

Virtual University of Pakistan

Federal Government University



PAST SOLVED PAPERS AND
MCQs / GRAND QUIZ/ MID AND
FINAL TERM



MSC .ZOOLOGY 2ND SEMESTER

BIO202-Biochemistry-I

Biochemistry

A 3D illustration of a DNA double helix structure, with the two strands colored in light blue and pink. Several colorful sticks (green, yellow, orange, and pink) are shown passing through the center of the DNA structure, representing various biochemical pathways or molecules.

MUHAMMAD IMRAN

BIO-202 Current Important MCQS (Final Term)

1. Reversible inhibitors binds through _____ **Non Covalent bond**
2. DNA disruption occurs in laboratory at _____ **pH, Heated above 80°C or Salt concentration**
3. Archidonic acids is formed by _____ **Linoleic acid**
4. Co enzymes are formed when proteins bind _____ **Metallic , organic compound NAD etc**
5. Chief components of bee wax is _____ **myricyl palmitate**
6. Bile is synthesized by _____ and stored in _____ **- liver-Gallbladder**
7. Eukaryotic ribosomes have 2 sub units _____ **larger 60s and smaller 40s**
8. Kw of water at 25°C is _____ **10^{-14}**
9. Michaelis-Menten kinetics is the exception for _____ **regulatory enzymes**
10. Optimum pH of pepsin is _____ **pH 2**
11. phosphorylation of sugar result in _____ **D-glucose-6-phosphate**
12. No of Amino Acids often occur in β turns _____ **2**
13. Which doesnot occurs in α -Helices _____ **Glycine**
14. Side chain in sterols is at _____ **C17**
15. DNA Helix two strand of DNA hold together by _____ **Hydrogen Bonding**
16. pKa value of Alanine _____ **2.32**
17. Purine includes _____ **(Adenine and guanine)**
18. Thymine and uracil are different by one _____ group **(Methyl group)**
19. Triacylglycerols are composed of three fatty acids and joined with one glycerol by _____ **Ester linkage**
20. Which of the following is a Halogens _____ **chlorine, bromine and iodine**
21. HDL contain _____ % Protein **50%**
22. About _____ % of CO₂ is carried in blood as bicarbonates _____ **80-85%**
23. No of carbons in Palmitic Acid _____ **16C**
24. **(RNA)—the "working copies" of the (DNA)** _____ -
25. The difference between the energy levels of the ground state and the transition state is the **activation energy,**
26. Aromatic Amino-Acids are _____ **Phenylalanine, Tyrosine and Tryptophan**

27. carbohydrates and lipids forms _____ glycosphingolipids
28. Polyunsaturated Fatty Acids (PUFAs) contains ____ no of double bonds (More than one)
29. Alpha shows the which structure of proteins Secondary structure
30. The conjugated double bonds of purine and pyrimidine derivatives absorb ultraviolet light.
31. The formula of slope is $Slope = \frac{K_m}{V_{max} \cdot app}$
32. At pH 12 predominant glycine is _____ $H_2N-CH_2-COO^-$
33. Simple triglycerides Fatty acids connected to glycerol are of the same type • e.g., tripalmitin.
34. Platelet aggregation is the culminating step in the cardiovascular diseases due to atherosclerosis
35. the aldehyde reduction product of glucose is the molecule sorbitol
36. glycerol is converted to glycerol 3 phosphate _____ by enzyme dehydrogenase
37. In DNA cytosine is 18% then adenine would be _____ 32%
38. Which of the following is levulose _____ Fructose
39. One letter symbol of glycine is _____ G
40. Most proteins can be denatured by heat, which has complex effects on the weak interactions in a protein hydrogen bonds
41. Pyrimidine include in both DNA and RNA _____: • Cytosine (C)
42. Both DNA and RNA contain the same _____ Purine bases
43. Table sugar is ... Sucrose
44. pI of glycine is ... 5.97
45. pI of alanine is 5.7
46. Glutamate pI is 3.22
47. pI of histidine 7.59
48. Histidine has 3 Dissociable Hydrogen
49. 1 torr = 1mmHg
50. carbamates account for about 15% of the CO₂ in venous blood
51. one gram of Glucono delta-lactone yields roughly the same amount of metabolic energy as one gram of sugar

52. Amino sugar is formed by removal of OH at C-2 of the parent monosachharide is replaced with an amino group.
53. pK_3 of histidine is 9.2
54. Sunflower shaped Osazone Maltose
55. The symbol of tyrosine is Y
56. P_{50} is approximately 26.6mm Hg for hemoglobin
57. at 5' of DNA there is a free Phosphate group
58. Triple bond is present between Guanine and Cytosine
59. DNA sugars are linked to (N-1 of a pyrimidine or N-9 of a purine)
60. Major part of chylomicrons triacylglycerol 90%
61. Hb has a hybrid sigmoid, binding curve for O_2
62. Phosphatidylcholine is formed from (phosphatidic acid+Choline)
63. Blood group Antigen present in all common blood types H
64. The Lineweaver-Burk plot is diagnostic for competitive inhibition
65. enzymes catalyze condensation reactions joining two molecules by forming • C-O, C-S, C-N and C-C bonds Ligase
66. Trans form of melic acid is : fumaric acid
67. Fruit suger is : fructose
68. Saminal fluid is rich in : lactose
69. Simplest amino acid : glysine
70. In glycine R group is : H
71. Enthalpy denoted by: H
72. Negative charge on DNA is due to phosphate group
73. Iodine number of olive oil is: 79-88
74. VLDL composed of: TAG
75. Saturated lipids increase: LDL
76. pK_a of glysine: 2.34

MCQ Midterm BIO 202

Q

Glucose residues in amylose are linked by _____.

α (1,4) linkage β (1,4)

linkage

α (1,6) linkage

None of these

Q

The number of carbon atoms in lysine is _____.

4

6

8

10

Q

If the carbonyl group is present at the end of the monosaccharide then it is called _____.

Acid anhydride

Aldose

Ketose

None of these

Q

The number of stereoisomers for a molecule containing only one chiral carbon is _____.

16

2

4

8

Q

Seminal fluid is rich in _____.

Fructose

Lactose

Xylose

Arabinose

Q

Which of the following glycosidic linkage exists between two glucose units of maltose?

alpha 1,4

beta 1,4

alpha 1,6

alpha 1,4 and alpha 1,6

Q

Amino sugar is formed by the replacement of the hydroxyl group at ----- of the parent monosaccharide with amino group.

C-1

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C-2

C-3

C-6

Q

Which one of the following is a structural homopolysaccharide?

Cellulose

Starch

Glycogen

All of these

Q

Which one of the following amino acids is not specified by three letter codon?

Serine

Proline

Selenocysteine

Methionine

Q:

Acid dissociation constants are designated as _____.

PKa

K

Pa

None of these

Q

The pI of glutamate is _____.

1.2

5.6

3.22

6.7

Q

Which of the following amino acid is negatively charged at physiological pH?

Aspartate

Lysine

Alanine

Proline

Q

Which of the following refers to particularly stable arrangements of amino acid residues giving rise to recurring structural patterns?

Primary structure

Secondary structure

Tertiary structure

Quaternary structure

Q

Keratin is present in _____.

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Hair

Nail

Hoof

All of these

Q

Which of the following amino acid is involved in the hydrophobic interactions in the tertiary structure of protein?

Phenylalanine

Cysteine

Glycine

None of these

Q

The free energy of a protein molecule is influenced by _____.

Hydrophobicity

hydrogen bonds

electrostatic interactions

All of these

Q

Which of the following diseases is caused by protein misfolding?

Alzheimer's disease

Huntington's disease

Parkinson's disease

All of these

Q

Iron is a _____.

non-metal

metalloid

transition metal

halogen

Q

Myoglobin can bind _____ molecules of oxygen.

One

Two

Three

Four

Q

The partial pressure of oxygen (pO_2) in lungs is about _____.

30 mmHg

50 mmHg

100 mmHg

200 mmHg

Q

In sickle cell anemia, Glutamate is replaced with _____.

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Arginine
Alanine
Methionine
Valine

Q
Oxy hemoglobin dissociation curve describe the relationship of -----

Available Oxygen

Amount of carbon dioxide carried by hemoglobin

Fibrinogen

Oxy-hemoglobin curve stability

Q
Which one of the following is made up of two molecules of glucose?

Maltose

Starch

Cellulose

Amylose

Q
Which bond exists between the carbonyl group and oxygen of a hydroxyl group in ring structure of glucose?

Ionic

Covalent

hydrophobic interaction

both ionic and covalent

Q
In Benedict test, the formation of cuprous oxide is indicated by the formation of _____.

blue ppt

silver mirror

red ppt

none of these

Q
Glucose 6 Phosphate is formed by the addition of phosphate group to C6 of glucose by _____ linkage.

Ether

Ester

Ionic

none of these

Q
E. coli convert lactose of milk to lactic acid by action of _____.

Beta galactosidase

Amyloglucosidase

Alpha amylase

Maltase

Q

At any pH above pI, glycine has a net _____ charge and will move towards the _____.

negative, anode

negative, cathode

positive, anode

positive, cathode

Q

Which of the following amino acids contain two COOH groups?

Alanine

Glutamate

Glycine

Valine

Q

Which of the following amino acid is positively charged at physiological pH?

Lysine

Aspartate

Tyrosine

Alanine

Q

Peptide bond is _____ linkage between two amino acids.

Ester

Amide

Ether

None of these

Q

Which of the following shows the greatest tendency to form α helices in most experimental model systems?

Glycine

Alanine

Proline

Serine

Q

Immunoglobulin G (IgG) consists of _____.

Two heavy chains and two light chains

Four heavy chains

Four light chains

None of these

Q

The free energy of a protein molecule is influenced by _____.

Hydrophobicity

hydrogen bonds

electrostatic interactions

All of these

Q

Proteins are denatured by _____.

Temperature

pH

organic solvents

temperature, pH, organic solvents

Q

About _____ of amino acid residues in the myoglobin are found in alpha helices.

98%

78%

27%

Q

Hemoglobin is found exclusively in _____.

white blood cells

red blood cells

platelets

platelets and white blood cells

Q

The partial pressure of oxygen (pO₂) in lungs is about _____.

30 mmHg

50 mmHg

100 mmHg

200 mmHg

Q

In sickle cell anemia, Glutamate is replaced with _____.

Alanine

Methionine

Valine

VU Medical Zone

BIO 202 Quiz no 2 Fall 2020

BIO202:Quiz no. 3

Time: 00:00 sec(s)
Quiz Start Time: 12:27 AM, 23 February 2021

Question # 1 of 10 (Start time: 12:27:26 AM, 23 February 2021)

Total Marks: 1

The DNA oligonucleotide abbreviated pATCGAC:

Select the correct option

<input type="radio"/>	has seven phosphate groups.	
<input checked="" type="radio"/>	has a hydroxyl at its 3' end.	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	has a phosphate on its 3' end.	
<input type="radio"/>	has an A at its 3' end.	

Click to Save Answer & Move to Next Question



BIO202:Quiz no. 3

Time: 00:00 sec(s)
Quiz Start Time: 12:27 AM, 23 February 2021

Question # 2 of 10 (Start time: 12:29:52 AM, 23 February 2021)

Total Marks: 1

In living cells, nucleotides and their derivatives can serve as:

Select the correct option

<input type="radio"/>	carriers of metabolic energy.	
<input type="radio"/>	enzyme cofactors.	
<input type="radio"/>	intracellular signals.	
<input checked="" type="radio"/>	all of the above	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question



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BIO202:Quiz no. 3

Quiz Start Time: 12:27 AM, 23 February 2021

Question # 3 of 10 (Start time: 12:31:21 AM, 23 February 2021)

Total Marks: 1

S-adenosylmethionine is agroup donor

Select the correct option

<input checked="" type="radio"/>	Methyl	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Phosphate	
<input type="radio"/>	Adenosine	
<input type="radio"/>	Sulfate	

Click to Save Answer & Move to Next Question

13 Hours remaining

Quiz - Google Chr...

12:31 AM 2/23/2021

BIO202:Quiz no. 3

Quiz Start Time: 12:27 AM, 23 February 2021

Question # 4 of 10 (Start time: 12:32:01 AM, 23 February 2021)

Total Marks: 1

Which one is example of coenzymes

Select the correct option

<input type="radio"/>	FAD	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	NAD+	
<input type="radio"/>	NADP+	
<input checked="" type="radio"/>	All	

Click to Save Answer & Move to Next Question

13 Hours remaining

Quiz - Google Chr...

12:32 AM 2/23/2021

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BIO202:Quiz no. 3

Quiz Start Time: 12:27 AM, 23 February 2021

Question # 5 of 10 (Start time: 12:32:32 AM, 23 February 2021)

Total Marks: 1

ATP is a

Select the correct option

<input type="radio"/>	nucleoside	
<input checked="" type="radio"/>	nucleotide	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	vitamin	
<input type="radio"/>	nucleic acid	

Click to Save Answer & Move to Next Question

13 Hours remaining

Quiz - Google Chr...

12:32 AM 2/23/2021

BIO202:Quiz no. 3

Quiz Start Time: 12:27 AM, 23 February 2021

Question # 6 of 10 (Start time: 12:32:45 AM, 23 February 2021)

Total Marks: 1

There are classes of histones

Select the correct option

<input type="radio"/>	3	
<input checked="" type="radio"/>	5	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	7	
<input type="radio"/>	9	

Click to Save Answer & Move to Next Question

2 Hours and 5 Mi...

Quiz - Google Chr...

12:33 AM 2/23/2021

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VU Medical Zone

BIO202:Quiz no. 3

sec(s)
Quiz Start Time: 12:27 AM, 23 February 2021

Question # 7 of 10 (Start time: 12:33:58 AM, 23 February 2021)

Total Marks: 1

single-stranded DNA has a----- relative absorbance at 260nm wavelength than does double-stranded DNA.

Select the correct option

<input type="radio"/>	lower	
<input checked="" type="radio"/>	higher	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	equal	
<input type="radio"/>	none	



Click to Save Answer & Move to Next Question



BIO202:Quiz no. 3

sec(s)
Quiz Start Time: 12:27 AM, 23 February 2021

Question # 8 of 10 (Start time: 12:35:24 AM, 23 February 2021)

Total Marks: 1

Separation of the two strands of the double helix when ----- bonds between the paired bases are disrupted.

Select the correct option

<input type="radio"/>	phosphodiester	
<input checked="" type="radio"/>	hydrogen	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	glycosilic bond	
<input type="radio"/>	none of the above	

Click to Save Answer & Move to Next Question



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BIO202:Quiz no. 3

Quiz Start Time: 12:27 AM, 23 February 2021

Question # 9 of 10 (Start time: 12:35:56 AM, 23 February 2021)

Total Marks: 1

Find the correct statement about phosphodiester linkage between adjacent nucleotides in nucleic acids

Select the correct option

<input type="radio"/>	3'-phosphate of one nucleotide joins the 3'-hydroxyl of the next nucleotide	
<input type="radio"/>	3'-phosphate of one nucleotide joins the 5'-hydroxyl of the next nucleotide	
<input type="radio"/>	5'-phosphate of one nucleotide joins the 5'-hydroxyl of the next nucleotide	
<input checked="" type="radio"/>	5'-phosphate of one nucleotide joins the 3'-hydroxyl of the next nucleotide	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com



Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Windows, 30 Minutes remain..., VLC, Edge, and Quiz - Google Chr... The system clock shows 12:37 AM on 2/23/2021.

BIO202:Quiz no. 3

Quiz Start Time: 12:27 AM, 23 February 2021

Question # 10 of 10 (Start time: 12:37:36 AM, 23 February 2021)

Total Marks: 1

According to Chargaff's Rules
which one is not correct

Select the correct option

<input type="radio"/>	adenine equals the amount of thymine.	
<input type="radio"/>	guanine equals the amount of cytosine	
<input type="radio"/>	total amount of purines equals the total amount of pyrimidines	
<input checked="" type="radio"/>	guanine equals the amount of thymine	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Windows, 21 Minutes remain..., VLC, Edge, and Quiz - Google Chr... The system clock shows 12:38 AM on 2/23/2021.

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BIO202:Quiz no. 3

Quiz Start Time: 12:45 AM, 23 February 2021

Question # 1 of 10 (Start time: 12:45:43 AM, 23 February 2021)

Total Marks: 1

higher GC base pairs increases T_m , because , with three hydrogen bonds, require-----heat energy to dissociate than AT base pairs.

Select the correct option

<input type="radio"/>	less	
<input checked="" type="radio"/>	more	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	equal	
<input type="radio"/>	none of the above	

Click to Save Answer & Move to Next Question



BIO202:Quiz no. 3

Quiz Start Time: 12:45 AM, 23 February 2021

Question # 2 of 10 (Start time: 12:46:25 AM, 23 February 2021)

Total Marks: 1

Chromatin is composed of

Select the correct option

<input checked="" type="radio"/>	nucleic acids and protein	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	nucleic acids only	
<input type="radio"/>	proteins only	
<input type="radio"/>	none of these	

Click to Save Answer & Move to Next Question



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BIO202-Quiz no. 3

Quiz Start Time: 12:45 AM, 23 February 2021

Question # 3 of 10 (Start time: 12:46:56 AM, 23 February 2021)

Total Marks: 1

Which one is example of coenzymes

Select the correct option

<input type="radio"/>	FAD	
<input type="radio"/>	NAD+	
<input type="radio"/>	NADP+	
<input checked="" type="radio"/>	All	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Windows, 35 Minutes remaining, and Quiz - Google Chrome. System clock shows 12:47 AM, 2/23/2021.

BIO202-Quiz no. 3

Quiz Start Time: 12:45 AM, 23 February 2021

Question # 4 of 10 (Start time: 12:47:06 AM, 23 February 2021)

Total Marks: 1

The sugar molecule present in nucleotide is

Select the correct option

<input type="radio"/>	Triose	
<input type="radio"/>	Tetrose	
<input checked="" type="radio"/>	Pentose	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Hexose	

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Windows, 35 Minutes remaining, and Quiz - Google Chrome. System clock shows 12:47 AM, 2/23/2021.

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BIO202:Quiz no. 3

Quiz Start Time: 12:45 AM, 23 February 2021

Question # 5 of 10 (Start time: 12:47:18 AM, 23 February 2021)

Total Marks: 1

Eukaryotic DNA is associated with tightly bound basic -----, called histones.

Select the correct option

<input type="radio"/>	lipid	
<input checked="" type="radio"/>	proteins	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	carbohydrates	
<input type="radio"/>	nucleic acid	

Click to Save Answer & Move to Next Question



BIO202:Quiz no. 3

Quiz Start Time: 12:45 AM, 23 February 2021

Question # 6 of 10 (Start time: 12:47:48 AM, 23 February 2021)

Total Marks: 1

When DNA is heated, the temperature at which ----- of the helical structure is lost is defined as the melting temperature.

Select the correct option

<input checked="" type="radio"/>	one half	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	two half	
<input type="radio"/>	three half	
<input type="radio"/>	complete	

Click to Save Answer & Move to Next Question



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BIO202:Quiz no. 3

Quiz Start Time: 12:45 AM, 23 February 2021

Question # 7 of 10 (Start time: 12:48:15 AM, 23 February 2021)

Total Marks: 1

Z-DNA have a

Select the correct option

<input checked="" type="radio"/>	Zig-Zag apperance	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	
<input type="radio"/>	Double helical nature		
<input type="radio"/>	uracil base		
<input type="radio"/>	single stranded nature		

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Start, 25 Minutes remaining, Play, Edge, and Quiz - Google Chr... The system clock shows 12:48 AM on 2/23/2021.

BIO202:Quiz no. 3

Quiz Start Time: 12:45 AM, 23 February 2021

Question # 8 of 10 (Start time: 12:49:04 AM, 23 February 2021)

Total Marks: 1

Separation of the two strands of the double helix when ----- bonds between the paired bases are disrupted.

Select the correct option

<input type="radio"/>	phosphodiester	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	
<input checked="" type="radio"/>	hydrogen		
<input type="radio"/>	glycosilic bond		
<input type="radio"/>	none of the above		

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Start, 25 Minutes remaining, Play, Edge, and Quiz - Google Chr... The system clock shows 12:49 AM on 2/23/2021.

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VU Medical Zone

BIO202:Quiz no. 3

Quiz Start Time: 12:45 AM, 23 February 2021

Question # 9 of 10 (Start time: 12:49:15 AM, 23 February 2021)

Total Marks: 1

RNA duplexes are ----- stable than DNA duplexes.

Select the correct option

<input checked="" type="radio"/>	more	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	/
<input type="radio"/>	less		/
<input type="radio"/>	equal		/
<input type="radio"/>	none of the above		/

Click to Save Answer & Move to Next Question

Quiz - Google Chr...

12:49 AM
2/23/2021

BIO202:Quiz no. 3

Quiz Start Time: 12:45 AM, 23 February 2021

Question # 10 of 10 (Start time: 12:49:41 AM, 23 February 2021)

Total Marks: 1

The -----strand is called Template strand while

Select the correct option

<input type="radio"/>	5'-3'	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	/
<input checked="" type="radio"/>	3'-5'		/
<input type="radio"/>	3'-3'		/
<input type="radio"/>	5'-5'		/

Click to Save Answer & Move to Next Question

Quiz - Google Chr...

12:50 AM
2/23/2021

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VU Medical Zone

BIO202:Quiz no. 3

Quiz Start Time: 12:54 AM, 23 February 2021

Question # 1 of 10 (Start time: 12:54:07 AM, 23 February 2021)

Total Marks: 1

DNA replication is

Select the correct option

<input type="radio"/>	Conservative	
<input type="radio"/>	Non-conservative	
<input checked="" type="radio"/>	Semi-conservative	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	None	

Click to Save Answer & Move to Next Question



BIO202:Quiz no. 3

Quiz Start Time: 12:54 AM, 23 February 2021

Question # 2 of 10 (Start time: 12:55:38 AM, 23 February 2021)

Total Marks: 1

Nucleotides are composed of

<input type="radio"/>	A nitrogenous base (purine or pyrimidine)	
<input type="radio"/>	A pentose monosaccharide	
<input type="radio"/>	One, two, or three phosphate groups	
<input checked="" type="radio"/>	All	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question



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VU Medical Zone

BIO202:Quiz no. 3

Quiz Start Time: 12:54 AM, 23 February 2021

Question # 3 of 10 (Start time: 12:55:55 AM, 23 February 2021)

Total Marks: 1

Eukaryotic DNA is associated with tightly bound basic -----, called histones.

Select the correct option

<input type="radio"/>	lipid	
<input checked="" type="radio"/>	proteins	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	carbohydrates	
<input type="radio"/>	nucleic acid	

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Internet Explorer, Google Chrome, and other applications. The system clock shows 12:55 AM on 2/23/2021.

BIO202:Quiz no. 3

Quiz Start Time: 12:54 AM, 23 February 2021

Question # 4 of 10 (Start time: 12:56:04 AM, 23 February 2021)

Total Marks: 1

According to Chargaff's Rules
which one is not correct

Select the correct option

<input type="radio"/>	adenine equals the amount of thymine.	
<input type="radio"/>	guanine equals the amount of cytosine	
<input type="radio"/>	total amount of purines equals the total amount of pyrimidines	
<input checked="" type="radio"/>	guanine equals the amount of thymine	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Internet Explorer, Google Chrome, and other applications. The system clock shows 12:56 AM on 2/23/2021.

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BIO202:Quiz no. 3

Quiz Start Time: 12:54 AM, 23 February 2021

Question # 5 of 10 (Start time: 12:56:14 AM, 23 February 2021)

Total Marks: 1

Nucleosomes can be packed more tightly to form a polynucleosome also called a nucleofilament or a -----nm fiber.

Select the correct option

<input type="radio"/>	10	
<input checked="" type="radio"/>	30	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	50	
<input type="radio"/>	100	

Click to Save Answer & Move to Next Question



BIO202:Quiz no. 3

Quiz Start Time: 12:54 AM, 23 February 2021

Question # 6 of 10 (Start time: 12:56:39 AM, 23 February 2021)

Total Marks: 1

Nucleoside contains

Select the correct option

<input checked="" type="radio"/>	base-sugar	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	base-phosphate	
<input type="radio"/>	base-sugar-phosphate	
<input type="radio"/>	sugar-phosphate	

Click to Save Answer & Move to Next Question



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BIO202:Quiz no. 3

Quiz Start Time: 12:54 AM, 23 February 2021

Question # 7 of 10 (Start time: 12:56:55 AM, 23 February 2021)

Total Marks: 1

The difference between thymine and uracil is:

Select the correct option

<input type="radio"/>	one methylene group on the pyrimidine ring	
<input checked="" type="radio"/>	one methyl group on the pyrimidine ring.	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	one hydroxyl group on the ribose ring.	
<input type="radio"/>	one amine group on the pyrimidine ring.	

Click to Save Answer & Move to Next Question

Taskbar showing icons for Windows, File Explorer, Media Player, Edge, and Google Chrome. The active window is 'Quiz - Google Chr...'. The system clock shows 12:58 AM, 2/23/2021.

BIO202:Quiz no. 3

Quiz Start Time: 12:54 AM, 23 February 2021

Question # 8 of 10 (Start time: 12:58:52 AM, 23 February 2021)

Total Marks: 1

In a double-stranded nucleic acid, cytosine typically base-pairs with:

Select the correct option

<input type="radio"/>	Adenosine.	
<input checked="" type="radio"/>	Guanine.	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Inosine.	
<input type="radio"/>	Thymine.	

Click to Save Answer & Move to Next Question

Taskbar showing icons for Windows, File Explorer, Media Player, Edge, and Google Chrome. The active window is 'Quiz - Google Chr...'. The system clock shows 12:59 AM, 2/23/2021.

Effort By Amaan Khan

VU Medical Zone

BIO202:Quiz no. 3

sec(s)
Quiz Start Time: 12:54 AM, 23 February 2021

Question # 9 of 10 (Start time: 12:59:13 AM, 23 February 2021)

Total Marks: 1

When DNA is heated, the temperature at which of the helical structure is lost is defined as the melting temperature.

Select the correct option

<input checked="" type="radio"/>	one half	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	
<input type="radio"/>	two half		
<input type="radio"/>	three half		
<input type="radio"/>	complete		

Click to Save Answer & Move to Next Question



BIO202:Quiz no. 3

sec(s)
Quiz Start Time: 12:54 AM, 23 February 2021

Question # 10 of 10 (Start time: 12:59:24 AM, 23 February 2021)

Total Marks: 1

RNA duplexes are stable than DNA duplexes.

