 144. Variety of amino acids are formed on the basis of

 - c) Position of hydrogen

- b) Position of carboxyl group
- d) Nature of R group
- 145. Carbohydrates, the most abundant biomolecules earth, are produced by
 - a) All bacteria, fungi and algae

- b) Fungi, algae and green plant cells
- c) Some bacteria, algae and green plant cells
- d) Viruses, fungi and bacteria
- 146. Which of the two groups of following formula is involved in peptide bond formation between different amino acids?

$$^{^{1}\text{H}_{2}\text{N}} - \overset{\text{H}^{2}}{\overset{\text{C}}}{\overset{C}}{\overset{\text{C}}{\overset{\text{C}}}{\overset{\text{C}}{\overset{\text{C}}{\overset{\text{C}}{\overset{\text{C}}}{\overset{\text{C}}{\overset{C}}{\overset{\text{C}}}{\overset{\text{C}}{\overset{\text{C}}}{\overset{\text{C}}{\overset{C}}}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}}{\overset{C}}{\overset{C}}{\overset{C}}}{\overset{C}}}{\overset{C}}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}}{\overset{C}}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}}{\overset{C}}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}}{\overset{C}}{\overset{C}}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}}{\overset{C}}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}}{\overset{C}}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}}{\overset{C}}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{C}}{\overset{$$

a`	1	and	:
a,		anu	

b) 2 and 3

c) 2 and 4

d) 1 and 4

147. Where the starch is stored in the plant cell?

a) Golgi bodies

b) Amyloplasts

c) Chromoplast

d) None of these

148. The form of DNA with 34Å pitch with a rise per base pair of 3.4Å is called

a) A-DNA

b) B-DNA

c) Z-DNA

d) C-DNA

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

a) The Km value

b) The pH optimum value

c) Formation of the product

d) Molecular size of the enzyme

150. A competitive inhibitor, competes with the substrate, for the substrate binding site of enzymes due to its

a) Structural similarity with substrate

b) Molecular weight similarity with substrate

c) Both (a) and (b)

d) Larger size than that of substrate

151. The most abundant molecule in cell, is

a) Water

b) Carbohydrate

c) Lipid

d) Protein

152. The left handed DNA is called

a) A-DNA

b) B-DNA

c) Z-DNA

d) C-DNA

153. Adult human haemoglobin consists of

a) 2 subunits

b) 2 subunits (β, β)

c) 4 subunits $(2\alpha, 2\beta)$

d) 3 subunits $(2\alpha, 1\beta)$

154. The below structural formula belongs to

a) Ribose

b) Glucose

c) Sucrose

d) Deoxyribose

155. Which enzyme is most specific?

a) Trypsin

b) Pepsin

c) Sucrase

d) Nuclease

156. Chemical compounds which are found in the acid insoluble fraction are called

a) Biomolecules

b) Macromolecules

c) Micromolecules

d) Both (a) and (b)