Select the correct option

<input checked="" type="radio"/>	more	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	
<input type="radio"/>	less		
<input type="radio"/>	equal		
<input type="radio"/>	none of the above		

Click to Save Answer & Move to Next Question



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BIO202:Quiz no. 3

Quiz Start Time: 01:30 AM, 23 February 2021

Question # 1 of 10 (Start time: 01:30:41 AM, 23 February 2021)

Total Marks: 1

Disruption of DNA can occur in the laboratory with alteration in

Select the correct option

<input type="radio"/>	PH	
<input type="radio"/>	salt concentration	
<input type="radio"/>	heated above 80°C	
<input checked="" type="radio"/>	All of the above	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question

The image shows a Windows taskbar with several icons: a clock showing 1:30 AM, a taskbar with icons for a folder, a play button, and a Google Chrome browser window titled 'Quiz - Google Chr...'. The system tray on the right shows network, volume, and power icons, along with the date 2/23/2021.

BIO202:Quiz no. 3

Quiz Start Time: 01:30 AM, 23 February 2021

Question # 2 of 10 (Start time: 01:31:26 AM, 23 February 2021)

Total Marks: 1

Any regular, stable structure taken up by some or all of the nucleotides in a nucleic acid can be referred to as

Select the correct option

<input type="radio"/>	primary structure	
<input checked="" type="radio"/>	secondary structure	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	tertiary structure	
<input type="radio"/>	all of above	

Click to Save Answer & Move to Next Question

The image shows a Windows taskbar with several icons: a clock showing 1:31 AM, a taskbar with icons for a folder, a play button, and a Google Chrome browser window titled 'Quiz - Google Chr...'. The system tray on the right shows network, volume, and power icons, along with the date 2/23/2021.

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BIO202:Quiz no. 3

Quiz Start Time: 01:30 AM, 23 February 2021

Question # 3 of 10 (Start time: 01:31:58 AM, 23 February 2021)

Total Marks: 1

Nucleic acids are a polymer of nucleotide monomeric units. Each nucleotide consists of

Select the correct option

<input type="radio"/>	base--sugar--OH	
<input type="radio"/>	sugar--phosphate	
<input checked="" type="radio"/>	base--sugar--phosphate	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	sugar--OH	

Click to Save Answer & Move to Next Question

29 Minutes remain... Quiz - Google Chr... 1:32 AM 2/23/2021

BIO202:Quiz no. 3

Quiz Start Time: 01:30 AM, 23 February 2021

Question # 4 of 10 (Start time: 01:32:15 AM, 23 February 2021)

Total Marks: 1

The DNA wrapped around the nucleosome core is continuous and joins one nucleosome core to the next -the linker DNA this 50 bp DNA is complexed with the fifth type of histone, -----

Select the correct option

<input checked="" type="radio"/>	H1	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	H2A, H2B,	
<input type="radio"/>	H3,	
<input type="radio"/>	H4	

Click to Save Answer & Move to Next Question

29 Minutes remain... Quiz - Google Chr... 1:32 AM 2/23/2021

Effort By Amaan Khan

VU Medical Zone

BIO202:Quiz no. 3

sec(s)
Quiz Start Time: 01:30 AM, 23 February 2021

Question # 5 of 10 (Start time: 01:32:48 AM, 23 February 2021)

Total Marks: 1

The phosphodiester bonds that link adjacent nucleotides in both RNA and DNA:

Select the correct option

<input type="radio"/>	always link A with T and G with C.	
<input type="radio"/>	are susceptible to alkaline hydrolysis.	
<input checked="" type="radio"/>	form between the planar rings of adjacent bases.	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	join the 3' hydroxyl of one nucleotide to the 5' hydroxyl of the next.	

Click to Save Answer & Move to Next Question

35 Minutes remai... Quiz - Google Chr... 1:34 AM 2/23/2021

BIO202:Quiz no. 3

sec(s)
Quiz Start Time: 01:30 AM, 23 February 2021

Question # 6 of 10 (Start time: 01:34:35 AM, 23 February 2021)

Total Marks: 1

DNA that is not copied during the synthesis of mRNA is also called as

Select the correct option

<input checked="" type="radio"/>	Non Template	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	coding strand	
<input type="radio"/>	mRNA-like strand	
<input type="radio"/>	all of above	

Click to Save Answer & Move to Next Question

35 Minutes remai... Quiz - Google Chr... 1:35 AM 2/23/2021

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BIO202:Quiz no. 3

Time Left: 00:00:00
Quiz Start Time: 01:30 AM, 23 February 2021

Question # 7 of 10 (Start time: 01:35:37 AM, 23 February 2021)

Total Marks: 1

higher GC base pairs increases T_m , because , with three hydrogen bonds, require-----heat energy to dissociate than AT base pairs.

Select the correct option

<input type="radio"/>	less	
<input checked="" type="radio"/>	more	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	equal	
<input type="radio"/>	none of the above	

Click to Save Answer & Move to Next Question

Windows taskbar showing 35 Minutes remaining, icons for applications, and system clock showing 1:35 AM on 2/23/2021.

BIO202:Quiz no. 3

Quiz Start Time: 01:30 AM, 23 February 2021

Question # 8 of 10 (Start time: 01:35:58 AM, 23 February 2021)

Total Marks: 1

The sugar molecule present in nucleotide is

Select the correct option

<input type="radio"/>	Triose	
<input type="radio"/>	Tetrose	
<input checked="" type="radio"/>	Pentose	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Hexose	

Click to Save Answer & Move to Next Question

Windows taskbar showing 35 Minutes remaining, icons for applications, and system clock showing 1:36 AM on 2/23/2021.

Effort By Amaan Khan

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BIO202:Quiz no. 3

Quiz Start Time: 01:30 AM, 23 February 2021

Question # 9 of 10 (Start time: 01:36:17 AM, 23 February 2021)

Total Marks: 1

ATP is a

Select the correct option

<input type="radio"/>	nucleoside	
<input checked="" type="radio"/>	nucleotide	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	vitamin	
<input type="radio"/>	nucleic acid	

Click to Save Answer & Move to Next Question



BIO202:Quiz no. 3

Quiz Start Time: 01:30 AM, 23 February 2021

Question # 10 of 10 (Start time: 01:36:33 AM, 23 February 2021)

Total Marks: 1

The Tm of DNA is influenced by

Select the correct option

<input type="radio"/>	higher the content of GC base pairs	
<input type="radio"/>	base composition of the DNA	
<input type="radio"/>	salt concentration of the solution	
<input checked="" type="radio"/>	all of above	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question



Effort By Amaan Khan

VU Medical Zone

BIO202:Quiz no. 3

Quiz Start Time: 01:49 AM, 23 February 2021

Question # 1 of 10 (Start time: 01:49:27 AM, 23 February 2021)

Total Marks: 1

Purine base found in RNA is

Select the correct option

<input type="radio"/>	Cytosine	
<input type="radio"/>	Thymine	
<input checked="" type="radio"/>	Guanine	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Uracil	

Click to Save Answer & Move to Next Question

BIO 202 Quiz no 2....pdf

Show all

BIO202:Quiz no. 3

Quiz Start Time: 01:49 AM, 23 February 2021

Question # 2 of 10 (Start time: 01:50:15 AM, 23 February 2021)

Total Marks: 1

Compounds that generate nitrous acid (such as nitrites, nitrates, and nitrosamines) change DNA molecules by:

Select the correct option

<input checked="" type="radio"/>	Breakage of phosphodiester bonds.	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Deamination of bases.	
<input type="radio"/>	Depurination.	
<input type="radio"/>	Formation of thymine dimers	

Click to Save Answer & Move to Next Question

BIO 202 Quiz no 2....pdf

Show all

Effort By Amaan Khan

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BIO202:Quiz no. 3

sec(s)
Quiz Start Time: 01:49 AM, 23 February 2021

Question # 3 of 10 (Start time: 01:51:18 AM, 23 February 2021)

Total Marks: 1

Under appropriate conditions DNA will form a hybrid with a complementary -----

Select the correct option

<input type="radio"/>	DNA	
<input type="radio"/>	RNA	
<input checked="" type="radio"/>	Both	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	None	

Click to Save Answer & Move to Next Question

BIO 202 Quiz no 2....pdf

Show all

BIO202:Quiz no. 3

sec(s)
Quiz Start Time: 01:49 AM, 23 February 2021

Question # 4 of 10 (Start time: 01:51:51 AM, 23 February 2021)

Total Marks: 1

DNA model was presented by Watson and Crick in -----

Select the correct option

<input type="radio"/>	1951	
<input checked="" type="radio"/>	1953	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	1955	
<input type="radio"/>	1957	

Click to Save Answer & Move to Next Question

BIO 202 Quiz no 2....pdf

Show all

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BIO202:Quiz no. 3

Quiz Start Time: 01:49 AM, 23 February 2021

Question # 5 of 10 (Start time: 01:52:09 AM, 23 February 2021)

Total Marks: 1

Around structural core of the nucleosome, a segment of the DNA double helix is wound nearly twice-approximately -----

Select the correct option

<input type="radio"/>	100bp	
<input type="radio"/>	120bp	
<input checked="" type="radio"/>	140bp	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	160bp	

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Internet Explorer, Google Chrome, and other applications. The system clock shows 1:52 AM on 2/23/2021.

BIO202:Quiz no. 3

Quiz Start Time: 01:49 AM, 23 February 2021

Question # 6 of 10 (Start time: 01:52:38 AM, 23 February 2021)

Total Marks: 1

In living cells, nucleotides and their derivatives can serve as:

Select the correct option

<input type="radio"/>	carriers of metabolic energy.	
<input type="radio"/>	enzyme cofactors.	
<input type="radio"/>	intracellular signals.	
<input checked="" type="radio"/>	all of the above	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Internet Explorer, Google Chrome, and other applications. The system clock shows 1:52 AM on 2/23/2021.

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BIO202:Quiz no. 3

Quiz Start Time: 01:49 AM, 23 February 2021

Question # 7 of 10 (Start time: 01:52:54 AM, 23 February 2021)

Total Marks: 1

Adenosine 3'-phosphate-5'-phosphosulfate is the -----donor

Select the correct option

<input checked="" type="radio"/>	Sulfate	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	/
<input type="radio"/>	Phosphate		/
<input type="radio"/>	Adenosine		/
<input type="radio"/>	None		/

Click to Save Answer & Move to Next Question



BIO202:Quiz no. 3

Quiz Start Time: 01:49 AM, 23 February 2021

Question # 8 of 10 (Start time: 01:53:29 AM, 23 February 2021)

Total Marks: 1

Nucleotides are composed of

Select the correct option

<input type="radio"/>	A nitrogenous base (purine or pyrimidine)	/	
<input type="radio"/>	A pentose monosaccharide	/	
<input type="radio"/>	One, two, or three phosphate groups	/	
<input checked="" type="radio"/>	All	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	/

Click to Save Answer & Move to Next Question



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BIO202:Quiz no. 3

sec(s)
Quiz Start Time: 01:49 AM, 23 February 2021

Question # 9 of 10 (Start time: 01:53:58 AM, 23 February 2021)

Total Marks: 1

A short length of DNA molecule has 80 thymine and 80 guanine bases. The total number of nucleotide in the DNA fragment is

Select the correct option

<input type="radio"/>	160	
<input type="radio"/>	40	
<input checked="" type="radio"/>	320	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	640	

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for 3 Hours and 30 M..., Quiz - Google Chr..., and system clock 1:54 AM 2/23/2021.

BIO202:Quiz no. 3

sec(s)
Quiz Start Time: 01:49 AM, 23 February 2021

Question # 10 of 10 (Start time: 01:54:36 AM, 23 February 2021)

Total Marks: 1

Which of the following is a palindromic sequence?

Select the correct option

<input type="radio"/>	AGGTCC TCCAGG	
<input type="radio"/>	CCTTCC GCAAGG	
<input type="radio"/>	GAATCC CTTAGG	
<input checked="" type="radio"/>	GGATCC CCTAGG	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for 3 Hours and 30 M..., Quiz - Google Chr..., and system clock 1:56 AM 2/23/2021.

Effort By Amaan Khan

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BIO 202 GRAND QUIZ FALL 2020

BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 1 of 30 (Start time: 12:21:30 AM, 27 December 2020)

Total Marks: 1

The most frequently used systematic nomenclature names the fatty acid after the hydrocarbon with -oic being substituted for the final -----

Select the correct option

<input checked="" type="radio"/>	e	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	/
<input type="radio"/>	d		/
<input type="radio"/>	a		/
<input type="radio"/>	b		/

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 2 of 30 (Start time: 12:22:18 AM, 27 December 2020)

Total Marks: 1

The amide group of _____ serves as a site of attachment for oligosaccharide chains in glycoproteins.

Select the correct option

<input type="radio"/>	Serine		/
<input type="radio"/>	Threonine		/
<input type="radio"/>	Asparagine		/
<input checked="" type="radio"/>	All of these	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	/

Click to Save Answer & Move to Next Question



EFFORT BY AMAAN KHAN

WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 3 of 30 (Start time: 12:22:54 AM, 27 December 2020)

Total Marks: 1

The ion found in the haem group is what-----

Select the correct option

<input type="radio"/>	Mg ²⁺	
<input type="radio"/>	O ²⁻	
<input checked="" type="radio"/>	Fe ²⁺	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Fe ³⁺	

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 4 of 30 (Start time: 12:24:49 AM, 27 December 2020)

Total Marks: 1

Hydrogenation of fatty acids leads to hardening of natural oils and formation of margarine because:

Select the correct option

<input type="radio"/>	trans double bonds are converted to cis double bonds	
<input type="radio"/>	cis double bonds are converted to trans double bonds	
<input checked="" type="radio"/>	double bonds are converted to single bonds	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	single bonds are converted to double bonds	

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 5 of 30 (Start time: 12:26:37 AM, 27 December 2020)

Total Marks: 1

Fatty acids are classified on The Basis Of Hydrocarbon Chain Length include

Select the correct option

<input type="radio"/>	Medium Chain Fatty Acids(6-12 C)	
<input type="radio"/>	Short Chain Fatty Acids (2-4 C)	
<input type="radio"/>	Long Chain Fatty Acids (14-18 C)	
<input checked="" type="radio"/>	All of above	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 6 of 30 (Start time: 12:27:33 AM, 27 December 2020)

Total Marks: 1

Which of the following form of lipids are also referred as neutral lipids?

Select the correct option

<input type="radio"/>	Triacylglycerol	
<input type="radio"/>	Phospholipid	
<input type="radio"/>	Steroid	
<input checked="" type="radio"/>	Wax	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 7 of 30 (Start time: 12:28:08 AM, 27 December 2020)

Total Marks: 1

The following salt is water insoluble

Select the correct option

<input type="radio"/>	K	
<input type="radio"/>	Na	
<input checked="" type="radio"/>	Mg	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Zn	

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 8 of 30 (Start time: 12:28:57 AM, 27 December 2020)

Total Marks: 1

Which statement about amino acids at physiological pH is true?

Select the correct option

<input checked="" type="radio"/>	The carboxyl group is dissociated (-COO^-) and the amino group is protonated (NH_3^+).	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Only the carboxyl group is dissociated (-COO^-).	
<input type="radio"/>	Only the amino group is protonated (NH_3^+).	
<input type="radio"/>	There is no charge on either the carboxyl group or the amino group.	

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 9 of 30 (Start time: 12:29:50 AM, 27 December 2020)

Total Marks: 1

The sigmoidal binding curve of Hemoglobin for oxygen is possible due to ----- structure of hemoglobin.

Select the correct option

<input checked="" type="radio"/>	multi-subunit	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	single-subunit	

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 10 of 30 (Start time: 12:30:22 AM, 27 December 2020)

Total Marks: 1

The formation of furfural products and their condensation with organic phenols to give characteristic coloured compounds forms the basis of biochemical tests used for the detection of carbohydrates. An example of such a test is _____.

Select the correct option

<input checked="" type="radio"/>	Molisch's test	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Benedict's test	
<input type="radio"/>	Ninhydrin test	
<input type="radio"/>	Grease spot test	

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 11 of 30 (Start time: 12:31:19 AM, 27 December 2020)

Total Marks: 1

One degradation product of Haemoglobin is the brown bile pigment bilirubin. This step occur in

Select the correct option

<input type="radio"/>	bile	
<input checked="" type="radio"/>	Liver	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Kidney	
<input type="radio"/>	Heart	

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 12 of 30 (Start time: 12:32:31 AM, 27 December 2020)

Total Marks: 1

The quaternary structure of human hemoglobin is best described as a

Select the correct option

<input type="radio"/>	dimer of two myoglobin dimers.	
<input checked="" type="radio"/>	tetramer of identical subunits	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	tetramer of four different subunits	
<input type="radio"/>	tetramer of two different subunits	

Click to Save Answer & Move to Next Question



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BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 13 of 30 (Start time: 12:34:31 AM, 27 December 2020)

Total Marks: 1

Degree of Saturation (Y) (%) of Oxygen binding sites on all myoglobin or hemoglobin molecules can be any value between _____.

Select the correct option

<input type="radio"/>	0 and 1	
<input type="radio"/>	-1 and +1	
<input checked="" type="radio"/>	0 and 100	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	None of the above	

[Click to Save Answer & Move to Next Question](#)



BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 14 of 30 (Start time: 12:36:04 AM, 27 December 2020)

Total Marks: 1

Immunoglobulin are ----- proteins and have -----and ----- components

Select the correct option

<input type="radio"/>	Catalytic, Variable, Constant	
<input checked="" type="radio"/>	Protective, Variable, Constant	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Protective, Non-Variable, Constant	
<input type="radio"/>	Enzymatic, Variable, Constant	

[Click to Save Answer & Move to Next Question](#)



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 15 of 30 (Start time: 12:38:04 AM, 27 December 2020)

Total Marks: 1

The oxygen binding site in hemoglobin and myoglobin?

Select the correct option

<input checked="" type="radio"/>	heme group	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	
<input type="radio"/>	globin group		
<input type="radio"/>	Ca+		
<input type="radio"/>	Mg+		

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 16 of 30 (Start time: 12:39:02 AM, 27 December 2020)

Total Marks: 1

Once a heme group is oxidized, what molecule is produced?

Select the correct option

<input checked="" type="radio"/>	methemoglobin	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	
<input type="radio"/>	hemoglobin		
<input type="radio"/>	myoglobin		
<input type="radio"/>	hemoglobin c		

Click to Save Answer & Move to Next Question



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BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 17 of 30 (Start time: 12:40:53 AM, 27 December 2020)

Total Marks: 1

_____ is an example of a contractile protein.

Select the correct option

<input checked="" type="radio"/>	Myosin	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Amylase	
<input type="radio"/>	Hemoglobin	
<input type="radio"/>	Fibrinogen	

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 18 of 30 (Start time: 12:41:34 AM, 27 December 2020)

Total Marks: 1

The R group is Hydrogen atom in _____.

Select the correct option

<input type="radio"/>	Lysine	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Alanine	
<input checked="" type="radio"/>	Glycine	
<input type="radio"/>	Proline	

Click to Save Answer & Move to Next Question



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BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 19 of 30 (Start time: 12:43:08 AM, 27 December 2020)

Total Marks: 1

The three dimensional arrangement of two or more polypeptides is called

Select the correct option

<input type="radio"/>	Primary structure	
<input type="radio"/>	Secondary structure	
<input type="radio"/>	Tertiary structure	
<input checked="" type="radio"/>	Quaternary structure	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 20 of 30 (Start time: 12:44:03 AM, 27 December 2020)

Total Marks: 1

What are the main things responsible for causing the Bohr Shift?

Select the correct option

<input checked="" type="radio"/>	increased carbon dioxide partial pressure	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	increased oxygen requirements	
<input type="radio"/>	increased H ⁺ ions	
<input type="radio"/>	carbon monoxide's high affinity for haemoglobin	

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 21 of 30 (Start time: 12:45:13 AM, 27 December 2020)

Total Marks: 1

Which type of membrane lipid contains an acidic oligosaccharide?

Select the correct option

<input type="radio"/>	globoside	
<input type="radio"/>	phosphatidylinositol	
<input type="radio"/>	cerebroside	
<input checked="" type="radio"/>	ganglioside	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

[Click to Save Answer & Move to Next Question](#)



BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 22 of 30 (Start time: 12:46:51 AM, 27 December 2020)

Total Marks: 1

The name of Unsaturated acids with double bonds end in -----

Select the correct option

<input checked="" type="radio"/>	enoic	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	anoic	
<input type="radio"/>	dnoic	
<input type="radio"/>	none of above	

[Click to Save Answer & Move to Next Question](#)



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 23 of 30 (Start time: 12:47:44 AM, 27 December 2020)

Total Marks: 1

The carbon of the terminal methyl group is called the ----- regardless of the chain length.

Select the correct option

<input type="radio"/>	Alpha	
<input type="radio"/>	Beta	
<input checked="" type="radio"/>	Gamma	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	none	

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 24 of 30 (Start time: 12:48:28 AM, 27 December 2020)

Total Marks: 1

Haemoglobin, the red pigment in blood, consists of a protein component and the iron complex of derivative

Select the correct option

<input checked="" type="radio"/>	porphyrin	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Iron	
<input type="radio"/>	Protein	
<input type="radio"/>	Benzene ring	

Click to Save Answer & Move to Next Question



EFFORT BY AMAAN KHAN

WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 25 of 30 (Start time: 12:49:28 AM, 27 December 2020)

Total Marks: 1

OxyHemoglobin Dissociation Curve Bohr effect decreased affinity of haemoglobin for ----- gas caused by an increase of carbon dioxide pH etc.

Select the correct option

<input checked="" type="radio"/>	Oxygen	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Carbon dioxide	
<input type="radio"/>	Ozone	
<input type="radio"/>	Nitrogen	

[Click to Save Answer & Move to Next Question](#)



BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 26 of 30 (Start time: 12:51:01 AM, 27 December 2020)

Total Marks: 1

The process by which oxygen enters the blood from the alveoli is

Select the correct option

<input type="radio"/>	facilitated diffusion	
<input checked="" type="radio"/>	diffusion	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	active transport	
<input type="radio"/>	none	

[Click to Save Answer & Move to Next Question](#)



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 27 of 30 (Start time: 12:52:40 AM, 27 December 2020)

Total Marks: 1

The pK2 value for glycine is _____.

Select the correct option

<input checked="" type="radio"/>	2.34	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	5.97	
<input type="radio"/>	9.60	
<input type="radio"/>	7.65	

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 28 of 30 (Start time: 12:53:52 AM, 27 December 2020)

Total Marks: 1

Current evidence suggests that diet rich in omega 3 fatty acids are beneficial particularly for

Select the correct option

<input type="radio"/>	cardiovascular disease	
<input type="radio"/>	Alzheimer's disease	
<input type="radio"/>	arthritis	
<input checked="" type="radio"/>	All of given	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question



EFFORT BY AMAAN KHAN

WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 29 of 30 (Start time: 12:55:17 AM, 27 December 2020)

Total Marks: 1

During tense stage of haemoglobin the binding sites are -----

Select the correct option

<input checked="" type="radio"/>	hindered	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	opened	
<input type="radio"/>	closed	
<input type="radio"/>	replaced	

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 12:21 AM, 27 December 2020

Question # 30 of 30 (Start time: 12:56:11 AM, 27 December 2020)

Total Marks: 1

Fatty acids produce alkyl alcohols by _____ of carboxylic group.

Select the correct option

<input type="radio"/>	Esterification	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Oxidation	
<input checked="" type="radio"/>	Reduction	
<input type="radio"/>	Methylation	

Click to Save Answer & Move to Next Question



WU Medical Zone

BC190204300: HIDYAT ULLAH

Time Left 81 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 03:07 AM, 27 December 2020

Question # 1 of 30 (Start time: 03:07:32 AM, 27 December 2020)

Total Marks: 1

The following salt is water soluble

Select the correct option

<input type="radio"/>	Ca
<input type="radio"/>	Mg
<input type="radio"/>	Zn
<input checked="" type="radio"/>	K

Click to Save Answer & Move to Next Question



BC190204300: HIDYAT ULLAH

Time Left 72 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 03:07 AM, 27 December 2020

Question # 2 of 30 (Start time: 03:08:01 AM, 27 December 2020)

Total Marks: 1

The partial pressure of oxygen needed to achieve half-saturation of the binding sites is called -----

Select the correct option

<input checked="" type="radio"/>	P50
<input type="radio"/>	P60
<input type="radio"/>	P70
<input type="radio"/>	none

Click to Save Answer & Move to Next Question



WU Medical Zone

BC190204300: HIDYAT ULLAH

Time Left 46 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 03:07 AM, 27 December 2020

Question # 3 of 30 (Start time: 03:08:34 AM, 27 December 2020)

Total Marks: 1

The number of dissociable hydrogen in histidine is _____.

Select the correct option

<input type="radio"/>	Zero
<input type="radio"/>	one
<input checked="" type="radio"/>	two
<input type="radio"/>	three

Click to Save Answer & Move to Next Question



BC190204300: HIDYAT ULLAH

Time Left 55 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 03:07 AM, 27 December 2020

Question # 6 of 30 (Start time: 03:10:22 AM, 27 December 2020)

Total Marks: 1

The example of natural porphyrins include -----

Select the correct option

<input type="radio"/>	Cytochrome C
<input type="radio"/>	Heamoglobin
<input type="radio"/>	Myoglobin
<input checked="" type="radio"/>	ALL options are correct

Click to Save Answer & Move to Next Question



WU Medical Zone

BC190204300: HIDYAT ULLAH

Time Left 70 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 03:07 AM, 27 December 2020

Question # 7 of 30 (Start time: 03:11:23 AM, 27 December 2020)

Total Marks: 1

Which would be a property of all the major types of lipids in this membrane?

Select the correct option

- | | |
|----------------------------------|--|
| <input type="radio"/> | They would be joined to each other through covalent bonds |
| <input type="radio"/> | They would be saponifiable in base and hydrolyzed in acid. |
| <input checked="" type="radio"/> | They would have polar heads and non-polar tails. |
| <input type="radio"/> | They would be composed of five-carbon units. |

Click to Save Answer & Move to Next Question



BC190204300: HIDYAT ULLAH

Time Left 75 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 03:07 AM, 27 December 2020

Question # 8 of 30 (Start time: 03:11:57 AM, 27 December 2020)

Total Marks: 1

Proteins may exist in the form of multi-subunits. An advantage of a multi-subunit structure is that the different subunits can have different activities and cooperate in a common function. This is best understood by the structure of the enzyme _____ which exists as a multi-protein complex.

Select the correct option

- | | |
|----------------------------------|------------------------|
| <input type="radio"/> | hemoglobin |
| <input checked="" type="radio"/> | ribozyme |
| <input type="radio"/> | pyruvate dehydrogenase |
| <input type="radio"/> | Ig A |

Click to Save Answer & Move to Next Question



WU Medical Zone

BC190204300: HIDYAT ULLAH

Time Left 73 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 03:07 AM, 27 December 2020

Question # 9 of 30 (Start time: 03:12:29 AM, 27 December 2020)

Total Marks: 1

What is the name of the molecule formed when oxygen binds to haemoglobin?

Select the correct option

<input checked="" type="radio"/>	Oxyhaemoglobin
<input type="radio"/>	Carbaminohaemoglobin
<input type="radio"/>	Oxyglobin
<input type="radio"/>	Oxygen-haemoglobin

Click to Save Answer & Move to Next Question



BC190204300: HIDYAT ULLAH

Time Left 77 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 03:07 AM, 27 December 2020

Question # 14 of 30 (Start time: 03:14:27 AM, 27 December 2020)

Total Marks: 1

All of the following are involved in stabilizing the three dimensional tertiary structure of proteins except:

Select the correct option

<input checked="" type="radio"/>	glycosidic bonds
<input type="radio"/>	hydrophobic interactions
<input type="radio"/>	disulphide bridges
<input type="radio"/>	hydrogen bonds

Click to Save Answer & Move to Next Question



WU Medical Zone

BC190204300: HIDYAT ULLAH

Time Left 68 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 03:07 AM, 27 December 2020

Question # 15 of 30 (Start time: 03:14:55 AM, 27 December 2020)

Total Marks: 1

Which of the following is found in brain tissue?

Select the correct option

<input type="radio"/>	D-alanine and D-glutamate	/
<input checked="" type="radio"/>	Free D-serine and D-aspartate	/
<input type="radio"/>	Free D-serine and D-alanine	/
<input type="radio"/>	Free D-serine and D-glutamate	/

Click to Save Answer & Move to Next Question



BC190204300: HIDYAT ULLAH

Time Left 70 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 03:07 AM, 27 December 2020

Question # 17 of 30 (Start time: 03:15:51 AM, 27 December 2020)

Total Marks: 1

The proximal histidine F8 of myoglobin binds directly to the ----- of heme group.

Select the correct option

<input checked="" type="radio"/>	iron	/
<input type="radio"/>	Magnesium	/
<input type="radio"/>	Zinc	/
<input type="radio"/>	Calcium	/

Click to Save Answer & Move to Next Question



WU Medical Zone

BC190204300: HIDYAT ULLAH

Time Left 71 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 03:07 AM, 27 December 2020

Question # 21 of 30 (Start time: 03:17:15 AM, 27 December 2020)

Total Marks: 1

The pKa value for acetic acid is _____.

Select the correct option

<input type="radio"/>	3.76
<input checked="" type="radio"/>	4.76
<input type="radio"/>	5.76
<input type="radio"/>	7.66

Click to Save Answer & Move to Next Question



BC190204300: HIDYAT ULLAH

Time Left 82 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 03:07 AM, 27 December 2020

Question # 23 of 30 (Start time: 03:18:08 AM, 27 December 2020)

Total Marks: 1

All kind of lipids are ____ in water.

Select the correct option

<input type="radio"/>	Miscible
<input type="radio"/>	Soluble
<input checked="" type="radio"/>	Insoluble
<input type="radio"/>	All of given

Click to Save Answer & Move to Next Question



WU Medical Zone

BC190204300: HIDYAT ULLAH

Time Left 80 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 03:07 AM, 27 December 2020

Question # 27 of 30 (Start time: 03:19:05 AM, 27 December 2020)

Total Marks: 1

The ----- bond formed by covalently joining of two amino acids through amide linkage

Select the correct option

<input checked="" type="radio"/>	Amide
<input type="radio"/>	Peptide
<input type="radio"/>	Sulphide
<input type="radio"/>	Carboxyl

Click to Save Answer & Move to Next Question



BC190204300: HIDYAT ULLAH

Time Left 81 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 03:07 AM, 27 December 2020

Question # 28 of 30 (Start time: 03:19:31 AM, 27 December 2020)

Total Marks: 1

The second degradation product of haemoglobin is green pigment biliverdin, the result of breakdown by oxidation occurs in -----

Select the correct option

<input checked="" type="radio"/>	liver
<input type="radio"/>	heart
<input type="radio"/>	kidney
<input type="radio"/>	spleen

Click to Save Answer & Move to Next Question



WU Medical Zone

BC190204300: HIDYAT ULLAH

Time Left 82 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 03:07 AM, 27 December 2020

Question # 29 of 30 (Start time: 03:19:53 AM, 27 December 2020)

Total Marks: 1

The ion found in the haem group is what-----

Select the correct option

<input type="radio"/>	Mg ²⁺
<input type="radio"/>	O ²⁻
<input checked="" type="radio"/>	Fe ²⁺
<input type="radio"/>	Fe ³⁺

Click to Save Answer & Move to Next Question



BC190204300: HIDYAT ULLAH

Time Left 62 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 03:07 AM, 27 December 2020

Question # 30 of 30 (Start time: 03:20:17 AM, 27 December 2020)

Total Marks: 1

Alpha helices are the most common secondary structure found in proteins. Nearly all _____ proteins contain alpha helices in their membrane spanning domains.

Select the correct option

<input checked="" type="radio"/>	trans membrane
<input type="radio"/>	protective
<input type="radio"/>	transport
<input type="radio"/>	globular

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 03:22 AM, 27 December 2020

Question # 3 of 30 (Start time: 03:23:02 AM, 27 December 2020)

Total Marks: 1

Which of the following statements about erythrocytes is correct?

Select the correct option

<input checked="" type="radio"/>	They lack a nucleus.	/
<input type="radio"/>	They clot blood.	/
<input type="radio"/>	They fight infection.	/
<input type="radio"/>	They are produced in the spleen.	/

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 03:22 AM, 27 December 2020

Question # 7 of 30 (Start time: 03:24:54 AM, 27 December 2020)

Total Marks: 1

Margarines are vegetable oils treated with partial hydrogenation to form semi solid -----

Select the correct option

<input checked="" type="radio"/>	Butter	/
<input type="radio"/>	Oil	/
<input type="radio"/>	Fat	/
<input type="radio"/>	Protein	/

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 03:22 AM, 27 December 2020

Question # 8 of 30 (Start time: 03:25:33 AM, 27 December 2020)

Total Marks: 1

The net effect of affinity of hemoglobin for the last oxygen bound is approximately ----- times greater than its affinity for the first oxygen bound

Select the correct option

<input checked="" type="radio"/>	300	/
<input type="radio"/>	302	/
<input type="radio"/>	301	/
<input type="radio"/>	356	/

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 03:22 AM, 27 December 2020

Question # 9 of 30 (Start time: 03:26:17 AM, 27 December 2020)

Total Marks: 1

Some proteins contain additional amino acids that arise by modification of an amino acid already present in a peptide i.e., after the protein has been synthesized. An example of such an amino acid is:

Select the correct option

<input type="radio"/>	lysine	/
<input checked="" type="radio"/>	5-hydroxylysine	/
<input type="radio"/>	peptidyl proline	/
<input type="radio"/>	glutamic acid	/

Answer Solved by Amaan Khan
Contact: 0305-4716616
Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 03:22 AM, 27 December 2020

Question # 11 of 30 (Start time: 03:28:10 AM, 27 December 2020)

Total Marks: 1

All of the following are true for amino acids EXCEPT:

Select the correct option

- | | | |
|----------------------------------|--|--|
| <input type="radio"/> | The genetic code specifies and codes for both standard and non-standard amino acids. | |
| <input checked="" type="radio"/> | The side chains of amino acids influence their solubility in water. | Answer Solved by Amaan Khan
Contact: 0305-4716616
Email: maniamaan2@gmail.com |
| <input type="radio"/> | The carbon atom present between the amino group and carboxyl group in the amino acid is known as a carbon. | |
| <input type="radio"/> | In the formation of a protein, amino acids are joined together by a linkage known as peptide bond. | |

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 03:22 AM, 27 December 2020

Question # 12 of 30 (Start time: 03:28:51 AM, 27 December 2020)

Total Marks: 1

In myoglobin and hemoglobin, heme is covalently linked with ----- amino acid (eighth residue of F helix)

Select the correct option

- | | | |
|----------------------------------|--------------|--|
| <input checked="" type="radio"/> | histidine F8 | |
| <input type="radio"/> | Alanine F8 | |
| <input type="radio"/> | Both | |
| <input type="radio"/> | None of them | |

Click to Save Answer & Move to Next Question



EFFORT BY AMAAN KHAN

WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 03:22 AM, 27 December 2020

Question # 13 of 30 (Start time: 03:29:50 AM, 27 December 2020)

Total Marks: 1

Identify the amino acids containing nonpolar, aliphatic R groups.

Select the correct option

<input type="radio"/>	Phenylalanine, tyrosine, and tryptophan
<input checked="" type="radio"/>	Glycine, alanine, leucine
<input type="radio"/>	Lysine, arginine, histidine
<input type="radio"/>	Serine, threonine, cysteine

Click to Save Answer & Move to Next Question



3:30 AM
27-Dec-20

WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 1 of 30 (Start time: 01:42:03 AM, 27 December 2020)

Total Marks: 1

The octet rule refers to the tendency of atoms to prefer to have electrons in the valence shell.

Select the correct option

<input checked="" type="radio"/>	8	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	/
<input type="radio"/>	9		/
<input type="radio"/>	10		/
<input type="radio"/>	11		/

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 2 of 30 (Start time: 01:42:30 AM, 27 December 2020)

Total Marks: 1

What are the components of a triglyceride molecule?

Select the correct option

<input checked="" type="radio"/>	One glycerol and three fatty acid	/
<input type="radio"/>	One glycerol and two fatty acid	/
<input type="radio"/>	One glycerol and one cholesterol	/
<input type="radio"/>	One glycerol and two cholesterol	/

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 3 of 30 (Start time: 01:42:45 AM, 27 December 2020)

Total Marks: 1

Unesterified fatty acids are transported in the circulation in association with -----

Select the correct option

<input checked="" type="radio"/>	Albumin	/
<input type="radio"/>	Gelatin	/
<input type="radio"/>	Casein	/
<input type="radio"/>	None of above	/

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 4 of 30 (Start time: 01:43:55 AM, 27 December 2020)

Total Marks: 1

The ----- change has no effect on the function of myoglobin.

Select the correct option

<input checked="" type="radio"/>	Conformational	/
<input type="radio"/>	Amino acid	/

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 5 of 30 (Start time: 01:44:21 AM, 27 December 2020)

Total Marks: 1

Fatty acids occur in the body mainly as ----- in natural fats and oils.

Select the correct option

<input type="radio"/>	Protein
<input type="radio"/>	Esters
<input checked="" type="radio"/>	Oils
<input type="radio"/>	Fatty acid

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 6 of 30 (Start time: 01:45:14 AM, 27 December 2020)

Total Marks: 1

Haemoglobin, the red pigment in blood, consists of a protein component and the iron complex of derivative

Select the correct option

<input checked="" type="radio"/>	porphyrin
<input type="radio"/>	Iron
<input type="radio"/>	Protein
<input type="radio"/>	Benzene ring

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 7 of 30 (Start time: 01:45:27 AM, 27 December 2020)

Total Marks: 1

Fats are the _____ of fatty acids and glycerol.

Select the correct option

<input checked="" type="radio"/>	Esters
<input type="radio"/>	Ether
<input type="radio"/>	Isomer
<input type="radio"/>	Tautomer

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 8 of 30 (Start time: 01:45:41 AM, 27 December 2020)

Total Marks: 1

During conformational change each successive addition of O₂ shifts the equilibrium further toward the ----- state, thus addition of oxygen in the lungs.

Select the correct option

<input checked="" type="radio"/>	Relaxed state
<input type="radio"/>	Tense state
<input type="radio"/>	relaxed or tense state
<input type="radio"/>	No change

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 9 of 30 (Start time: 01:46:26 AM, 27 December 2020)

Total Marks: 1

The family of polyunsaturated fatty acids (PUFAs) with a double bond between the third and fourth carbon from the methyl end of the chain are of special importance in human -----

Select the correct option

<input type="radio"/>	Mental health
<input checked="" type="radio"/>	Nutrition

Answer Solved by Amaan Khan
Contact: 0305-4716616
Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 10 of 30 (Start time: 01:46:57 AM, 27 December 2020)

Total Marks: 1

Approximately how many hemoglobin molecules are there in each red blood cell?

Select the correct option

<input type="radio"/>	30 million
<input checked="" type="radio"/>	300 million
<input type="radio"/>	50 million
<input type="radio"/>	5 million

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 11 of 30 (Start time: 01:47:42 AM, 27 December 2020)

Total Marks: 1

Hemoglobin must bind oxygen efficiently in the lungs, where the pO_2 is about ----- mmHg and release oxygen in the tissues, where pO_2 is about---- mmHg

Select the correct option

- | | | |
|----------------------------------|------------------|---|
| <input checked="" type="radio"/> | 100 and 35 to 40 | / |
| <input type="radio"/> | 50 and 35 to 40 | / |
| <input type="radio"/> | 60 and 35 to 40 | / |
| <input type="radio"/> | 40 and 35 to 40 | / |

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 12 of 30 (Start time: 01:48:24 AM, 27 December 2020)

Total Marks: 1

Fetal haemoglobin shifts the oxygen saturation curve in what direction?

Select the correct option

- | | | |
|----------------------------------|----------------|---|
| <input type="radio"/> | right and down | / |
| <input checked="" type="radio"/> | left and down | / |

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 13 of 30 (Start time: 01:49:45 AM, 27 December 2020)

Total Marks: 1

What happen to red blood cells if the haem group were removed from haemoglobin?

Select the correct option

- ☒ Red blood cells would not be able to bind oxygen.
- ☐ Red blood cells would not be able to reproduce.
- ☐ White blood cells would not be able to reproduce.
- ☐ Blood clot formation would be inhibited.

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 14 of 30 (Start time: 01:50:05 AM, 27 December 2020)

Total Marks: 1

In case of soap micelle the ----- hydrocarbon chain cluster in the inside and ----- carboxylate group lie on the surface

Select the correct option

- ☒ Non-polar, Polar
- ☐ Polar, Non-Polar

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 15 of 30 (Start time: 01:50:35 AM, 27 December 2020)

Total Marks: 1

Which of the following fatty acids would have the lowest critical micelle concentration -----

Select the correct option

<input checked="" type="radio"/>	C4-COOH	
<input type="radio"/>	C5-COOH	
<input type="radio"/>	C6-COOH	
<input type="radio"/>	C8-COOH	

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 16 of 30 (Start time: 01:51:09 AM, 27 December 2020)

Total Marks: 1

The melting point of fatty acids depends upon chain length and _____

Select the correct option

<input type="radio"/>	The shape of the fatty acids	
<input checked="" type="radio"/>	Degree of unsaturation	
<input type="radio"/>	The position of the double bond	
<input type="radio"/>	Charge on the carbon	

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 17 of 30 (Start time: 01:52:16 AM, 27 December 2020)

Total Marks: 1

The process which convert unsaturated fatty acid to saturated fatty acid -----

Select the correct option

<input checked="" type="radio"/>	Hydrogenation
<input type="radio"/>	Glycolysis
<input type="radio"/>	Proteolysis
<input type="radio"/>	Liquefaction

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 18 of 30 (Start time: 01:52:31 AM, 27 December 2020)

Total Marks: 1

Myoglobin is composed of a single polypeptide chain which has _____

Select the correct option

<input checked="" type="radio"/>	One O2 binding site
<input type="radio"/>	Two O2 binding sites
<input type="radio"/>	Three O2 binding sites
<input type="radio"/>	Four O2 binding sites

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 19 of 30 (Start time: 01:52:52 AM, 27 December 2020)

Total Marks: 1

The carbon of the terminal methyl group is called the ----- regardless of the chain length.

Select the correct option

<input type="radio"/>	Alpha	
<input type="radio"/>	Beta	
<input checked="" type="radio"/>	Gamma	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	none	

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 20 of 30 (Start time: 01:53:18 AM, 27 December 2020)

Total Marks: 1

Which is a characteristic of all the fatty acid components in this lipid?

Select the correct option

<input type="radio"/>	They all are hydrophilic because they contain oxygen.	
<input type="radio"/>	They all contain an unbranched carbon chain.	
<input type="radio"/>	They all contain unconjugated cis double bonds	
<input checked="" type="radio"/>	They all are joined to glycerol through an ester bond.	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 21 of 30 (Start time: 01:53:44 AM, 27 December 2020)

Total Marks: 1

Once a heme group is oxidized, what molecule is produced?

Select the correct option

<input checked="" type="radio"/>	methemoglobin	/
<input type="radio"/>	hemoglobin	/
<input type="radio"/>	myoglobin	/
<input type="radio"/>	hemoglobin c	/

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 22 of 30 (Start time: 01:53:59 AM, 27 December 2020)

Total Marks: 1

The two ends of the polypeptide chain are known as the ____ and ____ terminus.

Select the correct option

<input checked="" type="radio"/>	C, N	/
<input type="radio"/>	R, S	/
<input type="radio"/>	α , β	/
<input type="radio"/>	D, L	/

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 23 of 30 (Start time: 01:54:32 AM, 27 December 2020)

Total Marks: 1

Which characteristic does this lipid share with a wax?

Select the correct option

- | | | |
|----------------------------------|---|---|
| <input type="radio"/> | Both contain one or more carboxyl groups. | / |
| <input type="radio"/> | Both contain a polar head | / |
| <input checked="" type="radio"/> | Both contain three fatty acids. | / |
| <input type="radio"/> | Both contain one or more ester bonds | / |

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 24 of 30 (Start time: 01:55:43 AM, 27 December 2020)

Total Marks: 1

Motifs are also known as super secondary structures. An example of a motif found in proteins is the _____.

Select the correct option

- | | | |
|----------------------------------|----------------|---|
| <input checked="" type="radio"/> | β barrel | / |
| <input type="radio"/> | β sheet | / |
| <input type="radio"/> | β turns | / |
| <input type="radio"/> | α helix | / |

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 25 of 30 (Start time: 01:56:54 AM, 27 December 2020)

Total Marks: 1

The hydrolysis of starch by the enzyme 'amylase' produces maltose. In the human body, maltose is further hydrolyzed by the enzyme maltase (present in intestinal brush border) to produce _____.

Select the correct option

<input type="radio"/>	galactose	/
<input checked="" type="radio"/>	glucose	/
<input type="radio"/>	maltotrisoe	/
<input type="radio"/>	mannose	/

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 26 of 30 (Start time: 01:57:33 AM, 27 December 2020)

Total Marks: 1

All amino acids except _____ have a chiral carbon and have two possible isomers.

Select the correct option

<input type="radio"/>	lysine	/
<input type="radio"/>	glycine	/
<input type="radio"/>	glutamic acid	/
<input checked="" type="radio"/>	tryptophan	/

Answer Solved by Amaan Khan
Contact: 0305-4716616
Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 27 of 30 (Start time: 01:58:41 AM, 27 December 2020)

Total Marks: 1

Proteins present in cell membrane may function as _____ or transporters.

Select the correct option

<input checked="" type="radio"/>	receptors	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	/
<input type="radio"/>	hormones		/
<input type="radio"/>	immunoglobulins		/
<input type="radio"/>	storage proteins		/

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 28 of 30 (Start time: 01:59:36 AM, 27 December 2020)

Total Marks: 1

The quaternary structure of human hemoglobin is best described as a

Select the correct option

<input type="radio"/>	dimer of two myoglobin dimers.	/
<input checked="" type="radio"/>	tetramer of identical subunits	/
<input type="radio"/>	tetramer of four different subunits	/
<input type="radio"/>	tetramer of two different subunits	/

Click to Save Answer & Move to Next Question



EFFORT BY AMAAN KHAN

WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 29 of 30 (Start time: 01:59:51 AM, 27 December 2020)

Total Marks: 1

Aliphatic polar amino acids are ----- in nature

Select the correct option

- | | | |
|----------------------------------|----------------------------|---|
| <input checked="" type="radio"/> | Hydrophilic | / |
| <input type="radio"/> | Hydrophobic | / |
| <input type="radio"/> | Non-reactive | / |
| <input type="radio"/> | Aromatic ringed tryptophan | / |

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:42 AM, 27 December 2020

Question # 30 of 30 (Start time: 02:00:08 AM, 27 December 2020)

Total Marks: 1

The names of saturated fatty acids end in one of the following suffixes.

Select the correct option

- | | | |
|----------------------------------|---------|---|
| <input type="radio"/> | -enoic | / |
| <input type="radio"/> | -ol | / |
| <input type="radio"/> | -dehyde | / |
| <input checked="" type="radio"/> | -anoic | / |

Answer Solved by Amaan Khan
Contact: 0305-4716616
Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question



WU Medical Zone

MC200202050: MUNEEB HUSSAIN

Time Left 71 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 1 of 30 (Start time: 02:22:08 AM, 27 December 2020)

Total Marks: 1

The strenuous exercise lowers the pO₂ of muscle tissue to about ----- mm Hg hence permitting continued muscular activity

Select the correct option

<input checked="" type="radio"/>	5	
<input type="radio"/>	4	
<input type="radio"/>	3	
<input type="radio"/>	2	

Click to Save Answer & Move to Next Question



MC200202050: MUNEEB HUSSAIN

Time Left 74 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 2 of 30 (Start time: 02:23:09 AM, 27 December 2020)

Total Marks: 1

The surface of myoglobin is -----, important for interacting with polar aqueous environment of cytosol.

Select the correct option

<input checked="" type="radio"/>	polar	
<input type="radio"/>	non polar	
<input type="radio"/>	aqueous	
<input type="radio"/>	Hard	

Click to Save Answer & Move to Next Question



WU Medical Zone

MC200202050: MUNEEB HUSSAIN

Time Left 48 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 3 of 30 (Start time: 02:23:37 AM, 27 December 2020)

Total Marks: 1

Cholesterol is essential for normal membrane functions because it -----

Select the correct option

- ☐ Cannot be made by higher organisms, e.g. mammals.
- ☐ Spans the thickness of the bilayer.
- ☒ Keep membrane fluid
- ☐ Catalyzes lipid flip-flop in the bilayer

Click to Save Answer & Move to Next Question



MC200202050: MUNEEB HUSSAIN

Time Left 79 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 4 of 30 (Start time: 02:24:55 AM, 27 December 2020)

Total Marks: 1

Fatty acids are carboxylic acids in which length of _____ chains range from 4 to 36 carbons.

Select the correct option

- ☒ Hydrocarbon
- ☐ Polycarbon
- ☐ Monosaccharide
- ☐ Disaccharides

Click to Save Answer & Move to Next Question



WU Medical Zone

MC200202050: MUNEEB HUSSAIN

Time Left 71 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 5 of 30 (Start time: 02:25:20 AM, 27 December 2020)

Total Marks: 1

The positions of any _____ in fatty acids are specified relative to the carboxyl carbon by superscript numbers following Δ (delta).

Select the correct option

<input type="radio"/>	Carbon atom
<input type="radio"/>	Hydrogen atom
<input checked="" type="radio"/>	double bonds
<input type="radio"/>	R-group

Click to Save Answer & Move to Next Question



MC200202050: MUNEEB HUSSAIN

Time Left 37 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 6 of 30 (Start time: 02:25:56 AM, 27 December 2020)

Total Marks: 1

Proteins may exist in the form of multi-subunits. An advantage of a multi-subunit structure is that the different subunits can have different activities and cooperate in a common function. This is best understood by the structure of the enzyme _____ which exists as a multi-protein complex.

Select the correct option

<input checked="" type="radio"/>	hemoglobin
<input type="radio"/>	ribozyme
<input type="radio"/>	pyruvate dehydrogenase
<input type="radio"/>	Ig A

Click to Save Answer & Move to Next Question



WU Medical Zone

MC200202050: MUNEEB HUSSAIN

Time Left 81 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 7 of 30 (Start time: 02:27:16 AM, 27 December 2020)

Total Marks: 1

Myoglobin can bind to four Oxygen molecules because it contains 4 heme groups.

Select the correct option

<input type="radio"/>	True
<input checked="" type="radio"/>	False

Click to Save Answer & Move to Next Question



MC200202050: MUNEEB HUSSAIN

Time Left 17 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 8 of 30 (Start time: 02:27:38 AM, 27 December 2020)

Total Marks: 1

Folic acid aids:

Select the correct option

<input type="radio"/>	In maturation of red blood cells and destruction of RNA.
<input checked="" type="radio"/>	In maturation of red blood cells and is also required for RNA synthesis.
<input type="radio"/>	In maturation of red blood cells and destruction of DNA.
<input type="radio"/>	In maturation of red blood cells and is also required for DNA synthesis.

Click to Save Answer & Move to Next Question



WU Medical Zone

MC200202050: MUNEEB HUSSAIN

Time Left 81 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 9 of 30 (Start time: 02:29:27 AM, 27 December 2020)

Total Marks: 1

The net charge on alanine in acidic solution (pH less than 2) is _____.

Select the correct option

<input type="radio"/>	Negative
<input checked="" type="radio"/>	Positive
<input type="radio"/>	Neutral
<input type="radio"/>	First negative then becomes neutral

Click to Save Answer & Move to Next Question



MC200202050: MUNEEB HUSSAIN

Time Left 84 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 10 of 30 (Start time: 02:29:50 AM, 27 December 2020)

Total Marks: 1

The two ends of the polypeptide chain are known as the ____ and ____ terminus.

Select the correct option

<input checked="" type="radio"/>	C, N
<input type="radio"/>	R, S
<input type="radio"/>	α , β
<input type="radio"/>	D, L

Click to Save Answer & Move to Next Question



WU Medical Zone

MC200202050: MUNEEB HUSSAIN

Time Left 61 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 11 of 30 (Start time: 02:30:10 AM, 27 December 2020)

Total Marks: 1

The melting properties of fatty acids and lipid bilayers is due primarily to -----

Select the correct option

- ☐ hydrogen bonds.
- ☒ Vander Waals forces
- ☐ electrostatic interactions.
- ☐ covalent bonds.

Click to Save Answer & Move to Next Question



MC200202050: MUNEEB HUSSAIN

Time Left 50 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 12 of 30 (Start time: 02:30:59 AM, 27 December 2020)

Total Marks: 1

Micelles of fatty acids in water are organized such that the ___ face the solvent and the ___ are directed toward the interior.