157. Lipids are generally

I. water soluble

II. water insoluble

III. soluble in non-polar organic solvents

IV. not soluble in non-polar organic solvents

Choose the correct options

a) Only I

b) II and III

c) II and IV

d) Only IV

158. Nucleotides are formed by

a) Purine, sugar and phosphate

b) Purine, pyrimidine and phosphate

c) Purine or pyrimidine, sugar and phosphate

d) Pyrimidine, sugar and phosphate

159. The substance, which is metal ion essential for the normal functioning of enzyme is called

a) Cofactor

b) Coenzyme

c) Holoenzyme

d) None of these

160. Water molecules are connected by

a) Van der Waal's force

b) Covalent bond

c) H-bond

d) Amide linkage

161. The physical and the chemical compositions of amino acids are essentially of the

a) Only the carboxyl group

b) Only the *R*-functional group

			Gpius Education
	c) Amino, carboxyl and R groups	d) Only amino group	
162	. The proteinaceous molecule that joins a non-protein	aceous prosthetic group to	form a functional enzyme
	is called		
	a) Co-factor b) Apoenzyme	c) Holoenzyme	d) Isoenzyme
163	. Select the correct constituents of protein		
	a) Carbon, hydrogen, oxygen and nitrogen	b) Carbon, hydrogen, nitro	
	c) Carbon, hydrogen, nitrogen, oxygen and sulphur		oxygen
164	. The β -pleated sheet structure found in proteins is du	ie to	
	a) Linking together of two or more polypeptides		
	b) Coiling of polypeptide chains		
	c) Formation of peptide bonds		
	d) Folding of the coiled polypeptide chains		
165	. Enzymes, vitamins and hormones can be classifi	ed into a single category	of biological chemicals,
	because all of these		
	a) Enhance oxidative metabolism		
	b) Are conjugated proteins		
	c) Are exclusively synthesized in the body of a liv	ving organism as at prese	ent
	d) Help in regulating metabolism		
166	Paraffin wax is		
	a) Ester b) Acid	c) Monohydric alcohol	d) Cholesterol
167	. Many physiological functions are performed by proto	-	
	discharge		•
	a) Antibiotics	P	
	b) Hormones		
	c) Pigment making colours of flowers		
	d) Pigment conferring colour to skin		
168	. One full turn of the helical strand involves steps	ATION	
	a) 20 b) 15	c) 34	d) 10
169	. One strand of DNA has sequence of nucleotide 3	' ATTCGCTAT 5' then oth	er strand of DNA has
	a) 3' TAAGCGATA 5' b) 5' TAGCACGTA 5'	c) 5' TAGCACGTA 3'	d) 5' TAAGCGATA 3'
170	. In a protein molecule, the amino acid units are linked	d together by bonds fo	ormed between the amino
	acid units and the carboxyl group of successive amin	o acids	
	a) Peptide b) Hydrogen	c) Covalent	d) Ionic
171	. A in the given structure represents		
	$ \begin{array}{c c} O \\ HO - P & OCH_2 \\ A \\ OH \end{array} $ $ \begin{array}{c c} N-base \\ \hline \end{array} $		
	HO-P-OCH _{2 O.} N-base		
	A OH		
	a) Ester bond	b) Ionic bond	
	c) Phosphate bond	d) Glycosidic bond	
172	. Identify wheather the given statements are true or fa	alse	
	I. A protozoan contains thousand of organic compou		
	II. Concentration of biomolecules in an organism is n		
	a) I-True; II-True b) I-False; II-False	c) I-True; II-False	d) I-False; II-True
173	. Michaelis Menten constant (km) is equal to		
	a) The rate of enzymatic activity		
	b) The rate of reaction		
	c) Substrate concentration at which the reaction atta		locity
	d) Substrate concentration at which the rate of react	ion is maximum	

		Opius Luucutioi
174. Which one of the following amino acids was not		
a) Glycine b) Aspartic acid	c) Glutamic acid	d) Alanine
175. Which of the following amino acids is not optical	ly active?	
a) Glycine b) Valine	c) Leucine	d) Isoleucine
176. What provides roughage (fibre) in our diet?		
a) Cellulose b) Sucrose	c) Maltose	d) Collagen
177. Starch can be used as an indicator for the detecti	on of traces of	
a) Glucose in aqueous solution	b) Proteins in blood	
c) Iodine in aqueous solution	d) All of the above	
178. Pick the odd statement out		
a) Removal of CO ₂ from amino acids converts an ami	no acid into an amine	
b) All the biomolecules have a turnover		
c) Metabolic pathway are termed as transformation i	reactions	
d) Metabolic pathways always follows a linear route		
179. Which one is the sweetest sugar?		
a) Glucose b) Fructose	c) Sucrose	d) Maltose
180. Choose the correct graph showing, the effect of pH or	the velocity of a typical en	zymatic reaction (V)?
a) V b) V	c) V	d) ^v
a) b)		u)
рН рН	pН	рН
181. In which one of the following sets of three items	each belong to the catego	ory mentioned against
them?		
a) Lysine, glycine,	b) Myosin, oxytocin	
thiamine – Amino acids	· ·	- Hormones
c) Rennin, helicase	d) Optic nerve,	
and hyaluronidase – Enzymes	oculomotor, vagus -	- Sensory nerves
182. The inhibitor which binds to the enzyme at site other		-
substrate in structure is called		
a) Activator	b) Substrate analogue	
c) Competitive inhibitor	d) Non-competitive inhibit	tor
183. Biomolecules are constantly being changed into some		
a) Amino acids b) Biomolecules only	c) Monosaccharides	d) Enzymes
184. A physical change, during a chemical reaction refers t	0	
a) Change in shape without breaking of bonds		
b) Change in state of matter		
c) Change in the bond energy during the chemical rea	action	
d) Both (a) and (b)		
185. Identify, in which of the following carbon compounds	s, heterocyclic rings can be	found?
a) Proteins b) Amino acids	c) Nitrogen bases	d) Lipids
186. Hydrolysis of lipid yields?		
a) Fats	b) Fatty acids and glycer	ol
c) Mannose and glycerol	d) Maltose and fatty acid	ls
187. If all the peptide bonds of protein are broken, the	en the remaining part is	
a) Amide b) Oligosaccharide	c) Polypeptide	d) Amino acid
188. In a polysaccharide, the individual monosacchari	• • •	
a) Glycosidic bond	b) Peptide bond	
c) Ester hand	d) Phosphodiester hand	

- 189. The free energy of a system, in a spontaneous reaction
 - a) Decreases

b) Increases

c) Becomes equal to zero

- d) Remains unchanged
- 190. Inhibition of enzyme activity by a molecule, which reversibly modifies the structure of the active site of the enzyme is called
 - a) Competitive inhibition

b) Non-competitive reversible inhibition

c) Allosteric inhibition

- d) None of the above
- 191. Pentoses and hexoses are common
 - a) Monosaccharides
- b) Disaccharides
- c) Polysaccharides
- d) Oligosaccharides

- 192. Which one of the following is polysaccharide?
 - a) Glycogen
- b) Sucrose
- c) Lactose
- d) Maltose
- 193. Oxygenic compounds of biological process, which activate chemical reactions are
 - a) Vitamins
- b) Hormones
- c) Enzymes
- d) Fats

- 194. A product of metabolism is called a
 - a) Metabolite
- b) Catabolite
- c) Anabolite
- d) All of these

- 195. Starch and cellulose are compounds of many units of
 - a) Glycerol
- b) Amino acids
- c) Simple sugars
- d) Fatty acids
- 196. According to Watson-Crick model, DNA exists as a ...A... The two strands of polynucleotides are ...B... The backbone is formed by the sugar ...C..., ...D... chain. The nitrogen bases are more or less ...E... to this backbone

Choose the correct options for the blanks A, B, C, D and E

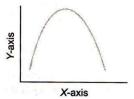
- a) A-chain, B-perpendicular, C-carbonate, D-base, E-parallel
- b) A-helix, B-parallel, C-sugar, D-phosphate, E-perpendicular
- c) A-double helix, B-antiparallel, C-phosphate, D-sugar, E-perpendicular
- d) A-strand, B-parallel, C-sulphate, D-sugar, E-perpendicular
- 197. After grinding a living tissue in trichloroacetic acid and then straining it, you would obtain two fractions : acid soluble pool and acid insoluble fraction. Acid insoluble fraction does not contains
 - a) Nucleic acids

b) Polysaccharides

c) Lipids

- d) Flavonoids and alkaloids
- 198. The curve given below shows enzymatic activity with relation to three conditions (pH, temperature and substrate concentration)

What do the two axes (*X* and *Y*) represent?



	X-axis	Y-axis
a)	Temperature	Enzyme activity
b)	Substrate	Enzymatic
	concentration	activity
c)	Enzymatic activity	Temperature
d)	Enzymatic activity	рН

- 199. Choose the correct options
 - a) $E + S \rightarrow ES \rightarrow E + P \rightarrow EP$
 - b) $E + S \rightleftharpoons ES \rightarrow E P \rightarrow E + P$
 - c) $E + S \rightarrow ES \rightleftharpoons E P \rightarrow E + P$