Select the correct option

- ☒ Hydrophobic heads; hydrophobic tails
- ☐ hydrocarbon chains; carboxylic acid groups
- ☐ hydrophobic tails; hydrophilic heads
- ☐ carboxylic acid groups; hydrocarbon chains

Click to Save Answer & Move to Next Question



WU Medical Zone

MC200202050: MUNEEB HUSSAIN

Time Left 54 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 13 of 30 (Start time: 02:32:39 AM, 27 December 2020)

Total Marks: 1

Which of the following molecules is a typical fatty acid?

Select the correct option

- ☐ A molecule that has an even number of carbon atoms in a branched chain
- ☒ A polar hydrocarbon with that reacts with NaOH to form a salt.
- ☐ An amphipathic dicarboxylic acid with unconjugated double bonds.
- ☐ A molecule that has one cis double bond in a linear carbon chain

Click to Save Answer & Move to Next Question



MC200202050: MUNEEB HUSSAIN

Time Left 77 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 14 of 30 (Start time: 02:33:36 AM, 27 December 2020)

Total Marks: 1

Which of the following protects our heart and kidneys from injury?

Select the correct option

- ☐ Fat
- ☐ Muscles
- ☐ Skin
- ☒ Lubricants

Click to Save Answer & Move to Next Question



WU Medical Zone

MC200202050: MUNEEB HUSSAIN

Time Left 84 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 15 of 30 (Start time: 02:34:01 AM, 27 December 2020)

Total Marks: 1

Upon reaction with strong acids pentoses produce _____ while hexoses produce _____.

Select the correct option

- ☒ furfural, hydroxy methyl furfural
- ☐ hydroxy methyl furfural, furfural
- ☐ aldehydes, ketone
- ☐ deoxy sugars, amino sugars

Click to Save Answer & Move to Next Question



MC200202050: MUNEEB HUSSAIN

Time Left 84 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 16 of 30 (Start time: 02:34:22 AM, 27 December 2020)

Total Marks: 1

The name of Unsaturated acids with double bonds end in -----

Select the correct option

- ☒ enoic
- ☐ anoic
- ☐ dnoic
- ☐ none of above

Click to Save Answer & Move to Next Question



EFFORT BY AMAAN KHAN

WU Medical Zone

MC200202050: MUNEEB HUSSAIN

Time Left 84 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 17 of 30 (Start time: 02:34:40 AM, 27 December 2020)

Total Marks: 1

The process which convert unsaturated fatty acid to saturated fatty acid -----

Select the correct option

<input checked="" type="radio"/>	Hydrogenation
<input type="radio"/>	Glycolysis
<input type="radio"/>	Proteolysis
<input type="radio"/>	Liquefaction

Click to Save Answer & Move to Next Question



MC200202050: MUNEEB HUSSAIN

Time Left 42 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 18 of 30 (Start time: 02:34:59 AM, 27 December 2020)

Total Marks: 1

Histidine is a generally considered to be a ----- amino acid

Select the correct option

<input checked="" type="radio"/>	Polar
<input type="radio"/>	Non polar

Click to Save Answer & Move to Next Question



WU Medical Zone

MC200202050: MUNEEB HUSSAIN

Time Left 84 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 19 of 30 (Start time: 02:36:32 AM, 27 December 2020)

Total Marks: 1

Eicosanoids are derived from either _____ fatty acids.

Select the correct option

<input type="radio"/>	omega-3 (ω -3)	/
<input type="radio"/>	omega-6 (ω -6)	/
<input type="radio"/>	none of given	/
<input checked="" type="radio"/>	omega-3 (ω -3) or omega-6 (ω -6)	/

Click to Save Answer & Move to Next Question



MC200202050: MUNEEB HUSSAIN

Time Left 67 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 20 of 30 (Start time: 02:36:50 AM, 27 December 2020)

Total Marks: 1

Phospholipids frequently have nitrogen containing bases and other substituent are

Select the correct option

<input type="radio"/>	Glycerophospholipids the alcohol is glycerol.	/
<input type="radio"/>	Sphingophospholipids the alcohol is sphingosine.	/
<input type="radio"/>	None of any option	/
<input checked="" type="radio"/>	Both	/

Click to Save Answer & Move to Next Question



WU Medical Zone

MC200202050: MUNEEB HUSSAIN

Time Left 63 sec(s)

BIO202: Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 21 of 30 (Start time: 02:37:32 AM, 27 December 2020)

Total Marks: 1

Many proteins have multiple polypeptide subunits (from two to hundreds). A multisubunit protein is also referred to as a multimer. The repeating structural unit in such a multimeric protein is called a _____.

Select the correct option

<input checked="" type="radio"/>	protomer
<input type="radio"/>	amino acid
<input type="radio"/>	monosaccharide
<input type="radio"/>	motif

Click to Save Answer & Move to Next Question



MC200202050: MUNEEB HUSSAIN

Time Left 75 sec(s)

BIO202: Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 22 of 30 (Start time: 02:38:24 AM, 27 December 2020)

Total Marks: 1

Which of the following is a characteristic of both waxes and terpenes?

Select the correct option

<input type="radio"/>	Both can contain oxygen.
<input type="radio"/>	Both can contain an amino alcohol.
<input checked="" type="radio"/>	Both can contain a fatty acid.
<input type="radio"/>	Both can be non-saponifiable

Click to Save Answer & Move to Next Question



WU Medical Zone

MC200202050: MUNEEB HUSSAIN

Time Left 67 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 23 of 30 (Start time: 02:38:53 AM, 27 December 2020)

Total Marks: 1

In the lungs, the pH of the blood is _____ because CO₂ is being exhaled.

Select the correct option

<input type="radio"/>	Neutral
<input checked="" type="radio"/>	Higher
<input type="radio"/>	Lower
<input type="radio"/>	Zero

Click to Save Answer & Move to Next Question



MC200202050: MUNEEB HUSSAIN

Time Left 85 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 24 of 30 (Start time: 02:39:34 AM, 27 December 2020)

Total Marks: 1

A molecule bound reversibly by a protein is called a _____.

Select the correct option

<input checked="" type="radio"/>	ligand
<input type="radio"/>	lysozyme
<input type="radio"/>	sub-unit
<input type="radio"/>	chelator

Click to Save Answer & Move to Next Question



WU Medical Zone

MC200202050: MUNEEB HUSSAIN

Time Left 80 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 25 of 30 (Start time: 02:39:51 AM, 27 December 2020)

Total Marks: 1

Hemoglobin consists of pairs of different proteins, designated as α and β chains.

Select the correct option

<input checked="" type="radio"/>	Two
<input type="radio"/>	three
<input type="radio"/>	Four
<input type="radio"/>	Five

Click to Save Answer & Move to Next Question



MC200202050: MUNEEB HUSSAIN

Time Left 79 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 26 of 30 (Start time: 02:40:27 AM, 27 December 2020)

Total Marks: 1

Once a heme group is oxidized, what molecule is produced?

<input type="radio"/>	methemoglobin
<input checked="" type="radio"/>	hemoglobin
<input type="radio"/>	myoglobin
<input type="radio"/>	hemoglobin c

Click to Save Answer & Move to Next Question



WU Medical Zone

MC200202050: MUNEEB HUSSAIN

Time Left 41 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 27 of 30 (Start time: 02:40:53 AM, 27 December 2020)

Total Marks: 1

Which is a characteristic of the lipids in a biological membrane?

Select the correct option

- ☐ The fatty acids of lipid molecules are found in the interior of the membrane.
- ☒ Specific glycerophospholipids are distributed equally on the two membrane surfaces.
- ☐ Lipid molecules are held in fixed positions by non-covalent bonds with proteins
- ☐ The fluidity of the membrane decreases with lower levels of saturated fatty acids.

[Click to Save Answer & Move to Next Question](#)



MC200202050: MUNEEB HUSSAIN

Time Left 75 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 28 of 30 (Start time: 02:42:07 AM, 27 December 2020)

Total Marks: 1

Which of the following is an imino acid?

Select the correct option

- ☒ Proline
- ☐ Lysine
- ☐ Alanine
- ☐ Histidine

[Click to Save Answer & Move to Next Question](#)



WU Medical Zone

MC200202050: MUNEEB HUSSAIN

Time Left 84 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 29 of 30 (Start time: 02:42:40 AM, 27 December 2020)

Total Marks: 1

Immunoglobulins are _____ in nature.

Select the correct option

<input checked="" type="radio"/>	Proteins
<input type="radio"/>	Carbohydrates
<input type="radio"/>	Lipids
<input type="radio"/>	None of these

Click to Save Answer & Move to Next Question



MC200202050: MUNEEB HUSSAIN

Time Left 64 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:22 AM, 27 December 2020

Question # 30 of 30 (Start time: 02:42:59 AM, 27 December 2020)

Total Marks: 1

Long chain omega-3 fatty acids such as alpha-linolenic acid and their derivatives have _____ effects

Select the correct option

<input type="radio"/>	inflammatory
<input type="radio"/>	inhibitory
<input type="radio"/>	antagonistic
<input checked="" type="radio"/>	anti-inflammatory

Click to Save Answer & Move to Next Question



WU Medical Zone

MC200202241: MUHAMMAD RAMZAN

Time Left 45 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:46 AM, 27 December 2020

Question # 1 of 30 (Start time: 02:46:33 AM, 27 December 2020)

Total Marks: 1

Based on its structural similarity to other lipids, lipid most likely functions as -----

Select the correct option

- ☐ a vitamin required for vision.
- ☒ a membrane component.
- ☐ an energy storage molecule
- ☐ a sex hormone.

Click to Save Answer & Move to Next Question



MC200202241: MUHAMMAD RAMZAN

Time Left 72 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:46 AM, 27 December 2020

Question # 3 of 30 (Start time: 02:48:08 AM, 27 December 2020)

Total Marks: 1

_____ are major structural elements of biological membranes.

Select the correct option

- ☐ Proteins
- ☐ Phospholipids
- ☒ Phospholipids and sterols
- ☐ None of given

Click to Save Answer & Move to Next Question



WU Medical Zone

MC200202241: MUHAMMAD RAMZAN

Time Left 74 sec(s)

BIO202-Grand Quiz

Quiz Start Time: 02:46 AM, 27 December 2020

Question # 5 of 30 (Start time: 02:48:52 AM, 27 December 2020)

Total Marks: 1

Lauric acid the saturated fatty acid having ----- carbon atom chain

Select the correct option

<input checked="" type="radio"/>	12
<input type="radio"/>	13
<input type="radio"/>	14
<input type="radio"/>	15

Click to Save Answer & Move to Next Question



MC200202241: MUHAMMAD RAMZAN

Time Left 68 sec(s)

BIO202-Grand Quiz

Quiz Start Time: 02:46 AM, 27 December 2020

Question # 7 of 30 (Start time: 02:49:33 AM, 27 December 2020)

Total Marks: 1

_____ structure of proteins refers to particularly stable arrangements of amino acid residues giving rise to recurring structural patterns.

Select the correct option

<input type="radio"/>	Primary
<input checked="" type="radio"/>	Secondary
<input type="radio"/>	Tertiary
<input type="radio"/>	Quaternary

Click to Save Answer & Move to Next Question



WU Medical Zone

MC200202241: MUHAMMAD RAMZAN

Time Left 74 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:46 AM, 27 December 2020

Question # 8 of 30 (Start time: 02:50:13 AM, 27 December 2020)

Total Marks: 1

The iron atom of heme has ----- coordination bonds

Select the correct option

- ☒ six
- ☐ seven
- ☐ eight
- ☐ nine

Click to Save Answer & Move to Next Question



MC200202241: MUHAMMAD RAMZAN

Time Left 56 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:46 AM, 27 December 2020

Question # 9 of 30 (Start time: 02:50:39 AM, 27 December 2020)

Total Marks: 1

Sucrose, commonly known as table sugar, is formed by the reaction between glucose (Glc) and fructose (Fru). The glycosidic linkage found in sucrose can be denoted as _____.

Select the correct option

- ☐ Glc (α 1 \rightarrow 2 β) Fru
- ☒ Glc (α 1 \rightarrow 4 β) Fru
- ☐ Fru (α 1 \rightarrow 6 β) Glc
- ☐ Fru (α 1 \rightarrow 2 β) Glc

Click to Save Answer & Move to Next Question



WU Medical Zone

MC200202241: MUHAMMAD RAMZAN

Time Left 59 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:46 AM, 27 December 2020

Question # 10 of 30 (Start time: 02:51:32 AM, 27 December 2020)

Total Marks: 1

Esters of fatty acids with higher molecular weight monohydric alcohols (having one OH group)

Select the correct option

<input type="radio"/>	protein
<input checked="" type="radio"/>	Waxes
<input type="radio"/>	Steroid
<input type="radio"/>	Lipid

Click to Save Answer & Move to Next Question



MC200202241: MUHAMMAD RAMZAN

Time Left 69 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:46 AM, 27 December 2020

Question # 12 of 30 (Start time: 02:52:43 AM, 27 December 2020)

Total Marks: 1

A protein is called a _____ protein if its amino acid composition and molecular conformation are unchanged from that found in natural states.

Select the correct option

<input checked="" type="radio"/>	native
<input type="radio"/>	natural
<input type="radio"/>	folded
<input type="radio"/>	functional

Click to Save Answer & Move to Next Question



WU Medical Zone

MC200202241: MUHAMMAD RAMZAN

Time Left 72 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:46 AM, 27 December 2020

Question # 14 of 30 (Start time: 02:53:41 AM, 27 December 2020)

Total Marks: 1

A buffer is a solution that resists change in pH following the addition of an acid or base. Among amino acids, only _____ has an R group ($pK_a = 6.0$) providing significant buffering power near the neutral pH usually found in the intracellular and extracellular fluids of most animals.

Select the correct option

<input checked="" type="radio"/>	histidine
<input type="radio"/>	glycine
<input type="radio"/>	glucose
<input type="radio"/>	aspartic acid

Click to Save Answer & Move to Next Question



2:54 AM
27-Dec-20

MC200202241: MUHAMMAD RAMZAN

Time Left 81 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:46 AM, 27 December 2020

Question # 15 of 30 (Start time: 02:54:16 AM, 27 December 2020)

Total Marks: 1

The 16-carbon saturated fatty acid named as

Select the correct option

<input type="radio"/>	Propionic acid
<input type="radio"/>	Butyric acid
<input checked="" type="radio"/>	Palmitic acid
<input type="radio"/>	Oleic acid

Click to Save Answer & Move to Next Question



2:54 AM
27-Dec-20

WU Medical Zone

MC200202241: MUHAMMAD RAMZAN

Time Left 63 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:46 AM, 27 December 2020

Question # 16 of 30 (Start time: 02:54:38 AM, 27 December 2020)

Total Marks: 1

The enzyme that catalyzes the interchange, or shuffling, of disulfide bonds until the bonds of the native conformation are formed is called:

Select the correct option

- | | | |
|----------------------------------|-----------------------------|---|
| <input checked="" type="radio"/> | protein disulfide isomerase | / |
| <input type="radio"/> | sulfide dehydrogenase | / |
| <input type="radio"/> | protease | / |
| <input type="radio"/> | protein lyase | / |

Click to Save Answer & Move to Next Question



MC200202241: MUHAMMAD RAMZAN

Time Left 81 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:46 AM, 27 December 2020

Question # 17 of 30 (Start time: 02:55:25 AM, 27 December 2020)

Total Marks: 1

How many amino acids in the β chains of hemoglobin

Select the correct option

- | | | |
|----------------------------------|-----|---|
| <input checked="" type="radio"/> | 146 | / |
| <input type="radio"/> | 141 | / |
| <input type="radio"/> | 140 | / |
| <input type="radio"/> | 435 | / |

Click to Save Answer & Move to Next Question



WU Medical Zone

MC200202241: MUHAMMAD RAMZAN

Time Left 21 sec(s)

BIO202-Grand Quiz

Quiz Start Time: 02:46 AM, 27 December 2020

Question # 19 of 30 (Start time: 02:55:59 AM, 27 December 2020)

Total Marks: 1

Sickle cells are very fragile and rupture easily. This results in _____.

Select the correct option

<input checked="" type="radio"/>	Anemia	/
<input type="radio"/>	Blood cancer	/
<input type="radio"/>	Heamophilia	/
<input type="radio"/>	Aplastic anemia	/

Click to Save Answer & Move to Next Question



MC200202241: MUHAMMAD RAMZAN

Time Left 73 sec(s)

BIO202-Grand Quiz

Quiz Start Time: 02:46 AM, 27 December 2020

Question # 21 of 30 (Start time: 02:58:12 AM, 27 December 2020)

Total Marks: 1

_____ that is a fatty acid with one double bond and is abbreviated as 18:1.

Select the correct option

<input type="radio"/>	Palmitic acid	/
<input type="radio"/>	Glacial acetic acid	/
<input type="radio"/>	Tartaric acid	/
<input checked="" type="radio"/>	Oleic acid	/

Click to Save Answer & Move to Next Question



WU Medical Zone

MC200202241: MUHAMMAD RAMZAN

Time Left 60 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:46 AM, 27 December 2020

Question # 29 of 30 (Start time: 03:00:01 AM, 27 December 2020)

Total Marks: 1

Disulphide bonds are formed between two molecules of the amino acid cysteine. The reaction involves:

Select the correct option

- ☒ oxidation of sulphydryl groups
- ☐ reduction of sulphydryl groups
- ☐ methylation of a carbon
- ☐ phosphorylation of a carbon

Click to Save Answer & Move to Next Question



MC200202241: MUHAMMAD RAMZAN

Time Left 65 sec(s)

BIO202:Grand Quiz

Quiz Start Time: 02:46 AM, 27 December 2020

Question # 30 of 30 (Start time: 03:00:49 AM, 27 December 2020)

Total Marks: 1

Certain proteins that are denatured by heat, extremes of pH, or denaturing reagents can regain their native structure and biological activity if returned to conditions in which the native conformation is stable. An example is the enzyme ribonuclease A which is denatured in a _____ solution in the presence of a reducing agent.

Select the correct option

- ☒ concentrated urea
- ☐ buffer
- ☐ normal saline
- ☐ serum

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 1 of 30 (Start time: 02:02:52 AM, 27 December 2020)

Total Marks: 1

The native conformation of the protein is dependent on its folding patterns. These folding patters are dictated by:

Select the correct option

<input checked="" type="radio"/>	thermodynamics	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	hydraulics	
<input type="radio"/>	conformation of peptide bonds	
<input type="radio"/>	function of protein	

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 2 of 30 (Start time: 02:03:55 AM, 27 December 2020)

Total Marks: 1

The hydrolysis of starch by the enzyme 'amylase' produces maltose. In the human body, maltose is further hydrolyzed by the enzyme maltase (present in intestinal brush border) to produce _____.

Select the correct option

<input type="radio"/>	galactose
<input checked="" type="radio"/>	glucose
<input type="radio"/>	maltotrisoe
<input type="radio"/>	mannose

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 3 of 30 (Start time: 02:04:15 AM, 27 December 2020)

Total Marks: 1

Which type of membrane lipid contains an acidic oligosaccharide?

Select the correct option

<input type="radio"/>	globoside	/
<input type="radio"/>	phosphatidylinositol	/
<input type="radio"/>	cerebroside	/
<input checked="" type="radio"/>	ganglioside	/

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 4 of 30 (Start time: 02:04:29 AM, 27 December 2020)

Total Marks: 1

Which of the following is not a component of a phospholipid?

Select the correct option

<input type="radio"/>	Phosphate	/
<input checked="" type="radio"/>	Protein	/
<input type="radio"/>	Glycerol	/
<input type="radio"/>	Alcohol	/

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 5 of 30 (Start time: 02:04:46 AM, 27 December 2020)

Total Marks: 1

How many amino acids in the α chain of hemoglobin.

Select the correct option

<input checked="" type="radio"/>	141	
<input type="radio"/>	146	
<input type="radio"/>	543	
<input type="radio"/>	144	

Click to Save Answer & Move to Next Question

Windows is not genuine
Click this message to learn how to get genuine.

BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 6 of 30 (Start time: 02:05:07 AM, 27 December 2020)

Total Marks: 1

One degradation product of Haemoglobin is the brown bile pigment called as -----

Select the correct option

<input checked="" type="radio"/>	Bilirubin	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Biliverdin	

Click to Save Answer & Move to Next Question

WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 7 of 30 (Start time: 02:05:20 AM, 27 December 2020)

Total Marks: 1

Which statement about amino acids at physiological pH is true?

Select the correct option

- | | | |
|----------------------------------|--|--|
| <input checked="" type="radio"/> | The carboxyl group is dissociated ($-\text{COO}^-$) and the amino group is protonated (NH_3^+). | Answer Solved by Amaan Khan
Contact: 0305-4716616
Email: maniamaan2@gmail.com |
| <input type="radio"/> | Only the carboxyl group is dissociated ($-\text{COO}^-$). | |
| <input type="radio"/> | Only the amino group is protonated (NH_3^+). | |
| <input type="radio"/> | There is no charge on either the carboxyl group or the amino group. | |

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 8 of 30 (Start time: 02:05:34 AM, 27 December 2020)

Total Marks: 1

The carbon atoms in fatty acids are numbered, beginning with the carboxyl carbon as -----

Select the correct option

- | | |
|----------------------------------|----|
| <input checked="" type="radio"/> | C1 |
| <input type="radio"/> | C2 |
| <input type="radio"/> | C3 |
| <input type="radio"/> | C4 |

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 9 of 30 (Start time: 02:05:55 AM, 27 December 2020)

Total Marks: 1

A molecule bound reversibly by a protein is called a _____.

Select the correct option

<input checked="" type="radio"/>	ligand
<input type="radio"/>	lysozyme
<input type="radio"/>	sub-unit
<input type="radio"/>	chelator

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 10 of 30 (Start time: 02:06:26 AM, 27 December 2020)

Total Marks: 1

OxyHemoglobin Dissociation Curve Bohr effect decreased affinity of haemoglobin for ----- gas caused by an increase of carbon dioxide pH etc.

Select the correct option

<input checked="" type="radio"/>	Oxygen
<input type="radio"/>	Carbon dioxide
<input type="radio"/>	Ozone
<input type="radio"/>	Nitrogen

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202-Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 11 of 30 (Start time: 02:06:44 AM, 27 December 2020)

Total Marks: 1

Protein folding is governed by thermodynamics. The folding process involves a decrease in randomness and thus a decrease in _____.

Select the correct option

- | | | |
|----------------------------------|---------------------|---|
| <input checked="" type="radio"/> | entropy | / |
| <input type="radio"/> | flexibility | / |
| <input type="radio"/> | stability | / |
| <input type="radio"/> | interactions formed | / |

Click to Save Answer & Move to Next Question



BIO202-Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 12 of 30 (Start time: 02:07:26 AM, 27 December 2020)

Total Marks: 1

The characteristic pH at which the net electric charge on amino acid molecule is zero is called _____.

Select the correct option

- | | | |
|----------------------------------|-------------------|---|
| <input type="radio"/> | cationic pH | / |
| <input checked="" type="radio"/> | isoelectric point | / |
| <input type="radio"/> | ampholytic point | / |
| <input type="radio"/> | anionic point | / |

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 13 of 30 (Start time: 02:07:59 AM, 27 December 2020)

Total Marks: 1

Eicosanoids are derived from either _____ fatty acids.

Select the correct option

- ☐ omega-3 (ω -3)
- ☐ omega-6 (ω -6)
- ☐ none of given
- ☒ omega-3 (ω -3) or omega-6 (ω -6)

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 14 of 30 (Start time: 02:08:41 AM, 27 December 2020)

Total Marks: 1

Electrostatic interactions help stabilize the three dimensional tertiary structure of proteins. These interactions are formed as a result of ionic bonds formed between the positively and negatively charged amino acids. The positive charges are usually present on _____ amino acids.

Select the correct option

- ☒ basic
- ☐ acidic
- ☐ neutral
- ☐ all

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 15 of 30 (Start time: 02:09:39 AM, 27 December 2020)

Total Marks: 1

The process by which oxygen enters the blood from the alveoli is

Select the correct option

- ☐ facilitated diffusion
- ☒ diffusion
- ☐ active transport
- ☐ none

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 16 of 30 (Start time: 02:09:51 AM, 27 December 2020)

Total Marks: 1

The conformational change of hemoglobin is usually described as changing from T (Tense) state to R (Relaxed) state with a low affinity for Oxygen.

Select the correct option

- ☒ True
- ☐ False

Answer Solved by Amaan Khan
Contact: 0305-4716616
Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 17 of 30 (Start time: 02:10:36 AM, 27 December 2020)

Total Marks: 1

A loss of three-dimensional structure sufficient to cause loss of function of the protein is called _____.

Select the correct option

<input checked="" type="radio"/>	denaturation	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	/
<input type="radio"/>	catalysis		/
<input type="radio"/>	reactivation		/
<input type="radio"/>	misfolding		/

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 18 of 30 (Start time: 02:10:53 AM, 27 December 2020)

Total Marks: 1

β Sheets are a type of regular secondary structure that maximizes hydrogen bonding between the peptide backbones. The sheet is described as _____ if the polypeptide strands run in the same direction (as defined by their amino and carboxy terminals).

Select the correct option

<input type="radio"/>	anti-parallel	/
<input checked="" type="radio"/>	parallel	/
<input type="radio"/>	aligned	/
<input type="radio"/>	helical	/

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 19 of 30 (Start time: 02:11:41 AM, 27 December 2020)

Total Marks: 1

Apart from the 20 standard amino acids, some other amino acids may also be synthesized and become a part of the protein. An example of such an amino acid is _____ which is a naturally occurring, genetically coded amino acid used by some methanogenic archaea.

Select the correct option

<input checked="" type="radio"/>	pyrrolysine	/
<input type="radio"/>	phenylalanine	/
<input type="radio"/>	aspartic acid	/
<input type="radio"/>	sialic acid	/

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 20 of 30 (Start time: 02:12:11 AM, 27 December 2020)

Total Marks: 1

Oxygen stored in red muscle myoglobin is released during O₂ deprivation (e.g. severe exercise) to be used in muscle mitochondria for _____.

Select the correct option

<input checked="" type="radio"/>	Aerobic synthesis of ATP molecules	/
<input type="radio"/>	Anaerobic synthesis of ATP molecules	/
<input type="radio"/>	Aerobic synthesis of more O ₂	/
<input type="radio"/>	Anaerobic synthesis of more CO ₂	/

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 21 of 30 (Start time: 02:12:41 AM, 27 December 2020)

Total Marks: 1

The form of an amino acid that has both a positive and a negative charge is called a _____.

Select the correct option

<input checked="" type="radio"/>	zwitterion
<input type="radio"/>	non-ionic
<input type="radio"/>	cation
<input type="radio"/>	anion

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 22 of 30 (Start time: 02:13:08 AM, 27 December 2020)

Total Marks: 1

The surface of myoglobin is polar, important for interacting with----- aqueous environment of cytosol.

Select the correct option

<input checked="" type="radio"/>	polar
<input type="radio"/>	non polar
<input type="radio"/>	organic
<input type="radio"/>	inorganic

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 23 of 30 (Start time: 02:13:20 AM, 27 December 2020)

Total Marks: 1

Clusters of twisted strands of β -sheet form the core of many _____ proteins.

Select the correct option

<input type="radio"/>	fibrous
<input checked="" type="radio"/>	globular
<input type="radio"/>	collagenous
<input type="radio"/>	structural

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 24 of 30 (Start time: 02:13:49 AM, 27 December 2020)

Total Marks: 1

The 18-carbon with one double bond named as

Select the correct option

<input type="radio"/>	Palmitic acid
<input type="radio"/>	Propionic acid
<input checked="" type="radio"/>	Oleic acid
<input type="radio"/>	Butyric acid

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 25 of 30 (Start time: 02:14:18 AM, 27 December 2020)

Total Marks: 1

Fats are abundantly found in

Select the correct option

<input checked="" type="radio"/>	Reproductive tissue	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Vegetative tissue	

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 26 of 30 (Start time: 02:15:05 AM, 27 December 2020)

Total Marks: 1

Cis-9-hexadecenoic acid, that is a fatty Acid with nutritional significance is commonly known as _____ acid

Select the correct option

<input type="radio"/>	Oleic	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Palmitic	
<input checked="" type="radio"/>	Palmitoleic	
<input type="radio"/>	None of given	

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 27 of 30 (Start time: 02:15:36 AM, 27 December 2020)

Total Marks: 1

The quaternary structure of human hemoglobin is best described as a

Select the correct option

<input type="radio"/>	dimer of two myoglobin dimers.	
<input checked="" type="radio"/>	tetramer of identical subunits	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	tetramer of four different subunits	
<input type="radio"/>	tetramer of two different subunits	

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 28 of 30 (Start time: 02:15:48 AM, 27 December 2020)

Total Marks: 1

hemoglobin binds O2 molecules.

Select the correct option

<input checked="" type="radio"/>	four	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	two	
<input type="radio"/>	one	
<input type="radio"/>	five	

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 29 of 30 (Start time: 02:16:03 AM, 27 December 2020)

Total Marks: 1

Upon reaction with strong acids pentoses produce _____ while hexoses produce _____.

Select the correct option

<input checked="" type="radio"/>	furfural, hydroxy methyl furfural	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	hydroxy methyl furfural, furfural	
<input type="radio"/>	aldehydes, ketone	
<input type="radio"/>	deoxy sugars, amino sugars	

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 02:02 AM, 27 December 2020

Question # 30 of 30 (Start time: 02:16:46 AM, 27 December 2020)

Total Marks: 1

Fatty acids are found in the unesterified form as -----, a transport form in the plasma.

Select the correct option

<input type="radio"/>	Oils	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input checked="" type="radio"/>	free fatty acids	
<input type="radio"/>	Esters	
<input type="radio"/>	Bounded fatty acids	

Click to Save Answer & Move to Next Question



EFFORT BY AMAAN KHAN

WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 1 of 30 (Start time: 01:16:01 AM, 27 December 2020)

Total Marks: 1

The ----- gas is used for aerobic synthesis of ATP in muscle mitochondria during the case of severe exercise

Select the correct option

<input checked="" type="radio"/>	Oxygen	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	/
<input type="radio"/>	Carbon dioxide		/
<input type="radio"/>	ozone		/
<input type="radio"/>	none		/

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 2 of 30 (Start time: 01:16:41 AM, 27 December 2020)

Total Marks: 1

D-amino acids are also non standard amino acids that occur naturally. Which of the following D-amino acid is found in the cell wall of Gram positive bacteria?

Select the correct option

<input checked="" type="radio"/>	D-alanine	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	/
<input type="radio"/>	5-hydroxy lysine		/
<input type="radio"/>	D-serine		/
<input type="radio"/>	cysteine		/

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 3 of 30 (Start time: 01:17:17 AM, 27 December 2020)

Total Marks: 1

What is the solubility of lipids in water?

Select the correct option

<input type="radio"/>	Partially soluble
<input type="radio"/>	Soluble
<input checked="" type="radio"/>	Insoluble
<input type="radio"/>	Partially insoluble

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 4 of 30 (Start time: 01:17:34 AM, 27 December 2020)

Total Marks: 1

The net charge on alanine in acidic solution (pH less than 2) is _____.

Select the correct option

<input type="radio"/>	Negative
<input checked="" type="radio"/>	Positive
<input type="radio"/>	Neutral
<input type="radio"/>	First negative then becomes neutral

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 5 of 30 (Start time: 01:18:38 AM, 27 December 2020)

Total Marks: 1

The service (Pocket) created by ----- amino acids in the interior of myoglobin create a binding pocket for heme.

Select the correct option

<input type="radio"/>	Polar	/
<input checked="" type="radio"/>	Non-polar	/
<input type="radio"/>	Basic	/
<input type="radio"/>	Acidic	/

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 6 of 30 (Start time: 01:19:32 AM, 27 December 2020)

Total Marks: 1

The surface of myoglobin is polar, important for interacting with----- aqueous environment of cytosol.

Select the correct option

<input checked="" type="radio"/>	polar	/
<input type="radio"/>	non polar	/
<input type="radio"/>	organic	/
<input type="radio"/>	inorganic	/

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 7 of 30 (Start time: 01:20:01 AM, 27 December 2020)

Total Marks: 1

All of the following are true for lactose EXCEPT:

Select the correct option

- ☐ It is a reducing sugar.
- ☒ It is found abundantly in grape juice.
- ☐ It is dextrorotatory.
- ☐ It is made up of galactose and glucose.

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 8 of 30 (Start time: 01:20:43 AM, 27 December 2020)

Total Marks: 1

Catalytic proteins are called as -----

Select the correct option

- ☐ Amino group proteins
- ☒ Enzymes
- ☐ Catalysts
- ☐ Carbon R chain groups

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 9 of 30 (Start time: 01:21:12 AM, 27 December 2020)

Total Marks: 1

The name of saturated acids end in -----

Select the correct option

<input checked="" type="radio"/>	anoic	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	enoic	
<input type="radio"/>	dnoic	
<input type="radio"/>	none	

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 10 of 30 (Start time: 01:21:45 AM, 27 December 2020)

Total Marks: 1

In contrast to myoglobin hemoglobin can bind ----- oxygen molecules-one at each of its heme group

Select the correct option

<input checked="" type="radio"/>	Four
<input type="radio"/>	Five
<input type="radio"/>	One
<input type="radio"/>	Two

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 11 of 30 (Start time: 01:22:23 AM, 27 December 2020)

Total Marks: 1

Which of the following occurs when hydrogen is reacted with vegetable oil?

Select the correct option

- | | | |
|----------------------------------|---|---|
| <input type="radio"/> | The hydrogenated vegetable oil will contain fewer Tran's fats. | / |
| <input type="radio"/> | The hydrogenated vegetable oil will become solid at room temperature. | / |
| <input type="radio"/> | The hydrogenated vegetable oil will become polarized. | / |
| <input checked="" type="radio"/> | The hydrogenated vegetable oil will become a saturated fat. | / |

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 12 of 30 (Start time: 01:23:12 AM, 27 December 2020)

Total Marks: 1

The folding of contiguous segments of polypeptide form secondary structure of protein

Select the correct option

- | | | |
|----------------------------------|-------|---|
| <input type="radio"/> | 3-20 | / |
| <input checked="" type="radio"/> | 3-30 | / |
| <input type="radio"/> | 3-300 | / |
| <input type="radio"/> | 20 | / |

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 13 of 30 (Start time: 01:23:47 AM, 27 December 2020)

Total Marks: 1

Which of the following protects our heart and kidneys from injury?

Select the correct option

<input type="radio"/>	Fat
<input type="radio"/>	Muscles
<input type="radio"/>	Skin
<input checked="" type="radio"/>	Lubricants

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 14 of 30 (Start time: 01:24:48 AM, 27 December 2020)

Total Marks: 1

The three dimensional arrangement of two or more polypeptides is called

Select the correct option

<input type="radio"/>	Primary structure
<input type="radio"/>	Secondary structure
<input type="radio"/>	Tertiary structure
<input checked="" type="radio"/>	Quaternary structure

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 15 of 30 (Start time: 01:25:08 AM, 27 December 2020)

Total Marks: 1

During reversible binding of protein the blood pH consequently rises, the affinity of haemoglobin for oxygen increases and the protein binds more O₂ for transport to the -----

Select the correct option

<input checked="" type="radio"/>	Peripheral tissues.	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	/
<input type="radio"/>	Lung		/
<input type="radio"/>	Heart		/
<input type="radio"/>	Kidney		/

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 16 of 30 (Start time: 01:25:48 AM, 27 December 2020)

Total Marks: 1

Storage proteins have the ability to bind and store specific elements or compounds. _____ is an example of a storage protein that stores copper.

Select the correct option

<input type="radio"/>	Heamoglobin	/
<input checked="" type="radio"/>	Ferritin	/
<input type="radio"/>	Ceruloplasmin	/
<input type="radio"/>	Urease	/

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 17 of 30 (Start time: 01:27:40 AM, 27 December 2020)

Total Marks: 1

This effect of pH and CO₂ concentration on the binding and release of oxygen by haemoglobin is called the -----

Select the correct option

<input checked="" type="radio"/>	Bohr effect	/
<input type="radio"/>	Nelson effect	/
<input type="radio"/>	Nucleus effect	/
<input type="radio"/>	Electron removal	/

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 18 of 30 (Start time: 01:28:06 AM, 27 December 2020)

Total Marks: 1

The following sterol is present in the cell membrane of fungi?

Select the correct option

<input type="radio"/>	Campesterol	/
<input type="radio"/>	Ergosterol	/
<input type="radio"/>	Stigmasterol	/
<input checked="" type="radio"/>	Sitosterol	/

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 19 of 30 (Start time: 01:29:07 AM, 27 December 2020)

Total Marks: 1

A plot of degree of saturation (Y) measured at different partial pressures of oxygen (pO_2) is called -----

Select the correct option

- | | | |
|----------------------------------|-----------------------------|---|
| <input checked="" type="radio"/> | Oxygen dissociation curve | / |
| <input type="radio"/> | Carbon dissociation curve | / |
| <input type="radio"/> | Nitrogen dissociation curve | / |
| <input type="radio"/> | None | / |

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 20 of 30 (Start time: 01:29:44 AM, 27 December 2020)

Total Marks: 1

Osazones are obtained by adding a mixture of phenyl hydrazine hydrochloride and sodium acetate to a sugar solution and heating in water bath for 45 mins. Which two carbon atoms in the sugar molecule are involved in osazone formation?

Select the correct option

- | | | | |
|----------------------------------|-----------|---|---|
| <input checked="" type="radio"/> | C1 and C2 | Answer Solved by Amaan Khan
Contact: 0305-4716616
Email: maniamaan2@gmail.com | / |
| <input type="radio"/> | C1 and C6 | | / |
| <input type="radio"/> | C1 and C4 | | / |
| <input type="radio"/> | C3 and C5 | | / |

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 21 of 30 (Start time: 01:30:07 AM, 27 December 2020)

Total Marks: 1

Esters of fatty acids containing groups in addition to an alcohol and a fatty acid called as

Select the correct option

<input type="radio"/>	Derived lipid	
<input checked="" type="radio"/>	Complex lipids	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Simple lipid	
<input type="radio"/>	None	

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 22 of 30 (Start time: 01:30:46 AM, 27 December 2020)

Total Marks: 1

Excess iron has a significant affinity for specific organs, particularly:

Select the correct option

<input type="radio"/>	The lungs, liver and endocrine glands.	
<input type="radio"/>	The heart, liver and endocrine glands.	
<input type="radio"/>	endocrine glands.	
<input checked="" type="radio"/>	Liver only	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question



EFFORT BY AMAAN KHAN

WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 23 of 30 (Start time: 01:32:04 AM, 27 December 2020)

Total Marks: 1

Cis-9-hexadecenoic acid, that is a fatty Acid with nutritional significance is commonly known as _____ acid

Select the correct option

<input type="radio"/>	Oleic
<input type="radio"/>	Palmitic
<input checked="" type="radio"/>	Palmitoleic
<input type="radio"/>	None of given

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 24 of 30 (Start time: 01:32:54 AM, 27 December 2020)

Total Marks: 1

Which statement about Non-polar aliphatic amino acids is FALSE?

Select the correct option

<input type="radio"/>	They have side chains that do not bind or give off protons.
<input type="radio"/>	They are lipid-like and promote hydrophobic interactions.
<input type="radio"/>	The side chains often cluster towards the interior of the protein.
<input checked="" type="radio"/>	They form hydrogen bonds abundantly.

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 25 of 30 (Start time: 01:33:32 AM, 27 December 2020)

Total Marks: 1

Out of 20 standard amino acids, _____ contains a secondary amino group and is called an imino acid.

Select the correct option

<input checked="" type="radio"/>	proline	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	/
<input type="radio"/>	serine		/
<input type="radio"/>	methionine		/
<input type="radio"/>	histidine		/

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 26 of 30 (Start time: 01:34:17 AM, 27 December 2020)

Total Marks: 1

Current evidence suggests that diet rich in omega 3 fatty acids are beneficial particularly for

Select the correct option

<input type="radio"/>	cardiovascular disease	/
<input type="radio"/>	Alzheimer's disease	/
<input type="radio"/>	arthritis	/
<input checked="" type="radio"/>	All of given	/

Click to Save Answer & Move to Next Question



EFFORT BY AMAAN KHAN

WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 27 of 30 (Start time: 01:34:37 AM, 27 December 2020)

Total Marks: 1

Margarines are vegetable -----

Select the correct option



Oils



Wax



Carbogydrate



Protein

Click to Save Answer & Move to Next Question



BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 28 of 30 (Start time: 01:34:59 AM, 27 December 2020)

Total Marks: 1

The main difference between saturated and unsaturated fatty acids is -----

Select the correct option



The number of carbons



The presence of keto group



That one is absent from phospholipids.



The presence of double bond

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 29 of 30 (Start time: 01:35:22 AM, 27 December 2020)

Total Marks: 1

Fatty acids that occur in natural fats usually contain an even number of carbon atoms ranging from ----- to ----- carbons

Select the correct option

<input type="radio"/>	3 to 67	
<input checked="" type="radio"/>	4 to 36	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	2 to 38	
<input type="radio"/>	3 to 37	

[Click to Save Answer & Move to Next Question](#)



BIO202:Grand Quiz

Quiz Start Time: 01:15 AM, 27 December 2020

Question # 30 of 30 (Start time: 01:37:19 AM, 27 December 2020)

Total Marks: 1

Almost all peptide bonds in a protein are present in the _____ configuration.

Select the correct option

<input type="radio"/>	D	
<input type="radio"/>	cis	
<input checked="" type="radio"/>	trans	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	cis-trans	

[Click to Save Answer & Move to Next Question](#)



WU Medical Zone

BIO 202 Quiz no 1 Fall 2020

BIO202:Quiz 1

sec(s)
Quiz Start Time: 02:16 AM, 21 December 2020

Question # 1 of 10 (Start time: 02:16:44 AM, 21 December 2020)

Total Marks: 1

Glucose is excreted in urine in poorly controlled diabetes mellitus as a result of hyperglycemia. This medical condition is known as:

Select the correct option

<input type="radio"/>	hypoglycemia	
<input type="radio"/>	hyperinsulinism	
<input type="radio"/>	glyceraldehyde 3 dehydrogenase deficiency	
<input checked="" type="radio"/>	glucosuria	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question



BIO202:Quiz 1

sec(s)
Quiz Start Time: 02:16 AM, 21 December 2020

Question # 2 of 10 (Start time: 02:17:49 AM, 21 December 2020)

Total Marks: 1

The condition in which the body fails to metabolize galactose is known as:

Select the correct option

<input checked="" type="radio"/>	galactosemia	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	glucosuria	
<input type="radio"/>	diabetes mellitus	
<input type="radio"/>	hypoglycemia	

Click to Save Answer & Move to Next Question



EFFORT BY AMAAN KHAN

WU Medical Zone

BIO202:Quiz 1

Quiz Start Time: 02:16 AM, 21 December 2020

Question # 3 of 10 (Start time: 02:18:57 AM, 21 December 2020)

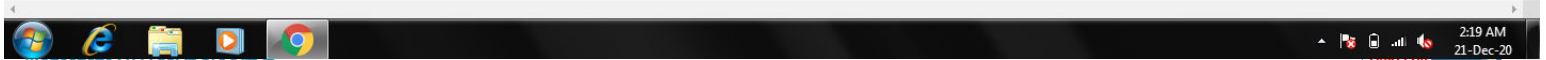
Total Marks: 1

_____ is commonly found in fruit juices, personal lubricants, and wine, and is used to create tangy taste in food.

Select the correct option

<input type="radio"/>	Glucose	
<input type="radio"/>	Salt	
<input checked="" type="radio"/>	Glucono delta-lactone	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Honey	

Click to Save Answer & Move to Next Question



BIO202:Quiz 1

Quiz Start Time: 02:16 AM, 21 December 2020

Question # 4 of 10 (Start time: 02:19:40 AM, 21 December 2020)

Total Marks: 1

Simplest carbohydrate is _____

Select the correct option

<input type="radio"/>	Sucrose	
<input checked="" type="radio"/>	Glyceraldehyde	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Glucose	
<input type="radio"/>	Glycerine	

Click to Save Answer & Move to Next Question



EFFORT BY AMAAN KHAN

WU Medical Zone

BIO202:Quiz 1

Quiz Start Time: 02:16 AM, 21 December 2020

Question # 5 of 10 (Start time: 02:20:40 AM, 21 December 2020)

Total Marks: 1

The designation of a sugar isomer as the D form or as the L form is determined by its spatial relationship to the parent compound of the carbohydrates, which is _____.

Select the correct option

<input checked="" type="radio"/>	glyceraldehyde	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	
<input type="radio"/>	glucose		
<input type="radio"/>	glycerol		
<input type="radio"/>	glycogen		

Click to Save Answer & Move to Next Question



BIO202:Quiz 1

Quiz Start Time: 02:16 AM, 21 December 2020

Question # 6 of 10 (Start time: 02:20:56 AM, 21 December 2020)

Total Marks: 1

The oxidation of monosaccharides results in the production of either aldonic acids or uronic acids depending on the carbon atom oxidized. Both aldonic and uronic acids form stable intramolecular esters that are known as _____.

Select the correct option

<input checked="" type="radio"/>	lactones	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	
<input type="radio"/>	furfurals		
<input type="radio"/>	aldoses		
<input type="radio"/>	carboxylates		

Click to Save Answer & Move to Next Question



EFFORT BY AMAAN KHAN

WU Medical Zone

BIO202:Quiz 1

Quiz Start Time: 02:16 AM, 21 December 2020

Question # 7 of 10 (Start time: 02:21:42 AM, 21 December 2020)

Total Marks: 1

Glucuronide is a soluble, non-toxic compound that is excreted in the urine. It is produced when _____ forms conjugates with toxic substances including drugs, hormones and bilirubin.

Select the correct option

<input type="radio"/>	glyceraldehyde	
<input type="radio"/>	gluconic acid	
<input type="radio"/>	glucose	
<input checked="" type="radio"/>	glucuronic acid	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question



BIO202:Quiz 1

Quiz Start Time: 02:16 AM, 21 December 2020

Question # 8 of 10 (Start time: 02:22:33 AM, 21 December 2020)

Total Marks: 1

Both glycogen and cellulose are made up of glucose subunits. However, while glycogen is _____, cellulose exists in the form of _____.

Select the correct option

<input type="radio"/>	polysaccharide, disaccharide	
<input checked="" type="radio"/>	branched, linear chains	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	linear chains, branched	
<input type="radio"/>	disaccharide, polysaccharide	

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Quiz 1

Quiz Start Time: 02:16 AM, 21 December 2020

Question # 9 of 10 (Start time: 02:22:48 AM, 21 December 2020)

Total Marks: 1

Isomeric forms of monosaccharides that differ only in their configuration about the hemiacetal or hemiketal carbon atom are called _____.

Select the correct option

<input checked="" type="radio"/>	anomers	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	
<input type="radio"/>	stereoisomers		
<input type="radio"/>	epimers		
<input type="radio"/>	enantiomers		

Click to Save Answer & Move to Next Question



BIO202:Quiz 1

Quiz Start Time: 02:16 AM, 21 December 2020

Question # 10 of 10 (Start time: 02:23:18 AM, 21 December 2020)

Total Marks: 1

1. Carbohydrates are polyhydroxy _____, or substances that yield such compounds on hydrolysis.

Select the correct option

<input type="radio"/>	Aldehydes		
<input type="radio"/>	ketones		
<input checked="" type="radio"/>	Aldehydes or ketones	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	
<input type="radio"/>	All of given		

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Quiz 1

Quiz Start Time: 02:55 AM, 21 December 2020

Question # 1 of 10 (Start time: 02:55:56 AM, 21 December 2020)

Total Marks: 1

Crystalline derivatives of monosaccharides, formed from phenyl hydrazine are known as _____.

Select the correct option

<input type="radio"/>	Sugar	
<input checked="" type="radio"/>	Osazone	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Glucose	
<input type="radio"/>	Cake	

Click to Save Answer & Move to Next Question



BIO202:Quiz 1

Quiz Start Time: 02:55 AM, 21 December 2020

Question # 2 of 10 (Start time: 02:56:14 AM, 21 December 2020)

Total Marks: 1

_____ is commonly found in fruit juices, personal lubricants, and wine, and is used to create tangy taste in food.

Select the correct option

<input type="radio"/>	Glucose	
<input type="radio"/>	Salt	
<input checked="" type="radio"/>	Glucono delta-lactone	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Honey	

Click to Save Answer & Move to Next Question



EFFORT BY AMAAN KHAN

WU Medical Zone

BIO202:Quiz 1

Quiz Start Time: 02:55 AM, 21 December 2020

Question # 3 of 10 (Start time: 02:56:29 AM, 21 December 2020)

Total Marks: 1

The substitution of a hydrogen for the hydroxyl group at C-6 of L-mannose produces _____.

Select the correct option

<input type="radio"/>	D-mannose	
<input type="radio"/>	L-glucose	
<input checked="" type="radio"/>	L-rhamnose	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	L-mannosamine	

Click to Save Answer & Move to Next Question



BIO202:Quiz 1

Quiz Start Time: 02:55 AM, 21 December 2020

Question # 4 of 10 (Start time: 02:56:44 AM, 21 December 2020)

Total Marks: 1

The oxidation of carbonyl carbon in monosaccharides yield products known as:

Select the correct option

<input checked="" type="radio"/>	aldonic acids	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	uronic acids	
<input type="radio"/>	aldoses	
<input type="radio"/>	furfurals	



Click to Save Answer & Move to Next Question



EFFORT BY AMAAN KHAN

WU Medical Zone

BIO202:Quiz 1

Quiz Start Time: 02:55 AM, 21 December 2020

Question # 5 of 10 (Start time: 02:58:17 AM, 21 December 2020)

Total Marks: 1

Glucono delta-lactone (GDL) is a type of lactone, commonly found in honey, fruit juices, personal lubricants, and wine. It hydrolyses in water to form _____ which has a _____ pH

Select the correct option

<input checked="" type="radio"/>	gluconic acid, acidic	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	glucose, neutral	
<input type="radio"/>	glucuronic acid, acidic	
<input type="radio"/>	glyceraldehyde, neutral	

Click to Save Answer & Move to Next Question



BIO202:Quiz 1

Quiz Start Time: 02:55 AM, 21 December 2020

Question # 6 of 10 (Start time: 03:00:12 AM, 21 December 2020)

Total Marks: 1

The terminal methyl & _____ carbon of glucose, galactose, or mannose-forms the corresponding aldonic acid.

Select the correct option

<input type="radio"/>	Carboxyl	
<input type="radio"/>	Ketone	
<input type="radio"/>	Aldehyde	
<input checked="" type="radio"/>	Carbonyl	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Quiz 1

Quiz Start Time: 02:55 AM, 21 December 2020

Question # 7 of 10 (Start time: 03:00:46 AM, 21 December 2020)

Total Marks: 1

Osozones are obtained by adding a mixture of phenyl hydrazine hydrochloride and sodium acetate to a sugar solution and heating in water bath for 45 mins. Which two carbon atoms in the sugar molecule are involved in osazone formation?

Select the correct option

<input checked="" type="radio"/>	C1 and C2	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	C1 and C6	
<input type="radio"/>	C1 and C4	
<input type="radio"/>	C3 and C5	

Click to Save Answer & Move to Next Question



BIO202:Quiz 1

Quiz Start Time: 02:55 AM, 21 December 2020

Question # 8 of 10 (Start time: 03:01:49 AM, 21 December 2020)

Total Marks: 1

1. Carbohydrates are polyhydroxy _____, or substances that yield such compounds on hydrolysis.

Select the correct option

<input type="radio"/>	Aldehydes	
<input type="radio"/>	ketones	
<input checked="" type="radio"/>	Aldehydes or ketones	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	All of given	

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202: Quiz 1

Quiz Start Time: 02:55 AM, 21 December 2020

Question # 9 of 10 (Start time: 03:02:04 AM, 21 December 2020)

Total Marks: 1

In the synthesis and metabolism of carbohydrates, the intermediates are very often not the sugars themselves but their _____ derivatives.

Select the correct option

<input type="radio"/>	methylated	
<input type="radio"/>	oxidized	
<input type="radio"/>	carboxylated	
<input checked="" type="radio"/>	phosphorylated	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question



BIO202: Quiz 1

Quiz Start Time: 02:55 AM, 21 December 2020

Question # 10 of 10 (Start time: 03:02:38 AM, 21 December 2020)

Total Marks: 1

In the open-chain form of carbohydrates, one of the carbon atoms is double-bonded to an oxygen atom to form a _____.

Select the correct option

<input type="radio"/>	Carboxyl group	
<input type="radio"/>	Ketone group	
<input checked="" type="radio"/>	Carbonyl group	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Aldehyde group	

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Quiz 1

Quiz Start Time: 02:27 AM, 21 December 2020

Question # 1 of 10 (Start time: 02:27:15 AM, 21 December 2020)

Total Marks: 1

Glucose and galactose are epimers which differ in the configuration around carbon no. _____.