d) $E + S \rightleftharpoons ES \rightleftharpoons E - P \rightleftharpoons E + P$					
200. Which of the following statement(s) are/is correct?		1 1 1 1 .			
I. In the process of metabolism, all organic biomolec	cules are constantly being l	oroken down but not being			
built up through chemical reactions II. A product of metabolism in called a metabolite, b	ut not always				
III. Metabolism is always known to built up new pro	· · · · · · · · · · · · · · · · · · ·				
IV. Metabolism is always known to built up new pre					
a) All are incorrect	b) All are correct				
c) Only IV is correct	d) II and IV are correct				
201. The 'Repeating unit' of glycogen is	a) It alia IV are correct				
a) Fructose b) Mannose	c) Glucose	d) galactose			
202. Every chemical (metabolic) reaction is a reaction		a) galactose			
a) Induced b) Reversible	c) Catalysed	d) Spontaneous			
203. Which of the following secondary metabolites are u	•	a) opontaneous			
a) Vinblastin and curcumin	b) Anthocyanin				
c) Gums and cellulose	d) Abrin and ricin				
204. Enzymes are most functional at the temperature rai	•				
a) 15° – 25°C b) 20° – 30°C	c) 30° – 50°C	d) 50° – 60°C			
205. One of the major feature of metabolic reaction is that	•				
a) Elementary reactions	J				
b) Non-linked reactions					
c) Heat evolving reactions					
d) Catalysed reactions	>				
206. Which of these is not a ketone body?	_				
a) Acetoacetic acid	b) Acetone				
c) Succinic acid	d) Betahydroxy butyri	c acid			
207. Which of the following is not a cell inclusion?	CATTONI				
a) Protein b) Carbohydrate	c) Pigment	d) Vacuole			
208. Which of the following is incorrect?		,			
a) In cellular organisms, DNA is genetic material	b) Adenylic acid is nucle	oside			
c) Cytidine is nucleoside	d) N-bases (A, G, C, T, U)				
209. Identify wheather the given conditions are anabolic	•				
I. Glucose → Lectic acid					
II. Amino acids → Proteins					
a) I-catabolic; II-catablic	b) I-anabolic; II-cataboli	c			
c) I-catabolic; II-anabolic d) I-catabolic; II-catabolic					
210. Choose the correct statement					
a) The living state is a non-equilibrium steady state	to be able to perform wor	k			
b) The constant flow of material for energy in and o	out of cell prevent the cell f	rom reaching equilibrium			
c) Living state and metabolism are synonyms					
d) All are correct					
211. Pick out the wrong statement					
a) Amino acids are substituted methanes	b) Glycerol is a trihydr	oxy propone			
c) Lysine is a neutral amino acid	d) Lecithin is a phosph	olipid			
212. Each active sites in enzyme is bounded by how	many amino acids?				
a) 20 b) Infinite	c) 3	d) None of these			
213. Select the wrong statement					
a) Proteins are heteropolymers made of amino	acids				
b) Ribozymes are nucleic acids with catalytic po					

- c) Nucleic acids serve as genetic material
- d) Collagen is the most abundant protein in the whole of the biosphere and Rubisco is the most abundant proteins in animal world
- 214. The simple polyhydroxy ketone molecule containing 3-7 carbons is a
 - a) Disaccharide
- b) Monosaccharide
- c) Polysaccharide
- d) dipeptide

- 215. Primary structure of proteins is due to the presence of
 - a) Peptide bond
- b) Covalent bond
- c) Disulphide bond
- d) Ionic bonds

216. Identify the zwitterionic form in the given reversible reaction

$$\begin{array}{c}
R\\H_3^+N-CH-COOH \Longrightarrow\\A\\R\\R_3^-N-CH-COO^- \Longrightarrow H_2N-CH-COO\\B\\C
\end{array}$$

Choose the correct option

- a) A is the zwitterionic form
- b) C is the zwitterionic form
- c) B is the zwitterionic form
- d) None of the above
- 217. Removal of amino group from an amino acid is known as
 - a) Deamination
- b) Excretion
- c) Amination
- d) Egestion
- 218. The tightly bound non-proteinaceous organic compound in enzyme, is
 - a) Coenzyme
- b) Prosthetic group
- c) Cofactor
- d) Apoenzyme

- 219. Why living state cannot afford to reach equilibrium?
 - a) Due to insufficiency of biomolecules
- b) To remain active all the time

c) To save the energy

- d) None of the above
- 220. Chemical compounds that have molecular weights less than one thousand dalton are usually referred to as
 - a) Biomolecules
- b) Micromolecules
- c) Macromolecules
- d) Both (a) and (b)