Select the correct option

<input checked="" type="radio"/>	4	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	
<input type="radio"/>	2		
<input type="radio"/>	1		
<input type="radio"/>	6		

Click to Save Answer & Move to Next Question



BIO202:Quiz 1

Quiz Start Time: 02:27 AM, 21 December 2020

Question # 2 of 10 (Start time: 02:28:13 AM, 21 December 2020)

Total Marks: 1

Crystalline derivatives of monosaccharides, formed from phenyl hydrazine are known as _____.

Select the correct option

<input type="radio"/>	Sugar	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	
<input checked="" type="radio"/>	Osazone		
<input type="radio"/>	Glucose		
<input type="radio"/>	Coke		

Click to Save Answer & Move to Next Question



EFFORT BY AMAAN KHAN

WU Medical Zone

BIO202:Quiz 1

Quiz Start Time: 02:27 AM, 21 December 2020

Question # 3 of 10 (Start time: 02:29:03 AM, 21 December 2020)

Total Marks: 1

When fructose and glucose are linked through glycosidic linkage, they form a disaccharide known as _____.

Select the correct option

<input type="radio"/>	maltose	
<input checked="" type="radio"/>	sucrose	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	lactose	
<input type="radio"/>	cellobiose	

Click to Save Answer & Move to Next Question



BIO202:Quiz 1

Quiz Start Time: 02:27 AM, 21 December 2020

Question # 4 of 10 (Start time: 02:29:25 AM, 21 December 2020)

Total Marks: 1

In the synthesis and metabolism of carbohydrates, the intermediates are very often not the sugars themselves but their _____ derivatives.

Select the correct option

<input type="radio"/>	methyalted	
<input type="radio"/>	oxidized	
<input type="radio"/>	carboxyalted	
<input checked="" type="radio"/>	phosphoryalted	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question



EFFORT BY AMAAN KHAN

WU Medical Zone

BIO202:Quiz 1

Quiz Start Time: 02:27 AM, 21 December 2020

Question # 5 of 10 (Start time: 02:29:58 AM, 21 December 2020)

Total Marks: 1

Isomeric forms of monosaccharides that differ only in their configuration about the hemiacetal or hemiketal carbon atom are called _____.

Select the correct option

- | | | | |
|----------------------------------|---------------|--|--|
| <input checked="" type="radio"/> | anomers | Answer Solved by Amaan Khan
Contact: 0305-4716616
Email: maniamaan2@gmail.com | |
| <input type="radio"/> | stereoisomers | | |
| <input type="radio"/> | epimers | | |
| <input type="radio"/> | enantiomers | | |

Click to Save Answer & Move to Next Question



BIO202:Quiz 1

Quiz Start Time: 02:27 AM, 21 December 2020

Question # 6 of 10 (Start time: 02:30:12 AM, 21 December 2020)

Total Marks: 1

Glucuronide is a soluble, non-toxic compound that is excreted in the urine. It is produced when _____ forms conjugates with toxic substances including drugs, hormones and bilirubin.

Select the correct option

- | | | | |
|----------------------------------|-----------------|--|--|
| <input type="radio"/> | glyceraldehyde | Answer Solved by Amaan Khan
Contact: 0305-4716616
Email: maniamaan2@gmail.com | |
| <input type="radio"/> | gluconic acid | | |
| <input type="radio"/> | glucose | | |
| <input checked="" type="radio"/> | glucuronic acid | | |

Click to Save Answer & Move to Next Question



EFFORT BY AMAAN KHAN

WU Medical Zone

BIO202: Quiz 1

Quiz Start Time: 02:27 AM, 21 December 2020

Question # 7 of 10 (Start time: 02:30:30 AM, 21 December 2020)

Total Marks: 1

The designation of a sugar isomer as the D form or as the L form is determined by its spatial relationship to the parent compound of the carbohydrates, which is _____.

Select the correct option

<input checked="" type="radio"/>	glyceraldehyde	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	
<input type="radio"/>	glucose		
<input type="radio"/>	glycerol		
<input type="radio"/>	glycogen		

Click to Save Answer & Move to Next Question



BIO202: Quiz 1

Quiz Start Time: 02:27 AM, 21 December 2020

Question # 8 of 10 (Start time: 02:30:47 AM, 21 December 2020)

Total Marks: 1

Carbohydrates are detected in the laboratory based upon certain properties. Benedict's test is routinely used to check for the presence of _____.

Select the correct option

<input checked="" type="radio"/>	reducing sugars	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	
<input type="radio"/>	polysaccharides		
<input type="radio"/>	ketohexoses		
<input type="radio"/>	aldopentoses		

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Quiz 1

Quiz Start Time: 02:27 AM, 21 December 2020

Question # 9 of 10 (Start time: 02:31:04 AM, 21 December 2020)

Total Marks: 1

The terminal methyl & _____ carbon of glucose, galactose, or mannose-forms the corresponding aldonic acid.

Select the correct option

<input type="radio"/>	Carboxyl	
<input type="radio"/>	Ketone	
<input type="radio"/>	Aldehyde	
<input checked="" type="radio"/>	Carbonyl	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question



BIO202:Quiz 1

Quiz Start Time: 02:27 AM, 21 December 2020

Question # 10 of 10 (Start time: 02:31:39 AM, 21 December 2020)

Total Marks: 1

In the open-chain form of carbohydrates, one of the carbon atoms is double-bonded to an oxygen atom to form a _____.

Select the correct option

<input type="radio"/>	Carboxyl group	
<input type="radio"/>	Ketone group	
<input checked="" type="radio"/>	Carbonyl group	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Aldehyde group	

Click to Save Answer & Move to Next Question



EFFORT BY AMAAN KHAN

WU Medical Zone

BIO202:Quiz 1

Quiz Start Time: 02:35 AM, 21 December 2020

Question # 1 of 10 (Start time: 02:35:26 AM, 21 December 2020)

Total Marks: 1

_____ is semi-quantitative test to detect presence of glucose in a solution.

Select the correct option

<input type="radio"/>	Molisch's test	
<input checked="" type="radio"/>	Benedict's test	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Ninhydrin test	
<input type="radio"/>	None of given	

Click to Save Answer & Move to Next Question



BIO202:Quiz 1

Quiz Start Time: 02:35 AM, 21 December 2020

Question # 2 of 10 (Start time: 02:36:27 AM, 21 December 2020)

Total Marks: 1

When the oxygen from the -OH group in a monosaccharide is removed, the resulting compound formed is known as _____.

Select the correct option

<input checked="" type="radio"/>	deoxy sugar	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	phospho sugar	
<input type="radio"/>	amino sugar	
<input type="radio"/>	carboxyl sugar	

Click to Save Answer & Move to Next Question



EFFORT BY AMAAN KHAN

WU Medical Zone

BIO202:Quiz 1

Quiz Start Time: 02:35 AM, 21 December 2020

Question # 3 of 10 (Start time: 02:37:29 AM, 21 December 2020)

Total Marks: 1

Maltosazone is the osazone formed from maltose. The characteristic feature of this osazone is its shape which resembles a _____.

Select the correct option

<input checked="" type="radio"/>	needle	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	
<input type="radio"/>	powder-puff		
<input type="radio"/>	sunflower		
<input type="radio"/>	pin-cushion		

Click to Save Answer & Move to Next Question



BIO202:Quiz 1

Quiz Start Time: 02:35 AM, 21 December 2020

Question # 4 of 10 (Start time: 02:38:25 AM, 21 December 2020)

Total Marks: 1

The condition in which the body fails to metabolize galactose is known as:

Select the correct option

<input checked="" type="radio"/>	galactosemia	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	
<input type="radio"/>	glucosuria		
<input type="radio"/>	diabetes mellitus		
<input type="radio"/>	hypoglycemia		

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Quiz 1

Quiz Start Time: 02:35 AM, 21 December 2020

Question # 5 of 10 (Start time: 02:38:56 AM, 21 December 2020)

Total Marks: 1

The oxidation of monosaccharides results in the production of either aldonic acids or uronic acids depending on the carbon atom oxidized. Both aldonic and uronic acids form stable intramolecular esters that are known as _____.

Select the correct option

<input checked="" type="radio"/>	lactones	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	furfurals	
<input type="radio"/>	aldoses	
<input type="radio"/>	carboxylates	

Click to Save Answer & Move to Next Question



BIO202:Quiz 1

Quiz Start Time: 02:35 AM, 21 December 2020

Question # 6 of 10 (Start time: 02:39:24 AM, 21 December 2020)

Total Marks: 1

In Benedict's test, The _____ are produced, which form red precipitate.

Select the correct option

<input type="radio"/>	Ferrous ions	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Ferric ions	
<input checked="" type="radio"/>	cuprous ion	
<input type="radio"/>	cupric ions	

Click to Save Answer & Move to Next Question



EFFORT BY AMAAN KHAN

WU Medical Zone

BIO202: Quiz 1

Quiz Start Time: 02:35 AM, 21 December 2020

Question # 7 of 10 (Start time: 02:39:51 AM, 21 December 2020)

Total Marks: 1

In the open-chain form of carbohydrates, one of the carbon atoms is double-bonded to an oxygen atom to form a _____.

Select the correct option

<input type="radio"/>	Carboxyl group	
<input type="radio"/>	Ketone group	
<input checked="" type="radio"/>	Carbonyl group	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Aldehyde group	

Click to Save Answer & Move to Next Question



BIO202: Quiz 1

Quiz Start Time: 02:35 AM, 21 December 2020

Question # 8 of 10 (Start time: 02:40:04 AM, 21 December 2020)

Total Marks: 1

Simplest carbohydrate is _____.

Select the correct option

<input type="radio"/>	Sucrose	
<input checked="" type="radio"/>	Glyceraldehyde	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Glucose	
<input type="radio"/>	Glycerine	

Click to Save Answer & Move to Next Question



EFFORT BY AMAAN KHAN

WU Medical Zone

BIO202:Quiz 1

Quiz Start Time: 02:35 AM, 21 December 2020

Question # 9 of 10 (Start time: 02:40:16 AM, 21 December 2020)

Total Marks: 1

If the carbonyl group is at an end of the carbon chain (that is, in an _____) the monosaccharide is an aldose.

Select the correct option

<input type="radio"/>	Carboxyl group	
<input type="radio"/>	Ketone group	
<input type="radio"/>	Carbonyl group	
<input checked="" type="radio"/>	Aldehyde group	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question



BIO202:Quiz 1

Quiz Start Time: 02:35 AM, 21 December 2020

Question # 10 of 10 (Start time: 02:40:35 AM, 21 December 2020)

Total Marks: 1

Sugars are classified on the basis of number of carbon atoms present. An example of a tetrose is:

Select the correct option

<input checked="" type="radio"/>	erythrose	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	glyceraldehyde	
<input type="radio"/>	ribose	
<input type="radio"/>	glucose	

Click to Save Answer & Move to Next Question



EFFORT BY AMAAN KHAN

WU Medical Zone

BIO202:Quiz 1

Quiz Start Time: 02:00 AM, 21 December 2020

Question # 1 of 10 (Start time: 02:00:30 AM, 21 December 2020)

Total Marks: 1

With reference to carbohydrate structure, which type of isomers have nearly identical chemical properties but differ in their interaction with plane-polarized light?

Select the correct option

<input checked="" type="radio"/>	enantiomers	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	
<input type="radio"/>	anomers		
<input type="radio"/>	epimers		
<input type="radio"/>	aldose-ketose isomerism		

Click to Save Answer & Move to Next Question



BIO202:Quiz 1

Quiz Start Time: 02:00 AM, 21 December 2020

Question # 2 of 10 (Start time: 02:01:18 AM, 21 December 2020)

Total Marks: 1

The substitution of a hydrogen for the hydroxyl group at C-6 of L-mannose produces _____.

Select the correct option

<input type="radio"/>	D-mannose	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	
<input type="radio"/>	L-glucose		
<input checked="" type="radio"/>	L-rhamnose		
<input type="radio"/>	L-mannosamine		

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Quiz 1

Quiz Start Time: 02:00 AM, 21 December 2020

Question # 3 of 10 (Start time: 02:02:11 AM, 21 December 2020)

Total Marks: 1

Different sugars are utilized in various ways in the human body and hence occur in varying amounts in body fluids. Which fluid is rich in fructose?

Select the correct option

<input checked="" type="radio"/>	seminal fluid	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	
<input type="radio"/>	blood		
<input type="radio"/>	tissue fluid		
<input type="radio"/>	cerebrospinal fluid		

Click to Save Answer & Move to Next Question



BIO202:Quiz 1

Quiz Start Time: 02:00 AM, 21 December 2020

Question # 4 of 10 (Start time: 02:03:29 AM, 21 December 2020)

Total Marks: 1

Carbohydrates are detected in the laboratory based upon certain properties. Benedict's test is routinely used to check for the presence of _____.

Select the correct option

<input checked="" type="radio"/>	reducing sugars	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	
<input type="radio"/>	polysaccharides		
<input type="radio"/>	ketohexoses		
<input type="radio"/>	aldopentoses		

Click to Save Answer & Move to Next Question



EFFORT BY AMAAN KHAN

WU Medical Zone

BIO202:Quiz 1

Quiz Start Time: 02:00 AM, 21 December 2020

Question # 5 of 10 (Start time: 02:04:11 AM, 21 December 2020)

Total Marks: 1

The designation of a sugar isomer as the D form or as the L form is determined by its spatial relationship to the parent compound of the carbohydrates, which is _____.

Select the correct option

- | | | | |
|----------------------------------|----------------|--|--|
| <input checked="" type="radio"/> | glyceraldehyde | Answer Solved by Amaan Khan
Contact: 0305-4716616
Email: maniamaan2@gmail.com | |
| <input type="radio"/> | glucose | | |
| <input type="radio"/> | glycerol | | |
| <input type="radio"/> | glycogen | | |

Click to Save Answer & Move to Next Question



BIO202:Quiz 1

Quiz Start Time: 02:00 AM, 21 December 2020

Question # 6 of 10 (Start time: 02:04:53 AM, 21 December 2020)

Total Marks: 1

If the carbonyl group is at an end of the carbon chain (that is, in an _____) the monosaccharide is an aldose.

Select the correct option

- | | | |
|----------------------------------|----------------|--|
| <input type="radio"/> | Carboxyl group | |
| <input type="radio"/> | Ketone group | |
| <input type="radio"/> | Carbonyl group | |
| <input checked="" type="radio"/> | Aldehyde group | Answer Solved by Amaan Khan
Contact: 0305-4716616
Email: maniamaan2@gmail.com |

Click to Save Answer & Move to Next Question



WU Medical Zone

MC200203320: UME FARWA

BIO202: Quiz 1

Time Left 53 sec(s)

Quiz Start Time: 02:00 AM, 21 December 2020

Question # 7 of 10 (Start time: 02:05:36 AM, 21 December 2020)

Total Marks: 1

Maltosazone is the osazone formed from maltose. The characteristic feature of this osazone is its shape which resembles a _____.

Select the correct option

<input checked="" type="radio"/>	needle	/
<input type="radio"/>	powder-puff	/
<input type="radio"/>	sunflower	/
<input type="radio"/>	pin-cushion	/

Click to Save Answer & Move to Next Question



BIO202: Quiz 1

Quiz Start Time: 02:00 AM, 21 December 2020

Question # 8 of 10 (Start time: 02:06:38 AM, 21 December 2020)

Total Marks: 1

In the open-chain form of carbohydrates, one of the carbon atoms is double-bonded to an oxygen atom to form a _____.

Select the correct option

<input type="radio"/>	Carboxyl group	/
<input type="radio"/>	Ketone group	/
<input checked="" type="radio"/>	Carbonyl group	/
<input type="radio"/>	Aldehyde group	/

Answer Solved by Amaan Khan
Contact: 0305-4716616
Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question



WU Medical Zone

BIO202:Quiz 1

Quiz Start Time: 02:00 AM, 21 December 2020

Question # 9 of 10 (Start time: 02:07:13 AM, 21 December 2020)

Total Marks: 1

Both glycogen and cellulose are made up of glucose subunits. However, while glycogen is _____, cellulose exists in the form of _____.

Select the correct option

<input type="radio"/>	polysaccharide, disaccharide	
<input checked="" type="radio"/>	branched, linear chains	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	linear chains, branched	
<input type="radio"/>	disaccharide, polysaccharide	

Click to Save Answer & Move to Next Question



BIO202:Quiz 1

Quiz Start Time: 02:00 AM, 21 December 2020

Question # 10 of 10 (Start time: 02:08:18 AM, 21 December 2020)

Total Marks: 1

Sugars are classified on the basis of number of carbon atoms present. An example of a tetrose is:

Select the correct option

<input checked="" type="radio"/>	erythrose	Answer Solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	glyceraldehyde	
<input type="radio"/>	ribose	
<input type="radio"/>	glucose	

Click to Save Answer & Move to Next Question



EFFORT BY AMAAN KHAN

VU Medical Zone

BIO 202 Quiz no 2 Fall 2020 Updated

BIO202:Quiz no. 3

Time: 00:00 sec(s)
Quiz Start Time: 12:27 AM, 23 February 2021

Question # 1 of 10 (Start time: 12:27:26 AM, 23 February 2021)

Total Marks: 1

The DNA oligonucleotide abbreviated pATCGAC:

Select the correct option

<input type="radio"/>	has seven phosphate groups.	
<input checked="" type="radio"/>	has a hydroxyl at its 3' end.	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	has a phosphate on its 3' end.	
<input type="radio"/>	has an A at its 3' end.	

Click to Save Answer & Move to Next Question



BIO202:Quiz no. 3

Time: 00:00 sec(s)
Quiz Start Time: 12:27 AM, 23 February 2021

Question # 2 of 10 (Start time: 12:29:52 AM, 23 February 2021)

Total Marks: 1

In living cells, nucleotides and their derivatives can serve as:

Select the correct option

<input type="radio"/>	carriers of metabolic energy.	
<input type="radio"/>	enzyme cofactors.	
<input type="radio"/>	intracellular signals.	
<input checked="" type="radio"/>	all of the above	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question



Effort By Amaan Khan

VU Medical Zone

BIO202:Quiz no. 3

Quiz Start Time: 12:27 AM, 23 February 2021

Question # 3 of 10 (Start time: 12:31:21 AM, 23 February 2021)

Total Marks: 1

S-adenosylmethionine is agroup donor

Select the correct option

<input checked="" type="radio"/>	Methyl	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Phosphate	
<input type="radio"/>	Adenosine	
<input type="radio"/>	Sulfate	

Click to Save Answer & Move to Next Question

13 Hours remaining

Quiz - Google Chr...

12:31 AM 2/23/2021

BIO202:Quiz no. 3

Quiz Start Time: 12:27 AM, 23 February 2021

Question # 4 of 10 (Start time: 12:32:01 AM, 23 February 2021)

Total Marks: 1

Which one is example of coenzymes

Select the correct option

<input type="radio"/>	FAD	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	NAD+	
<input type="radio"/>	NADP+	
<input checked="" type="radio"/>	All	

Click to Save Answer & Move to Next Question

13 Hours remaining

Quiz - Google Chr...

12:32 AM 2/23/2021

Effort By Amaan Khan

VU Medical Zone

BIO202:Quiz no. 3

Quiz Start Time: 12:27 AM, 23 February 2021

Question # 5 of 10 (Start time: 12:32:32 AM, 23 February 2021)

Total Marks: 1

ATP is a

Select the correct option

<input type="radio"/>	nucleoside	
<input checked="" type="radio"/>	nucleotide	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	vitamin	
<input type="radio"/>	nucleic acid	

Click to Save Answer & Move to Next Question

13 Hours remaining

Quiz - Google Chr...

12:32 AM 2/23/2021

BIO202:Quiz no. 3

Quiz Start Time: 12:27 AM, 23 February 2021

Question # 6 of 10 (Start time: 12:32:45 AM, 23 February 2021)

Total Marks: 1

There are ----- classes of histones

Select the correct option

<input type="radio"/>	3	
<input checked="" type="radio"/>	5	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	7	
<input type="radio"/>	9	

Click to Save Answer & Move to Next Question

2 Hours and 5 Mi...

Quiz - Google Chr...

12:33 AM 2/23/2021

Effort By Amaan Khan

VU Medical Zone

BIO202:Quiz no. 3

Quiz Start Time: 12:27 AM, 23 February 2021

Question # 7 of 10 (Start time: 12:33:58 AM, 23 February 2021)

Total Marks: 1

single-stranded DNA has a----- relative absorbance at 260nm wavelength than does double-stranded DNA.

Select the correct option

<input type="radio"/>	lower	
<input checked="" type="radio"/>	higher	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	equal	
<input type="radio"/>	none	



Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Internet Explorer, Google Chrome, and a timer set to 2 Hours and 5 Minutes. The system clock shows 12:35 AM on 2/23/2021.

BIO202:Quiz no. 3

Quiz Start Time: 12:27 AM, 23 February 2021

Question # 8 of 10 (Start time: 12:35:24 AM, 23 February 2021)

Total Marks: 1

Separation of the two strands of the double helix when ----- bonds between the paired bases are disrupted.

Select the correct option

<input type="radio"/>	phosphodiester	
<input checked="" type="radio"/>	hydrogen	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	glycosilic bond	
<input type="radio"/>	none of the above	

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Internet Explorer, Google Chrome, and a timer set to 2 Hours and 5 Minutes. The system clock shows 12:35 AM on 2/23/2021.

Effort By Amaan Khan

VU Medical Zone

BIO202:Quiz no. 3

Quiz Start Time: 12:27 AM, 23 February 2021

Question # 9 of 10 (Start time: 12:35:56 AM, 23 February 2021)

Total Marks: 1

Find the correct statement about phosphodiester linkage between adjacent nucleotides in nucleic acids

Select the correct option

<input type="radio"/>	3'-phosphate of one nucleotide joins the 3'-hydroxyl of the next nucleotide	
<input type="radio"/>	3'-phosphate of one nucleotide joins the 5'-hydroxyl of the next nucleotide	
<input type="radio"/>	5'-phosphate of one nucleotide joins the 5'-hydroxyl of the next nucleotide	
<input checked="" type="radio"/>	5'-phosphate of one nucleotide joins the 3'-hydroxyl of the next nucleotide	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com



Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Start, 30 Minutes remain..., Task View, Edge, and Quiz - Google Chr... The system clock shows 12:37 AM on 2/23/2021.

BIO202:Quiz no. 3

Quiz Start Time: 12:27 AM, 23 February 2021

Question # 10 of 10 (Start time: 12:37:36 AM, 23 February 2021)

Total Marks: 1

According to Chargaff's Rules
which one is not correct

Select the correct option

<input type="radio"/>	adenine equals the amount of thymine.	
<input type="radio"/>	guanine equals the amount of cytosine	
<input type="radio"/>	total amount of purines equals the total amount of pyrimidines	
<input checked="" type="radio"/>	guanine equals the amount of thymine	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Start, 21 Minutes remain..., Task View, Edge, and Quiz - Google Chr... The system clock shows 12:38 AM on 2/23/2021.

Effort By Amaan Khan

VU Medical Zone

BIO202:Quiz no. 3

Quiz Start Time: 12:45 AM, 23 February 2021

Question # 1 of 10 (Start time: 12:45:43 AM, 23 February 2021)

Total Marks: 1

higher GC base pairs increases T_m , because , with three hydrogen bonds, require-----heat energy to dissociate than AT base pairs.

Select the correct option

<input type="radio"/>	less	
<input checked="" type="radio"/>	more	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	equal	
<input type="radio"/>	none of the above	

Click to Save Answer & Move to Next Question



BIO202:Quiz no. 3

Quiz Start Time: 12:45 AM, 23 February 2021

Question # 2 of 10 (Start time: 12:46:25 AM, 23 February 2021)

Total Marks: 1

Chromatin is composed of

Select the correct option

<input checked="" type="radio"/>	nucleic acids and protein	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	nucleic acids only	
<input type="radio"/>	proteins only	
<input type="radio"/>	none of these	

Click to Save Answer & Move to Next Question



Effort By Amaan Khan

VU Medical Zone

BIO202-Quiz no. 3

Quiz Start Time: 12:45 AM, 23 February 2021

Question # 3 of 10 (Start time: 12:46:56 AM, 23 February 2021)

Total Marks: 1

Which one is example of coenzymes

Select the correct option

<input type="radio"/>	FAD	
<input type="radio"/>	NAD+	
<input type="radio"/>	NADP+	
<input checked="" type="radio"/>	All	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for 35 Minutes remain..., Quiz - Google Chr..., and system clock 12:47 AM 2/23/2021.

BIO202-Quiz no. 3

Quiz Start Time: 12:45 AM, 23 February 2021

Question # 4 of 10 (Start time: 12:47:06 AM, 23 February 2021)

Total Marks: 1

The sugar molecule present in nucleotide is

Select the correct option

<input type="radio"/>	Triose	
<input type="radio"/>	Tetrose	
<input checked="" type="radio"/>	Pentose	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Hexose	

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for 35 Minutes remain..., Quiz - Google Chr..., and system clock 12:47 AM 2/23/2021.

Effort By Amaan Khan

VU Medical Zone

BIO202:Quiz no. 3

Quiz Start Time: 12:45 AM, 23 February 2021

Question # 5 of 10 (Start time: 12:47:18 AM, 23 February 2021)

Total Marks: 1

Eukaryotic DNA is associated with tightly bound basic -----, called histones.

Select the correct option

<input type="radio"/>	lipid	
<input checked="" type="radio"/>	proteins	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	carbohydrates	
<input type="radio"/>	nucleic acid	

Click to Save Answer & Move to Next Question



BIO202:Quiz no. 3

Quiz Start Time: 12:45 AM, 23 February 2021

Question # 6 of 10 (Start time: 12:47:48 AM, 23 February 2021)

Total Marks: 1

When DNA is heated, the temperature at which ----- of the helical structure is lost is defined as the melting temperature.

Select the correct option

<input checked="" type="radio"/>	one half	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	two half	
<input type="radio"/>	three half	
<input type="radio"/>	complete	

Click to Save Answer & Move to Next Question



Effort By Amaan Khan

VU Medical Zone

BIO202:Quiz no. 3

Quiz Start Time: 12:45 AM, 23 February 2021

Question # 7 of 10 (Start time: 12:48:15 AM, 23 February 2021)

Total Marks: 1

Z-DNA have a

Select the correct option

<input checked="" type="radio"/>	Zig-Zag apperance	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Double helical nature	
<input type="radio"/>	uracil base	
<input type="radio"/>	single stranded nature	

Click to Save Answer & Move to Next Question

Windows taskbar showing system clock (12:48 AM, 2/23/2021), network, and volume icons. Open applications include 25 Minutes remai..., a video player, and Google Chrome with the Quiz.