- 221. Find out the wrongly matched pair.
 - a) Primary metabolite Ribose

b) Secondary metabolic - Anthocyanin

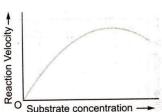
c) Protein - Insulin

- d) Cellulose Heteropolymer
- 222. The bond present between two carbohydrate molecules is
 - a) Amide
- b) Hydrogen
- c) Glycosidic
- d) phosphodiester

223. Name the given amino acids

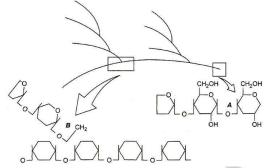
- a) Glutamic acid, tyrosine and cysteine, respectively
- b) Tyrocine, cysteine and glutamic acid, respectively
- c) Cysteine, tyrosine and glutamic acid, respectively
- d) Cysteine, glutamic acid and tyrosine, respectively
- 224. Enzyme having different molecular arrangement but similar functions is
 - a) Isoenzyme
- b) Holoenzyme
- c) Apoenzyme
- d) Coenzyme
- 225. The chemical reactions which liberate energy by enzymatic oxidation of food stuffs to $\rm CO_2$ and $\rm H_2O$, in the tissues are referred to as the
 - a) Energy metabolism
 - b) Respiratory metabolism
 - c) None of these

- d) Both (a) and (b)
- 226. The given graph shows the effect of substrate concentration on the rate of reaction of the enzyme



green gram-phosphatase. What does the graph indicate? Concentration

- a) The rate of enzyme reaction is directly proportional to the substrate concentration
- b) Presence of an enzyme inhibitor in the reaction mixture
- c) Formation of an enzyme-substrate complex
- d) At higher substrate concentration, the pH increase
- 227. Identify A and B bonds in the following diagrammatic representation of a portion of glycogen



Choose the correct option

- a) $A = 1 6\alpha$ -glycosidic bonds, $B = 1 4\alpha$ -glycosidic bonds
- b) $A = 1 1\alpha$ -glycosidic bonds, $B = 1 1\alpha$ -glycosidic bonds
- c) $A = 1 4\alpha$ -glycosidic bonds, $B = 1 4\alpha$ -glycosidic bonds
- d) $A = 1 4\alpha$ -glycosidic bonds, B = 1 6, α -glycosidic bonds
- 228. Which is an organic compound found in most cells?
 - a) Glucose
- b) Water
- c) Sodium chloride
- d) Oxygen
- 229. Select the correct which represents the homopolysaccharides made up of glucose monomers
 - a) Sucrose, lactose, maltose
 - b) Chitin, glycogen, starch
 - c) Starch, inulin, peptidoglycan
 - d) Starch, glycogen, cellulose
- 230. A high fever is dangerous to humans because
 - a) Proteins are used up quickly

b) Fats are oxidised

c) Enzymes are denatured

d) BMR is lowered

- 231. All enzymes are basically
 - a) Carbohydrates
- b) Steroids
- c) Proteins
- d) Lipoproteins

232. In a DNA, 'A' base pairs with ...by... H bonds.

Chooses the correct option for the blanks A and B

- a) T, three
- b) C, four
- c) T, two
- d) G, two

- 233. is a heteropolymer
 - a) Starch
- b) Glycogen
- c) Chitin
- d) Cellulose

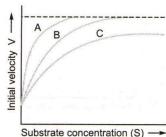
- 234. Those nucleic acids which behave like enzymes are known as
 - a) Ribozymes
- b) Pepzymes
- c) Both (a) and (b)
- d) Ribose
- 235. How many of the twenty two amino acids are essential for children?
 - a) 6

b) 8

c) 10

- d) 7
- 236. The figure given below shows three velocity substrate concentration curves for an enzyme

reaction. What do the curves A, B and C depict respectively?



- a) A-normal enzyme reaction, B-competitive inhibition, C-non-competitive inhibition
- b) A-enzyme with an allosteric modulator added, B-normal enzyme activity, C-competitive inhibition
- c) A-enzyme with an allosteric stimulator, B-competitive inhibitor added, C- normal enzyme reaction
- d) A- normal enzyme reaction, B-non-competitive inhibitor added, C- allosteric inhibitor added
- 237. Raffinose is a
 - a) Monosaccharides
- b) Disaccharides
- c) Trisaccharides
- d) Polysaccharides

- 238. Example of a typical homopolysaccharide is
 - a) Lignin
- b) Suberin
- c) Inulin
- d) Starch

- 239. The aleurone layer in maize grain is specially rich in
 - a) Lipids
- b) Auxins
- c) Proteins
- d) Starch

240. Given below is the structural formula of



- a) Sucrose
- b) Ribose
- c) Glucose
- d) Deoxyribose
- 241. Ribozymes are molecules that function as biocatalysts in modern cells
 - a) DNA

b) RNA

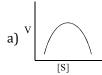
c) Both DNA and RNA

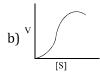
- d) None of these
- 242. Types of amino acids found in proteins are
 - a) 2

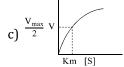
b) 19

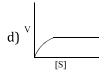
c) 20

- d) 23
- 243. Select the correct graph which shows the relationship between the rate of an enzymatic activity and substrate concentration









- 244. The effectiveness of an enzyme is affected least by
 - a) Temperature

- b) Concentration of the substrate
- c) Original activation energy of the system
- d) Concentration of the enzyme
- 245. Fluidity of bio-membranes can be shown by
 - a) Electron microscope

b) Tissue culture

c) Phase-contrast microscope

- d) Fluorescence microscope
- 246. A mathematical explanation for enzyme action on substrate was formulated by
 - a) Leonor Michaelis and Maud Menten
- b) Hans Gaffron

c) Melvin Calvin

d) Vant Krebs

- 247. Insulin is a polymer of
 - a) Fructose
- b) Glucose
- c) Sucrose
- d) Xylose

24	48. What is the approximate percentage of proteins in	the cell contents?	
	a) 12% b) 10%	c) 15%	d) 20%
24	49. How does radiations inactivates enzymes?		
	a) By destroying tertiary structure	b) By destroying primar	ry structure
	c) Both (a) and (b)	d) None of the above	
25	50. The fastest acting enzyme, in the biological kin	gdom, is	
	a) Lipase	b) Amylase	
	c) Peptidase	d) Carbonic anhydrase	e
25	51. The most important form of energy currency in livi	ng organisms is the bond ϵ	energy in the chemical called
	a) Adenosine Triphosphate (ATP)		
	b) Adenosine Diphosphate (ADP)		
	c) Phosphate (P)		
0.5	d) None of the above		
25	52. An example of competitive inhibition of an enz		
	a) Succinic dehydrogenase by malonic acid	b) Cytochrome oxidas	• •
	c) Hexokinase by glucose-6-phosphate	d) Carbonic anhydras	e by carbon dioxide
25	53. The amino acids are acidic, basic and neutral based	on the number of	
	a) Amino groups and hydrogen		
	b) Amino and carboxyl groups		
	c) Hydrogen and carboxyl group		
25	d) Carboxyl groups	adium ahlavida ia	
۷.	54. The type of bond involved in the formation of s a) Ester bond b) Peptide bond		d) Correlant hand
2.5		c) Ionic bond	d) Covalent bond
23	55. Allosteric modulation is due to inhibition actio		- Li
	a) Competitive inhibition	b) Substrate concentrate	
2.5	c) Products of reaction	d) Enzyme concentrat	cion
25	56. Cholesterol is considered as a crucial molecule in a	nimais because it is	
	a) Necessary for survivalb) Energy source		
	c) Helps in hydrolysis of glycogen		
	d) Source of many vertebrate hormones and other	sternids	
2.5	57. Select the correct option that identifies the nature of		r correctly
	Apoenzyme Co-factor	or apooney mo and oo race	
	a) Protein Non-protein	b) Non-protein Prote	ein
	c) Protein Protein	•	orotein
25	58. The double helical model of the DNA was prop	osed by Watson and Cric	ck based on what data
	produced by Wilkins and Franklin?		
	a) Hybridization	b) DNA sequencing	
	c) Southern blotting	d) X-ray diffraction	
25	59. Arrange the steps of catalytic action of an enzy	•	the correct option.
	I. The enzyme releases the products of the re		-
	substrate.	<i>,</i>	
	II. The active site of enzyme is in close proxim	ity of the substrate and l	breaks of chemical bonds
	of the substrate.	y Shadhald alla l	
	III. The binding of substrate induces the enzym	ne to alter its shane fittin	g more tightly around the
	substrate.		6

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IV. The substrate binds to the active site of the enzyme fitting into the active site.