BIO202:Quiz no. 3

Quiz Start Time: 12:45 AM, 23 February 2021

Question # 8 of 10 (Start time: 12:49:04 AM, 23 February 2021)

Total Marks: 1

Separation of the two strands of the double helix when ----- bonds between the paired bases are disrupted.

Select the correct option

<input type="radio"/>	phosphodiester	
<input checked="" type="radio"/>	hydrogen	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	glycosilic bond	
<input type="radio"/>	none of the above	

Click to Save Answer & Move to Next Question

Windows taskbar showing system clock (12:49 AM, 2/23/2021), network, and volume icons. Open applications include 25 Minutes remai..., a video player, and Google Chrome with the Quiz.

Effort By Amaan Khan

VU Medical Zone

BIO202:Quiz no. 3

Quiz Start Time: 12:45 AM, 23 February 2021

Question # 9 of 10 (Start time: 12:49:15 AM, 23 February 2021)

Total Marks: 1

RNA duplexes are ----- stable than DNA duplexes.

Select the correct option

<input checked="" type="radio"/>	more	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	/
<input type="radio"/>	less		/
<input type="radio"/>	equal		/
<input type="radio"/>	none of the above		/

Click to Save Answer & Move to Next Question

Windows taskbar showing system clock at 12:49 AM, 2/23/2021, and active applications including a timer (25 Minutes remain...), VLC media player, and Google Chrome (Quiz - Google Chr...).

BIO202:Quiz no. 3

Quiz Start Time: 12:45 AM, 23 February 2021

Question # 10 of 10 (Start time: 12:49:41 AM, 23 February 2021)

Total Marks: 1

The -----strand is called Template strand while

Select the correct option

<input type="radio"/>	5'-3'		/
<input checked="" type="radio"/>	3'-5'	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	/
<input type="radio"/>	3'-3'		/
<input type="radio"/>	5'-5'		/

Click to Save Answer & Move to Next Question

Windows taskbar showing system clock at 12:50 AM, 2/23/2021, and active applications including a timer (25 Minutes remain...), VLC media player, and Google Chrome (Quiz - Google Chr...).

Effort By Amaan Khan

VU Medical Zone

BIO202:Quiz no. 3

Quiz Start Time: 12:54 AM, 23 February 2021

Question # 1 of 10 (Start time: 12:54:07 AM, 23 February 2021)

Total Marks: 1

DNA replication is

Select the correct option

<input type="radio"/>	Conservative	
<input type="radio"/>	Non-conservative	
<input checked="" type="radio"/>	Semi-conservative	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	None	

Click to Save Answer & Move to Next Question



BIO202:Quiz no. 3

Quiz Start Time: 12:54 AM, 23 February 2021

Question # 2 of 10 (Start time: 12:55:38 AM, 23 February 2021)

Total Marks: 1

Nucleotides are composed of

<input type="radio"/>	A nitrogenous base (purine or pyrimidine)	
<input type="radio"/>	A pentose monosaccharide	
<input type="radio"/>	One, two, or three phosphate groups	
<input checked="" type="radio"/>	All	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question



Effort By Amaan Khan

VU Medical Zone

BIO202:Quiz no. 3

Quiz Start Time: 12:54 AM, 23 February 2021

Question # 3 of 10 (Start time: 12:55:55 AM, 23 February 2021)

Total Marks: 1

Eukaryotic DNA is associated with tightly bound basic -----, called histones.

Select the correct option

<input type="radio"/>	lipid	
<input checked="" type="radio"/>	proteins	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	carbohydrates	
<input type="radio"/>	nucleic acid	

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Internet Explorer, Google Chrome, and other applications. The system clock shows 12:55 AM on 2/23/2021.

BIO202:Quiz no. 3

Quiz Start Time: 12:54 AM, 23 February 2021

Question # 4 of 10 (Start time: 12:56:04 AM, 23 February 2021)

Total Marks: 1

According to Chargaff's Rules
which one is not correct

Select the correct option

<input type="radio"/>	adenine equals the amount of thymine.	
<input type="radio"/>	guanine equals the amount of cytosine	
<input type="radio"/>	total amount of purines equals the total amount of pyrimidines	
<input checked="" type="radio"/>	guanine equals the amount of thymine	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Internet Explorer, Google Chrome, and other applications. The system clock shows 12:56 AM on 2/23/2021.

Effort By Amaan Khan

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BIO202:Quiz no. 3

Quiz Start Time: 12:54 AM, 23 February 2021

Question # 5 of 10 (Start time: 12:56:14 AM, 23 February 2021)

Total Marks: 1

Nucleosomes can be packed more tightly to form a polynucleosome also called a nucleofilament or a -----nm fiber.

Select the correct option

<input type="radio"/>	10	
<input checked="" type="radio"/>	30	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	50	
<input type="radio"/>	100	

Click to Save Answer & Move to Next Question



BIO202:Quiz no. 3

Quiz Start Time: 12:54 AM, 23 February 2021

Question # 6 of 10 (Start time: 12:56:39 AM, 23 February 2021)

Total Marks: 1

Nucleoside contains

Select the correct option

<input checked="" type="radio"/>	base-sugar	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	base-phosphate	
<input type="radio"/>	base-sugar-phosphate	
<input type="radio"/>	sugar-phosphate	

Click to Save Answer & Move to Next Question



Effort By Amaan Khan

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BIO202:Quiz no. 3

Quiz Start Time: 12:54 AM, 23 February 2021

Question # 7 of 10 (Start time: 12:56:55 AM, 23 February 2021)

Total Marks: 1

The difference between thymine and uracil is:

Select the correct option

<input type="radio"/>	one methylene group on the pyrimidine ring	
<input checked="" type="radio"/>	one methyl group on the pyrimidine ring.	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	one hydroxyl group on the ribose ring.	
<input type="radio"/>	one amine group on the pyrimidine ring.	

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Internet Explorer, Google Chrome, and other applications. The system clock displays 12:58 AM on 2/23/2021.

BIO202:Quiz no. 3

Quiz Start Time: 12:54 AM, 23 February 2021

Question # 8 of 10 (Start time: 12:58:52 AM, 23 February 2021)

Total Marks: 1

In a double-stranded nucleic acid, cytosine typically base-pairs with:

Select the correct option

<input type="radio"/>	Adenosine.	
<input checked="" type="radio"/>	Guanine.	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Inosine.	
<input type="radio"/>	Thymine.	

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Internet Explorer, Google Chrome, and other applications. The system clock displays 12:59 AM on 2/23/2021.

Effort By Amaan Khan

VU Medical Zone

BIO202:Quiz no. 3

Quiz Start Time: 12:54 AM, 23 February 2021

Question # 9 of 10 (Start time: 12:59:13 AM, 23 February 2021)

Total Marks: 1

When DNA is heated, the temperature at which of the helical structure is lost is defined as the melting temperature.

Select the correct option

<input checked="" type="radio"/>	one half	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	
<input type="radio"/>	two half		
<input type="radio"/>	three half		
<input type="radio"/>	complete		

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Internet Explorer, Google Chrome, and other applications. The system clock displays 12:59 AM on 2/23/2021.

BIO202:Quiz no. 3

Quiz Start Time: 12:54 AM, 23 February 2021

Question # 10 of 10 (Start time: 12:59:24 AM, 23 February 2021)

Total Marks: 1

RNA duplexes are stable than DNA duplexes.

Select the correct option

<input checked="" type="radio"/>	more	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	
<input type="radio"/>	less		
<input type="radio"/>	equal		
<input type="radio"/>	none of the above		

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Internet Explorer, Google Chrome, and other applications. The system clock displays 12:59 AM on 2/23/2021.

Effort By Amaan Khan

VU Medical Zone

BIO202:Quiz no. 3

Quiz Start Time: 01:30 AM, 23 February 2021

Question # 1 of 10 (Start time: 01:30:41 AM, 23 February 2021)

Total Marks: 1

Disruption of DNA can occur in the laboratory with alteration in

Select the correct option

<input type="radio"/>	PH	
<input type="radio"/>	salt concentration	
<input type="radio"/>	heated above 80°C	
<input checked="" type="radio"/>	All of the above	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question

The image shows a Windows taskbar with several icons: a clock showing 1:30 AM, a taskbar with icons for a folder, a play button, and a Google Chrome browser window titled 'Quiz - Google Chr...'. The system tray on the right shows network, volume, and power icons, along with the date 2/23/2021.

BIO202:Quiz no. 3

Quiz Start Time: 01:30 AM, 23 February 2021

Question # 2 of 10 (Start time: 01:31:26 AM, 23 February 2021)

Total Marks: 1

Any regular, stable structure taken up by some or all of the nucleotides in a nucleic acid can be referred to as

Select the correct option

<input type="radio"/>	primary structure	
<input checked="" type="radio"/>	secondary structure	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	tertiary structure	
<input type="radio"/>	all of above	

Click to Save Answer & Move to Next Question

The image shows a Windows taskbar with several icons: a clock showing 1:31 AM, a taskbar with icons for a folder, a play button, and a Google Chrome browser window titled 'Quiz - Google Chr...'. The system tray on the right shows network, volume, and power icons, along with the date 2/23/2021.

Effort By Amaan Khan

VU Medical Zone

BIO202:Quiz no. 3

sec(s)
Quiz Start Time: 01:30 AM, 23 February 2021

Question # 3 of 10 (Start time: 01:31:58 AM, 23 February 2021)

Total Marks: 1

Nucleic acids are a polymer of nucleotide monomeric units. Each nucleotide consists of

Select the correct option

<input type="radio"/>	base--sugar--OH	
<input type="radio"/>	sugar--phosphate	
<input checked="" type="radio"/>	base--sugar--phosphate	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	sugar--OH	

Click to Save Answer & Move to Next Question

29 Minutes remai... Quiz - Google Chr... 1:32 AM 2/23/2021

BIO202:Quiz no. 3

sec(s)
Quiz Start Time: 01:30 AM, 23 February 2021

Question # 4 of 10 (Start time: 01:32:15 AM, 23 February 2021)

Total Marks: 1

The DNA wrapped around the nucleosome core is continuous and joins one nucleosome core to the next -the linker DNA this 50 bp DNA is complexed with the fifth type of histone, -----

Select the correct option

<input checked="" type="radio"/>	H1	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	H2A, H2B,	
<input type="radio"/>	H3,	
<input type="radio"/>	H4	

Click to Save Answer & Move to Next Question

29 Minutes remai... Quiz - Google Chr... 1:32 AM 2/23/2021

Effort By Amaan Khan

VU Medical Zone

BIO202:Quiz no. 3

sec(s)
Quiz Start Time: 01:30 AM, 23 February 2021

Question # 5 of 10 (Start time: 01:32:48 AM, 23 February 2021)

Total Marks: 1

The phosphodiester bonds that link adjacent nucleotides in both RNA and DNA:

Select the correct option

<input type="radio"/>	always link A with T and G with C.	
<input type="radio"/>	are susceptible to alkaline hydrolysis.	
<input checked="" type="radio"/>	form between the planar rings of adjacent bases.	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	join the 3' hydroxyl of one nucleotide to the 5' hydroxyl of the next.	



Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Internet Explorer, Google Chrome, and a timer. The timer displays "35 Minutes remai..." and "1:34 AM 2/23/2021".

BIO202:Quiz no. 3

sec(s)
Quiz Start Time: 01:30 AM, 23 February 2021

Question # 6 of 10 (Start time: 01:34:35 AM, 23 February 2021)

Total Marks: 1

DNA that is not copied during the synthesis of mRNA is also called as

Select the correct option

<input checked="" type="radio"/>	Non Template	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	coding strand	
<input type="radio"/>	mRNA-like strand	
<input type="radio"/>	all of above	

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Internet Explorer, Google Chrome, and a timer. The timer displays "35 Minutes remai..." and "1:35 AM 2/23/2021".

Effort By Amaan Khan

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BIO202:Quiz no. 3

Time Left: 00:00:00
Quiz Start Time: 01:30 AM, 23 February 2021

Question # 7 of 10 (Start time: 01:35:37 AM, 23 February 2021)

Total Marks: 1

higher GC base pairs increases T_m , because , with three hydrogen bonds, require-----heat energy to dissociate than AT base pairs.

Select the correct option

<input type="radio"/>	less	
<input checked="" type="radio"/>	more	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	equal	
<input type="radio"/>	none of the above	

Click to Save Answer & Move to Next Question

Windows taskbar showing 35 Minutes remaining, icons for applications, and system clock showing 1:35 AM on 2/23/2021.

BIO202:Quiz no. 3

Quiz Start Time: 01:30 AM, 23 February 2021

Question # 8 of 10 (Start time: 01:35:58 AM, 23 February 2021)

Total Marks: 1

The sugar molecule present in nucleotide is

Select the correct option

<input type="radio"/>	Triose	
<input type="radio"/>	Tetrose	
<input checked="" type="radio"/>	Pentose	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Hexose	

Click to Save Answer & Move to Next Question

Windows taskbar showing 35 Minutes remaining, icons for applications, and system clock showing 1:36 AM on 2/23/2021.

Effort By Amaan Khan

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BIO202:Quiz no. 3

Quiz Start Time: 01:30 AM, 23 February 2021

Question # 9 of 10 (Start time: 01:36:17 AM, 23 February 2021)

Total Marks: 1

ATP is a

Select the correct option

<input type="radio"/>	nucleoside	
<input checked="" type="radio"/>	nucleotide	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	vitamin	
<input type="radio"/>	nucleic acid	

Click to Save Answer & Move to Next Question



BIO202:Quiz no. 3

Quiz Start Time: 01:30 AM, 23 February 2021

Question # 10 of 10 (Start time: 01:36:33 AM, 23 February 2021)

Total Marks: 1

The Tm of DNA is influenced by

Select the correct option

<input type="radio"/>	higher the content of GC base pairs	
<input type="radio"/>	base composition of the DNA	
<input type="radio"/>	salt concentration of the solution	
<input checked="" type="radio"/>	all of above	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question



Effort By Amaan Khan

VU Medical Zone

BIO202:Quiz no. 3

Quiz Start Time: 01:49 AM, 23 February 2021

Question # 1 of 10 (Start time: 01:49:27 AM, 23 February 2021)

Total Marks: 1

Purine base found in RNA is

Select the correct option

<input type="radio"/>	Cytosine	
<input type="radio"/>	Thymine	
<input checked="" type="radio"/>	Guanine	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Uracil	

Click to Save Answer & Move to Next Question

BIO 202 Quiz no 2....pdf

Show all

BIO202:Quiz no. 3

Quiz Start Time: 01:49 AM, 23 February 2021

Question # 2 of 10 (Start time: 01:50:15 AM, 23 February 2021)

Total Marks: 1

Compounds that generate nitrous acid (such as nitrites, nitrates, and nitrosamines) change DNA molecules by:

Select the correct option

<input checked="" type="radio"/>	Breakage of phosphodiester bonds.	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Deamination of bases.	
<input type="radio"/>	Depurination.	
<input type="radio"/>	Formation of thymine dimers	

Click to Save Answer & Move to Next Question

BIO 202 Quiz no 2....pdf

Show all

Effort By Amaan Khan

VU Medical Zone

BIO202:Quiz no. 3

Quiz Start Time: 01:49 AM, 23 February 2021

Question # 3 of 10 (Start time: 01:51:18 AM, 23 February 2021)

Total Marks: 1

Under appropriate conditions DNA will form a hybrid with a complementary -----

Select the correct option

<input type="radio"/>	DNA	
<input type="radio"/>	RNA	
<input checked="" type="radio"/>	Both	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	None	

Click to Save Answer & Move to Next Question

BIO 202 Quiz no 2....pdf

Show all

BIO202:Quiz no. 3

Quiz Start Time: 01:49 AM, 23 February 2021

Question # 4 of 10 (Start time: 01:51:51 AM, 23 February 2021)

Total Marks: 1

DNA model was presented by Watson and Crick in -----

Select the correct option

<input type="radio"/>	1951	
<input checked="" type="radio"/>	1953	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	1955	
<input type="radio"/>	1957	

Click to Save Answer & Move to Next Question

BIO 202 Quiz no 2....pdf

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Effort By Amaan Khan

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BIO202:Quiz no. 3

Quiz Start Time: 01:49 AM, 23 February 2021

Question # 5 of 10 (Start time: 01:52:09 AM, 23 February 2021)

Total Marks: 1

Around structural core of the nucleosome, a segment of the DNA double helix is wound nearly twice-approximately -----

Select the correct option

<input type="radio"/>	100bp	
<input type="radio"/>	120bp	
<input checked="" type="radio"/>	140bp	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	160bp	

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Internet Explorer, Google Chrome, and other applications. The system clock shows 1:52 AM on 2/23/2021.

BIO202:Quiz no. 3

Quiz Start Time: 01:49 AM, 23 February 2021

Question # 6 of 10 (Start time: 01:52:38 AM, 23 February 2021)

Total Marks: 1

In living cells, nucleotides and their derivatives can serve as:

<input type="radio"/>	carriers of metabolic energy.	
<input type="radio"/>	enzyme cofactors.	
<input type="radio"/>	intracellular signals.	
<input checked="" type="radio"/>	all of the above	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Internet Explorer, Google Chrome, and other applications. The system clock shows 1:52 AM on 2/23/2021.

Effort By Amaan Khan

VU Medical Zone

BIO202:Quiz no. 3

Quiz Start Time: 01:49 AM, 23 February 2021

Question # 7 of 10 (Start time: 01:52:54 AM, 23 February 2021)

Total Marks: 1

Adenosine 3'-phosphate-5'-phosphosulfate is the -----donor

Select the correct option

<input checked="" type="radio"/>	Sulfate	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	/
<input type="radio"/>	Phosphate		/
<input type="radio"/>	Adenosine		/
<input type="radio"/>	None		/

Click to Save Answer & Move to Next Question



BIO202:Quiz no. 3

Quiz Start Time: 01:49 AM, 23 February 2021

Question # 8 of 10 (Start time: 01:53:29 AM, 23 February 2021)

Total Marks: 1

Nucleotides are composed of

Select the correct option

<input type="radio"/>	A nitrogenous base (purine or pyrimidine)	/	
<input type="radio"/>	A pentose monosaccharide	/	
<input type="radio"/>	One, two, or three phosphate groups	/	
<input checked="" type="radio"/>	All	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	/

Click to Save Answer & Move to Next Question



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BIO202:Quiz no. 3

Quiz Start Time: 01:49 AM, 23 February 2021

Question # 9 of 10 (Start time: 01:53:58 AM, 23 February 2021)

Total Marks: 1

A short length of DNA molecule has 80 thymine and 80 guanine bases. The total number of nucleotide in the DNA fragment is

Select the correct option

<input type="radio"/>	160	
<input type="radio"/>	40	
<input checked="" type="radio"/>	320	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	640	

Click to Save Answer & Move to Next Question



BIO202:Quiz no. 3

Quiz Start Time: 01:49 AM, 23 February 2021

Question # 10 of 10 (Start time: 01:54:36 AM, 23 February 2021)

Total Marks: 1

Which of the following is a palindromic sequence?

Select the correct option

<input type="radio"/>	AGGTCC TCCAGG	
<input type="radio"/>	CCTTCC GCAAGG	
<input type="radio"/>	GAATCC CTTAGG	
<input checked="" type="radio"/>	GGATCC CCTAGG	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question



Effort By Amaan Khan

VU Medical Zone

BIO202:Quiz no. 3

Quiz Start Time: 12:11 PM, 23 February 2021

Question # 1 of 10 (Start time: 12:11:08 PM, 23 February 2021)

Total Marks: 1

The complex folding of large chromosomes within eukaryotic chromatin and bacterial nucleoids is generally considered -----

Select the correct option

<input type="radio"/>	primary structure	
<input type="radio"/>	secondary structure	
<input checked="" type="radio"/>	tertiary structure	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	all of the above	

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Internet Explorer, Google Chrome, and other applications. The system clock displays 12:11 PM on 2/23/2021.

BIO202:Quiz no. 3

Quiz Start Time: 12:11 PM, 23 February 2021

Question # 2 of 10 (Start time: 12:11:40 PM, 23 February 2021)

Total Marks: 1

Certain anticancer drugs, exert their cytotoxic effect by intercalating into the ----- groove of the DNA double helix, thus interfering with RNA and DNA synthesis

Select the correct option

<input checked="" type="radio"/>	narrow	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	major	
<input type="radio"/>	phosphate backbone	
<input type="radio"/>	bases	

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Internet Explorer, Google Chrome, and other applications. The system clock displays 12:12 PM on 2/23/2021.

Effort By Amaan Khan

VU Medical Zone

BIO202:Quiz no. 3

Quiz Start Time: 12:11 PM, 23 February 2021

Question # 3 of 10 (Start time: 12:12:14 PM, 23 February 2021)

Total Marks: 1

When linked to vitamins nucleotides are structural components of several essential coenzymes, for example,

Select the correct option

<input checked="" type="radio"/>	coenzyme A	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	/
<input type="radio"/>	coenzyme B		/
<input type="radio"/>	coenzyme C		/
<input type="radio"/>	coenzyme D		/

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Internet Explorer, File Explorer, and Google Chrome. The active window is "Quiz - Google Chr...". The system clock shows 12:12 PM on 2/23/2021.

BIO202:Quiz no. 3

Quiz Start Time: 12:11 PM, 23 February 2021

Question # 4 of 10 (Start time: 12:12:24 PM, 23 February 2021)

Total Marks: 1

The "energy carrier" ATP is an example of a(n):

Select the correct option

<input checked="" type="radio"/>	deoxyribonucleoside triphosphate	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	/
<input type="radio"/>	di-nucleotide		/
<input type="radio"/>	ribonucleotide		/
<input type="radio"/>	ribonucleoside triphosphate		/



Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Internet Explorer, File Explorer, and Google Chrome. The active window is "Quiz - Google Chr...". The system clock shows 12:13 PM on 2/23/2021.

Effort By Amaan Khan

VU Medical Zone

BIO202:Quiz no. 3

Quiz Start Time: 12:11 PM, 23 February 2021

Question # 5 of 10 (Start time: 12:13:50 PM, 23 February 2021)

Total Marks: 1

The -----strand is called Template strand while

Select the correct option

<input type="radio"/>	5'-3'	
<input checked="" type="radio"/>	3'-5'	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	3'-3'	
<input type="radio"/>	5'-5'	

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Internet Explorer, Google Chrome, and other applications. The system clock displays 12:14 PM on 2/23/2021.

BIO202:Quiz no. 3

Quiz Start Time: 12:11 PM, 23 February 2021

Question # 6 of 10 (Start time: 12:14:25 PM, 23 February 2021)

Total Marks: 1

Nucleotides also serve as carriers of activated intermediates in the synthesis of -----

Select the correct option

<input type="radio"/>	Carbohydrates	
<input type="radio"/>	Lipids	
<input type="radio"/>	Proteins	
<input checked="" type="radio"/>	All	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Internet Explorer, Google Chrome, and other applications. The system clock displays 12:14 PM on 2/23/2021.

Effort By Amaan Khan

VU Medical Zone

BIO202:Quiz no. 3

Quiz Start Time: 12:11 PM, 23 February 2021

Question # 7 of 10 (Start time: 12:14:49 PM, 23 February 2021)

Total Marks: 1

These----- bonds, plus the van der Waals and hydrophobic interactions between the adjacent stacked bases, stabilize the structure of the double helix.

Select the correct option

<input type="radio"/>	phosphodiester	
<input type="radio"/>	nitrogen	
<input checked="" type="radio"/>	hydrogen	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	none of the above	

Click to Save Answer & Move to Next Question



BIO202:Quiz no. 3

Quiz Start Time: 12:11 PM, 23 February 2021

Question # 8 of 10 (Start time: 12:15:25 PM, 23 February 2021)

Total Marks: 1

The DNA oligonucleotide abbreviated pATCGAC:

Select the correct option

<input type="radio"/>	has seven phosphate groups.	
<input checked="" type="radio"/>	has a hydroxyl at its 3' end.	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	has a phosphate on its 3' end.	
<input type="radio"/>	has an A at its 3' end.	