_		1	_					•	
G	וכ	us	E	a	u	ca	Iti	0	n

				Opius Luucutioi			
	a) IV, III, II, I	b) III, II, I, IV	c) IV, II, I, III	d) II, I, IV, III			
260.	How many carbon atoms	generally take part in the f	ormulation of monosacchai	rides?			
	a) 5 to 10	b) 1 to 5	c) 5 to 15	d) 3 to 7			
261.	Enzymes catalysts differ f	rom inorganic catalysts in	which way?				
			weight in comparision to tl	hat of inorganic catalysts			
	b) Inorganic catalysts can	work efficiently at temper	ature but enzymes catalyst	cannot (except few			
	enzymes)	, ,		` -			
	• •	work efficiently at high pr	essure but enzyme catalyst	cannot			
	d) Both (b) and (c)	7 0 1	, , ,				
262.	, , , , , ,	which shows the effect of te	emperature on the velocity	of a typical enzymatic			
	reaction						
		1 _					
	77		V	V /			
	a) V	b) ^v /	c) V /	d) V			
			/				
	Temp.	Temp.	Temp.	Temp.			
263.	Malonate inhibits succinat	te dehydrogenase, is an exa	•				
	a) Allosteric inhibition		b) Negative feedback				
	c) Competitive inhibition		d) Non-competitive inhibit	ition			
264.	Which disaccharide has	different linkage?					
	a) Maltose	b) Starch	c) Sucrose	d) Lactose			
265.	Which one of the follow	ing is not a fibrillar prot	ein?				
	a) Elastin	b) Collagen	c) Myosin	d) Albumin			
266.	The rate of physical or che						
	a) The amount of reactant						
	b) The amount of product formed per unit time						
	-	sed during bond formation	per unit time				
	d) All of the above	TOLLIC EDILL	'ATION				
267.		e removal of groups from s	substrates by mechanism o	ther than hydrolysis,			
	addition of groups to doub	- -	J	<i>y</i> ,			
	a) Lyases	b) Ligases	c) Hydrolases	d) Dehydrogenases			
268.	Which of the following i		-,,	,, 8			
	a) NAD	b) NADP	c) FAD	d) ATP			
269		•	s opposite to that of other s	*			
207	opposite direction is calle	=	s opposite to that of other s	trana when read from			
	a) Satellite DNA	b) Palindromic DNA	c) Repetitious DNA	d) Non-coding DNA			
270	•	•	tein part to form a functi	,			
270.	· -	combines with hon-pro	tem part to form a functi	oliai elizyille, is kilowii			
	as	1) ** 1) A	D.D. d.d.			
	a) Coenzyme	b) Holoenzyme	c) Apoenzyme	d) Prosthetic group			
271.	Which of the following sta						
		ertain viruses called ribovi	rus				
	II. RNA of riboviruses may be single stranded						
		may also be present in ribo					
	a) All are correct	b) Only I	c) All are incorrect	d) Only II			
272.	Lactose is composed of	following components					
	a) Glucose and fructose		b) Glucose and glucose				
	c) Glucose, fructose and	galactose	d) Glucose and galactos	e			
273. Holoenzyme is a/an							
	a) Non-protein and apo	enzyme	b) Protein and apoenzy	me			
		-					

- c) Enzyme protein and coenzyme
- d) Enzyme, non-protein and coenzyme
- 274. One feature common to all the compounds found in the acid soluble pool is
 - a) They have molecular weights ranging from 18 to around 800 daltons (Da) approx
 - b) They have molecular weights ranging from 18 to around 80 daltons (Da) approx
 - c) They have molecular weights ranging from 18 to around 800 approx
 - d) None of the above
- 275. Which of the following statements are correct?
 - a) Living steady state has a self regulatory mechanism called homeostasis
 - c) Metabolism is the release and gain of energy
- b) Energy flow and energy transformation of living system follows law of thermodynamics
- d) All of the above



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