Click to Save Answer & Move to Next Question



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BIO202:Quiz no. 3

sec(s)
Quiz Start Time: 12:11 PM, 23 February 2021

Question # 9 of 10 (Start time: 12:15:42 PM, 23 February 2021)

Total Marks: 1

ATP is a

Select the correct option

<input type="radio"/>	nucleoside	
<input checked="" type="radio"/>	nucleotide	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	vitamin	
<input type="radio"/>	nucleic acid	

Click to Save Answer & Move to Next Question



BIO202:Quiz no. 3

Quiz Start Time: 12:11 PM, 23 February 2021

Question # 10 of 10 (Start time: 12:15:52 PM, 23 February 2021)

Total Marks: 1

histones are ----- charged

Select the correct option

<input checked="" type="radio"/>	positively	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	negatively	
<input type="radio"/>	neutral	
<input type="radio"/>	none of the above	

Click to Save Answer & Move to Next Question



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BIO202:Quiz no. 3

Quiz Start Time: 12:05 PM, 23 February 2021

Question # 1 of 10 (Start time: 12:05:04 PM, 23 February 2021)

Total Marks: 1

When linked to vitamins nucleotides are structural components of several essential coenzymes, for example,

Select the correct option

<input checked="" type="radio"/>	coenzyme A	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	
<input type="radio"/>	coenzyme B		
<input type="radio"/>	coenzyme C		
<input type="radio"/>	coenzyme D		

Click to Save Answer & Move to Next Question



BIO202:Quiz no. 3

Quiz Start Time: 12:05 PM, 23 February 2021

Question # 2 of 10 (Start time: 12:05:48 PM, 23 February 2021)

Total Marks: 1

In living cells, nucleotides and their derivatives can serve as:

Select the correct option

<input type="radio"/>	carriers of metabolic energy.	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	
<input type="radio"/>	enzyme cofactors.		
<input type="radio"/>	intracellular signals.		
<input checked="" type="radio"/>	all of the above		

Click to Save Answer & Move to Next Question



Effort By Amaan Khan

VU Medical Zone

BIO202:Quiz no. 3

Quiz Start Time: 12:05 PM, 23 February 2021

Question # 3 of 10 (Start time: 12:06:00 PM, 23 February 2021)

Total Marks: 1

A phosphodiester bond is present in

Select the correct option

<input checked="" type="radio"/>	Nucleic acids in a nucleotide	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	Monosaccharides in a polysaccharide	
<input type="radio"/>	Amino acids in a polypeptide	
<input type="radio"/>	Fatty acids in a diglyceride	

Click to Save Answer & Move to Next Question



BIO202:Quiz no. 3

Quiz Start Time: 12:05 PM, 23 February 2021

Question # 4 of 10 (Start time: 12:06:14 PM, 23 February 2021)

Total Marks: 1

Which one is example of coenzymes

Select the correct option

<input type="radio"/>	FAD	
<input type="radio"/>	NAD ⁺	
<input type="radio"/>	NADP ⁺	
<input checked="" type="radio"/>	All	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com

Click to Save Answer & Move to Next Question



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BIO202:Quiz no. 3

Quiz Start Time: 12:05 PM, 23 February 2021

Question # 5 of 10 (Start time: 12:07:05 PM, 23 February 2021)

Total Marks: 1

Compounds that generate nitrous acid (such as nitrites, nitrates, and nitrosamines) change DNA molecules by:

Select the correct option

<input checked="" type="radio"/>	Breakage of phosphodiester bonds.	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	/
<input type="radio"/>	Deamination of bases.		/
<input type="radio"/>	Depurination.		/
<input type="radio"/>	Formation of thymine dimers		/

Click to Save Answer & Move to Next Question



BIO202:Quiz no. 3

Quiz Start Time: 12:05 PM, 23 February 2021

Question # 6 of 10 (Start time: 12:07:44 PM, 23 February 2021)

Total Marks: 1

In a double-stranded nucleic acid, cytosine typically base-pairs with:

Select the correct option

<input type="radio"/>	Adenosine.	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com	/
<input checked="" type="radio"/>	Guanine.		/
<input type="radio"/>	Inosine.		/
<input type="radio"/>	Thymine.		/

Click to Save Answer & Move to Next Question



Effort By Amaan Khan

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BIO202:Quiz no. 3

sec(s)
Quiz Start Time: 12:05 PM, 23 February 2021

Question # 7 of 10 (Start time: 12:07:59 PM, 23 February 2021)

Total Marks: 1

Nucleic acids are a polymer of nucleotide monomeric units. Each nucleotide consists of

Select the correct option

<input type="radio"/>	base~sugar~OH	
<input type="radio"/>	sugar~phosphate	
<input checked="" type="radio"/>	base~sugar~phosphate	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	sugar~OH	

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Internet Explorer, Google Chrome, and a folder. The active window is titled "Quiz - Google Chr...". The system clock shows 12:08 PM on 2/23/2021.

BIO202:Quiz no. 3

sec(s)
Quiz Start Time: 12:05 PM, 23 February 2021

Question # 8 of 10 (Start time: 12:08:13 PM, 23 February 2021)

Total Marks: 1

Which one of the following is true of the pentoses found in nucleic acids?

Select the correct option

<input type="radio"/>	C-5 and C-1 of the pentose are joined to phosphate groups.	
<input type="radio"/>	The bond that joins nitrogenous bases to pentoses is an O-glycosidic bond.	
<input checked="" type="radio"/>	The pentoses are always in the β -furanose forms.	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	The straight-chain and ring forms undergo constant interconversion.	

Click to Save Answer & Move to Next Question

Windows taskbar showing icons for Internet Explorer, Google Chrome, and a folder. The active window is titled "Quiz - Google Chr...". The system clock shows 12:09 PM on 2/23/2021.

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VU Medical Zone

BIO202:Quiz no. 3

Quiz Start Time: 12:05 PM, 23 February 2021

Question # 9 of 10 (Start time: 12:09:26 PM, 23 February 2021)

Total Marks: 1

A DNA segment contains 100 Adenine and 100 cytosines, how many nucleotides are present in the segment?

Select the correct option

<input type="radio"/>	50	
<input type="radio"/>	100	
<input checked="" type="radio"/>	200	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	400	

Click to Save Answer & Move to Next Question



BIO202:Quiz no. 3

Quiz Start Time: 12:05 PM, 23 February 2021

Question # 10 of 10 (Start time: 12:10:05 PM, 23 February 2021)

Total Marks: 1

The DNA wrapped around the nucleosome core is continuous and joins one nucleosome core to the next -the linker DNA
this 50 bp DNA is complexed with the fifth type of histone, -----

Select the correct option

<input checked="" type="radio"/>	H1	Answer solved by Amaan Khan Contact: 0305-4716616 Email: maniamaan2@gmail.com
<input type="radio"/>	H2A, H2B,	
<input type="radio"/>	H3,	
<input type="radio"/>	H4	

Click to Save Answer & Move to Next Question



Effort By Amaan Khan

Bio202 current paper solved.

Aoa bio202 ka paper 50% tk already meri old files sy arha he and quiz b lekin ye file again bnaa di he is me all question jo share huy hen wo add kr diy hen ..kuch question ko group me proper share ni kia gea so un k agy likh he k not conform...ye file thori detail me he tk quiz b sath hi hon jay .ap sab sy phly ye file currenet paper wali kryy us k bad meri old file ko yaad kry ..quiz k liy old sy all mcq dekhy. Agar ap ye 2no files kr lety hen to 85% sy above kr skty hen paper .lekin agar ye files yaad kry gy only and mcq jo k meri old file me wo then 70% tk hojay g inshllah.

.best of luck..

.Properties of nitrogen(5)

Properties of Nitrogenous Bases

- Aromatic: The Nitrogen containing bases are aromatic i.e. they have alternate double bonds
- Heterocyclic:
 - They are heterocyclic i.e. structures that contain other atoms in addition to carbon, such as nitrogen in the ring structure
 - The six-atom rings of purines and pyrimidines are numbered in opposite directions.
- Weak Bases: Purines or pyrimidines with an $-NH_2$ group are weak bases
- Functional Groups: The most important functional groups of pyrimidines and purines are
 - ring nitrogens
 - carbonyl groups
 - exocyclic amino groups
- Hydrophobicity: • The purine and pyrimidine bases are hydrophobic and relatively insoluble in water at the near-neutral cell pH
- Stacking Interaction: Hydrophobic stacking interactions in which two or more bases are positioned with the planes of their rings parallel (like a stack of coins) are one of two important modes of interaction between bases in nucleic acids.
- Base stacking helps to minimize contact of the bases with water, and these interactions are very important in stabilizing the three-dimensional structure of nucleic acids.

1. Primary structure of DNA?(5)

The primary structure of a nucleic acid is its covalent structure and nucleotide sequence.

- The back bone of the primary structure is the linear strand made by sugar phosphate residues, linked together, while the bases project laterally. This way a long, un-branched chain is formed.

Primary structure is a huge linear polymer of dNTPs that are joined to each other by 5'-3' PDE bonds.

The resulting long, un-branched chain has polarity.

- Both 5'-end and 3'-end are free. at 5'-end there is a free phosphate. at 3'-end there is a free OH that are not attached to other nucleotides.
- Purines and pyrimidines project laterally from the backbone and forms a variable part. • The variable part is concerned with the expression of genetic information.

By convention, the structure of a single strand of nucleic acid is always written with the 5' end at the left and the 3' end at the right • that is, in the 5' to 3' direction

• Some simpler representations of this penta deoxy ribonucleotide are • pA-C-G-T-A OH, • pApCpGpTpA, and finally 5'-ACGTA-3'.

174 Nucleotides and Nucleic Acids-DNA Secon

2. Function of t-RNA (3)

Transfer RNA (tRNA)

- t RNA is the smallest of the three major species of RNA (4S).
- They are single stranded globular molecules.
- They remain largely in cytoplasm.
- They are generated by nuclear processing of a precursor molecule.
- tRNAs compose roughly 20% of total cellular RNA
- There are at least 20 species of tRNA molecules in every cell.
- Although each specific tRNA differs from the others in its sequence of nucleotides, the tRNA molecules as a class have many features in common
- Primary structure
- t RNA molecules consist of 74-95 nucleotides in a particular sequence.
- The t RNA molecules contain not only the usual bases like adenine, guanine, cytosine, uracil but also contain unusual bases
- These unusual bases(also called modified bases) include
- Dihydrouracil • Pseudouridine
- Thymine.
- Secondary Structure Pseudouridine
- Each single stranded
- t RNA is folded extensively.
- Extensive intra chain base pairing which leads to a characteristic CLOVER-LEAF structure.

3. What is the simple lipid? Give two types (3)

-Simple lipids

- Esters of fatty acids with various alcohols
- These contain:
- Fats (and Oils) and Waxes.
- Fats: Esters of fatty acids with glycerol (Oils are fats in the liquid state)
- Waxes: Esters of fatty acids with higher molecular weight monohydric alcohols.
- (having one OH group)
- Triacylglycerols (TAGs)
- The simplest lipids constructed from fatty acids are the triacylglycerols,
- Also referred to as;
- triglycerides, fats, or neutral fats or storage lipids.

4. Give five properties of waxes ? (5)

• Properties of waxes

Waxes are insoluble in water, but

- soluble in fat solvents and are negative for acrolein test. very resistant to rancidity.

- Waxes are not easily hydrolyzed as the fats and are indigestible by lipases (enzymes responsible for fat digestion in body) •

Thus they are of no nutritional value

- Waxes are of two types:
- True waxes • Other Waxes or Non true waxes or Wax-like compounds
- True Waxes are solid simple lipids containing a monohydric alcohol (with a higher molecular weight than glycerol esterified to long-chain fatty acids.

5. Reaction order respect with substrate concentration? (5)

Reaction Orders with Respect to Substrate Concentration

Order	Rate Equation	Comments
Zero	Rate = k	Rate is independent of substrate concentration
First	First rate = k[S]	Rate is proportional to the first power of substrate concentration
Second	Rate = k[S ₁][S ₂]	Rate is proportional to the first power of each of two reactants

Order of Reaction

- When [S] is much less, then the velocity of the reaction is approximately proportional to the substrate concentration.
- The rate of reaction is then said to be first order with respect to substrate.
- When [S] is much greater than K_m the velocity is constant and equal to V_{max}.
- The rate of reaction is then independent of substrate concentration, and is said to be zero order with respect to substrate concentration

6. Difference between uracil and thymine? (2)

- Pyrimidines include: • Cytosine (C)—in both DNA and RNA
- Thymine (T)—only in DNA
- Uracil (U) —only in RNA
- Thymine becomes thymidine and deoxythymidine
- Uracil (U) becomes uridine and deoxyuridine depending on the type of sugar.
- Cytosine is 2-oxy-4-amino-pyrimidine
- Thymine is 2,4-dioxy-5-methyl-pyrimidine • Uracil is 2,4-dioxy-pyrimidine
- T and U differ by only one methyl group, which is present on T but absent on U

7. What do you know about kinetic enzymes? (2)

The study of chemical reactions that are catalysed by enzymes. In enzyme kinetics, we study about the reaction rate measure and the effect of change of condition.

8. What is the concentration of H in 0.1M NaOH? (3)

Solution:

$$K_w = [H^+][OH^-]$$

- With [OH⁻] = 0.1 M, solving for [H⁺] gives
- $[H^+] = K_w/[OH^-]$
 $= 1 \times 10^{-14} \text{ M}^2 / 0.1 \text{ M}$
 $= 10^{-14} \text{ M}^2 / 0.1 \text{ M}$

= 10-13M

9. Examples of hydrolases enzymes?

Common example of hydrolases are:

- Protein hydrolyzing Enzymes (peptidases).
- Carbohydrases
- Lipid hydrolyzing enzymes e.g. Lipases and Phospholipases.

10. Define nucleotide?

: Nucleotides are the building blocks of nucleic acids.

- Without them, DNA or RNA can not be produced.

Nucleotides are helpful in transmission of genetic information, in the synthesis of proteins and also act as energy currency in the cell

11. Describe induced fit hypothesis?

Some proteins can change their shape (conformation)

- When a substrate combines with an enzyme, it induces a change in the enzyme's conformation
- This change in conformation when the substrate binds is induced by multiple weak interactions with the substrate.
- There may also be rearrangements of covalent bonds during an enzyme-catalyzed reaction.
- This conformational change is referred to as induced fit.

12. Function of cAMP?

Acts as second messenger in the cell

- It has role in glycogen metabolism
- cAMP, glycogenolysis
- cAMP TAG metabolism
- cAMP lipolysis
- It decreases cholesterol synthesis
- It causes activation of protein kinases which in turn;
- activate or deactivate other enzymes.
- It regulates the cell membrane permeability, by increasing permeability of cell membrane
- to H₂O, Na⁺, K⁺ & Ca²⁺
- Moreover, it regulates
- insulin secretion,
- catecholamine biosynthesis & Melatonin synthesis

13. Coenzymes?

Some enzymes require no chemical groups for activity other than their amino acid residues.

- Whereas some enzymes require molecules other than proteins for enzymic activity.
- If it is a complex organic molecule or metallo-organic compound it is termed a coenzyme.

14. Nucleotide as intermediate carrier?

Carriers of intermediates: Nucleotides also serve as carriers of activated intermediates in the synthesis of some carbohydrates, lipids, and proteins.

- The sugar derivatives UDP-glucose and UDP-galactose participate in sugar inter conversions
- And in the biosynthesis of starch and glycogen
- Similarly, nucleoside-lipid derivatives such as CDP acylglycerol are intermediates in lipid biosynthesis.

15. DNA denaturation?

- Separation of the two strands of the double helix when hydrogen bonds between the paired bases are disrupted.

16. Differentiate between template and non-template DNA? (2)

Template and Non-template Strands

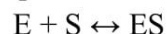
- The term template strand refers to the sequence of DNA that is copied during the synthesis of mRNA.
- The opposite strand is called the Non Template or coding strand or the mRNA-like strand

17. Function of cGMP? (3)

- Cyclic GMP is synthesized from GTP
- It serves as a second messenger in response to nitric oxide during relaxation of smooth muscle (especially blood vessels) so it has role in smooth muscle relaxation and vasodilatation.
- It also has role in
- Protein phosphorylation
- Neurotransmission
- Insulin action
- Regulation of sodium channels

18. Mochlis equation? (3)

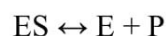
- Leonor Michaelis and Maud Menten in 1913, proposed a simple model that accounts for most of the features of enzyme-catalyzed reactions.
- They postulated that the enzyme first combines reversibly with its substrate to form an enzyme-substrate complex in a relatively fast reversible step: k_1



K_{-1}

- The ES complex then breaks down in a slower second step to yield the free enzyme (E) and the reaction product (P):

K_2



K_{-2}

- Early in the reaction, the concentration of the product, [P], is negligible, and we make the simplifying assumption that the reverse reaction, $P \rightarrow S$ (described by k_{-2}), can be ignored

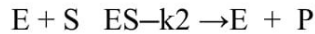
- This assumption is not critical but it simplifies our task.

The overall reaction then reduces to $k_1 \quad K_2$



K-I

k1



k-1

E = Enzyme S = Substrate P = Product

ES = Enzyme-Substrate complex k1 rate

constant for the forward reaction

k-1 = rate constant for the breakdown of the ES to substrate k2

= rate constant for the formation of the products

19. Effect of platelets PAF (5)

Platelets activating factor

- This is an unusual ether glycerophospholipid, with a saturated alkyl group in an ether link to carbon 1 and an acetyl residue (rather than a fatty acid) at carbon 2 of the glycerol backbone
- PAF is synthesized and released by a variety of cell types
- It binds to surface receptors, triggering potent thrombotic and acute inflammatory events
- It causes platelets to aggregate and degranulate (required for clotting), and neutrophils and alveolar macrophages to generate superoxide radicals (required for microbial killing)

20. Effect of PH in ionization of active site?

- The concentration of H⁺ affects reaction velocity in several ways.
- First, the catalytic process usually requires that the enzyme and substrate have specific chemical groups in either an ionized or un-ionized state in order to interact.
- For example, catalytic activity may require that an amino group of the enzyme be in the protonated form (–NH₃⁺).
- At alkaline pH, this group is deprotonated, and the rate of the reaction, therefore, declines.
- Extremes of pH can also lead to denaturation of the enzyme.

21. Lanoline?

Lanoline or wool fat is secreted by sheep sebaceous gland, and contains both free and esterified cholesterol e.g. cholesterol-palmitate

Lanoline secretion helps sheep in reducing water evaporation from skin.

It is used as industrial lubricant and in cosmetics.

22. Iodine number?

- The number of grams of iodine which will be absorbed by 100 grams of a fat is termed its iodine number.

23. Small and large km

- a. Small K_m: A numerically small (low) K_m reflects a high affinity of the enzyme for substrate, because a low concentration of substrate is needed to half-saturate the enzyme—that is, to reach a velocity that is 1/2 V_{max}
- b. Large K_m: A numerically large (high) K_m reflects a low affinity of enzyme for substrate because a high concentration of substrate is needed to half-saturate the enzyme

24. Hydrogenation

- It is the addition of Hydrogen at the double bonds of unsaturated fatty acids.
- Hydrogenation converts Unsaturated fatty acids to Saturated fatty acids.

25. Cofactor

- Some enzymes require no chemical groups for activity other than their amino acid residues.
- Whereas some enzymes require molecules other than proteins for enzymic activity. If the non-protein moiety is a metal ion such as Zn^{2+} or Fe^{2+} , it is called a cofactor.

26. Activation energy?

Energy required to start a chemical reaction is known as activation energy

27. Characteristics of palmitic acid?

Palmitic Acid(16:0) Palmitic acid, or hexadecanoic acid, is the

- most common saturated Fatty Acid found in animals, plants and microorganisms
- Palmitic acid mainly occurs as its ester in triglycerides (fats), especially palm oil.
- It is also found in high amounts in
 - Butter,
 - Cheese,
 - milk and
 - meat
- Excess carbohydrates in the body are converted to palmitic acid.
- Palmitic acid is the first fatty acid produced during fatty acid synthesis and the precursor to longer fatty acids
- As a consequence, palmitic acid is a major body component of fats found in the animals.

28. Pathway for the metabolism of arachdonic acid?

Omega-6 fatty acids

Linoleic acid (found in Vegetable oils, Safflower oil (GLA) → Dihomo-γ-Linolenic acid (DGLA) → (LA) gamma Linolenic acid Arachidonic acid (AA) (found in Meat Poultry Eggs)

Glactocylamide?

29. Neucleotide as the energy currency or cofactors?

- Energy currency: Nucleotides play an important role as "energy currency" in the cell.
- Nucleoside tri- and diphosphates such as ATP and ADP are the principal donors and acceptors of phosphoryl group in metabolism.
- By doing this, they play a key role in the energy transduction.
- This energy is used in almost every energy requiring process in the body, such as;
- Muscle contraction, Transmission of nerve impulse, Transports of nutrients across cell membrane Motility of spermatozoa And many more energy dependent processes

30. Pka value of acetic acid?

4.76

31. Steric acid has carbon number?

18

32. Types of RNA?

- There is a wide variety of RNAs,
- **messenger RNAs (mRNAs)**- transfer genetic information from DNA to the proteinsynthesizing machinery.
- **ribosomal RNAs (rRNAs)**- contribute to the formation and function of ribosomes
- **transfer RNAs (tRNAs)**- adapter molecules that carry specific amino acids for protein synthesis
- **small nuclear RNA (snRNA)**- play pivotal roles in RNA processing, particularly mRNA processing
- **ribozymes** — some RNA molecules have intrinsic catalytic activity these RNA enzymes, are called ribozyme

33. Neucleotide composition?

Nucleotides are composed of

- A nitrogenous base (purine or pyrimidine)
- A pentose monosaccharide
- One, two, or three phosphate groups
-
- Nitrogenous Bases
- The nitrogen-containing bases belong to two families of compounds:
- Purines
- Pyrimidines

34. Rancidity and factors?

- The chemical deterioration of fats.
- When lipid-rich foods are exposed too long to the oxygen in air, they may spoil and become foul smelling.
- It occurs particularly on aging after exposure to atmospheric oxygen, light, moisture, bacterial or fungal contamination and/or heat.
- Saturated fats resist rancidity more than unsaturated fats that have unsaturated double bonds.
- Rancidity is due to
- Oxidation • Hydrolysis • Oxidative Rancidity

35. Examples of cyclic nucleotide?

There are two important cyclic nucleotides:

- **Cyclic AMP cAMP**
- **Cyclic GMP cGMP**

36. How DNA intact duplex?

DNA Renaturation

- Under appropriate conditions (temp. & salt concentration), separated strands of DNA will renature or reassociate and form the double helix by the process called renaturation (or reannealing).
- This reannealing process is also referred to as hybridization.
- When the temperature or pH is returned to the range in which most organisms live, the

unwound segments of the two strands spontaneously rewind, or anneal, to yield the intact duplex

37. Three functional group of nucleotide?

- Functional Groups: The most important functional groups of pyrimidines and purines are
- ring nitrogens
- carbonyl groups
- exocyclic amino groups

38. Subgroups of oxyreductase?

) Oxidoreductases

- catalyze oxidation reduction reactions
- further divided into four subgroups;
- Oxidase,
- Dehydrogenases, • Hydroperoxidases
- Oxygenases.

39. VLDL?

VLDLs are assembled in the liver.

- composed predominantly of TAGs synthesized in liver and
- contain some cholesterol and cholesteryl esters
- As VLDL pass through the circulation, TAG is degraded and taken up by peripheral tissues in the form of fatty acids,
- causing the VLDL to decrease in size and become denser,
- called VLDL remnant.

40. Sterol?

Importantly, lipids provide the hydrophobic barrier that permits partitioning the aqueous contents of cells and subcellular structures as; phospholipids and sterols are the major structural elements of biological membranes.

41. Condensation reaction with example?

42. Xanthine oxidase?

- proteases hydrolyze proteins
- Modifiers may precede the name to indicate, for example,
- the substrate (xanthine oxidase),
- the source of the enzyme (pancreatic ribonuclease),
- its regulation (hormone-sensitive lipase)
- Where needed, alphanumeric designators are added to identify multiple forms of an enzyme e.g,
- RNA polymerase III
- protein kinase C

43. Define rate of reaction?

The reaction rate or rate of reaction is the speed at which a chemical reaction takes place, defined as proportional to the increase in the concentration of a product per unit time and to the decrease in the concentration of a reactant per unit time.

44. glucoceramides ? not confirm question due mis spelling sharing in group..

A mixture of new **glucoceramides** was obtained from the sea cucumber *A. molpadioides*, an echinoderm widely distributed in sandy coastal regions of China

45. Hexokinase?

Hexokinase catalyses the first step in glucose metabolism in most cells, the transfer of a phosphate from ATP to glucose to form glucose 6-phosphate.

- Hexokinase I, the isozyme in red blood cells has a low K_m for glucose of approximately 0.05 mM- helpful in utilizing blood glucose even when the blood glucose concentration is very low.

46. Pka value of lactic acid?

- Calculate the pK_a of lactic acid, given that when the concentration of lactic acid is 0.01M and the concentration of lactate is 0.087 M, the pH is 4.80
- $pH = pK_a + \log \frac{[\text{lactate}]}{[\text{lactic acid}]}$
- $pK_a = pH - \log \frac{[\text{lactate}]}{[\text{lactic acid}]}$
$$= 4.80 - \log \frac{0.087}{0.01}$$
$$= 4.80 - \log 8.7$$
$$= 4.80 - 0.94$$
$$= 3.9$$

47. Function of lipoxin?

- A series of reductions of the resultant hydro-per-oxy groups leads to the formation of tri-hydroxy derivatives of arachidonic acid known as the lipoxins.
-
- Lipoxins induce chemotaxis and stimulate superoxide radicals for killing of microorganisms
- Prostaglandins, thromboxanes, leukotrienes and lipoxins have very short half lives and rapidly degraded in the body.

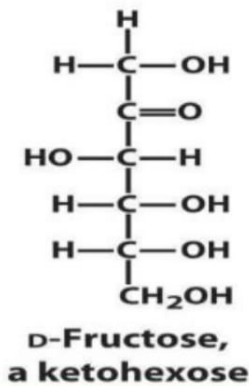
48. Cofactor and coenzymes difference

Coenzymes are small, non-protein organic molecules that carry chemical groups **between** enzymes (e.g. NAD and FAD). Forms easily removed loose bonds. **Cofactor** is a non-protein chemical compound that tightly and loosely binds with an enzyme or other protein molecules

49. Isomer of fructose D

, the naturally occurring form of fructose is the D(–) isomer

In solution, glucose is dextrorotatory, and glucose solutions are sometimes known as dextrose

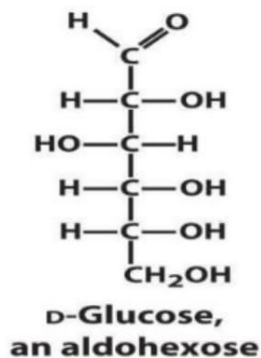


50. Interaction of DNA?

Two basic types of chemical **interaction** with **DNA** are noncovalent and covalent binding. ...

Covalent **interactions** occur when the chemical, or a portion of the chemical, is covalently adducted to the **DNA** helix. **proteins** organize the **DNA** into a compact structure called chromatin. In eukaryotes, this structure involves **DNA** binding to a complex of small basic **proteins** called histones.

51. D isomer of glucose at C12



52. Sphingomyelin?

- present in the plasma membranes of animal cells and are especially prominent in nerve tissue including myelin, -thus the name "sphingomyelins"
- Sphingomyelin of the myelin sheath contains predominant longer-chain fatty acids such as lignoceric acid and nervonic acid (24 carbon)
- whereas gray matter of the brain has sphingomyelin that contains primarily stearic acid(18 carbon)

53. Hydrophobic and polar head

- **Sphingolipids**, like other membrane lipids, are composed of a
- hydrophobic portion, (ceramide) and
- a polar head group

54. At high altitude PO₂ is lower and oxygen to tissue is reduced?

- At high altitude of hills and mountains, where the pO₂ is considerably lower (due to low atmospheric pressure).
- The delivery of oxygen to the tissues is now reduced.
- However, after just a few hours at the higher altitude, the BPG concentration in the blood begins to rise, leading to a decrease in the affinity of hemoglobin for oxygen.
- This adjustment in the BPG level has only a small effect on the binding of oxygen in

the lungs

- But a considerable effect on the release of oxygen in the tissues shown by increased oxygen unloading at the peripheral tissues.

Increase in BPG concentration in the RBC shifts the dissociation curve to the right, i.e. increased O₂ unloading.

BPG concentration also increases in those conditions in which there is decreased O₂ delivery to tissues, such as in anemia and respiratory diseases.

- As a result, the delivery of oxygen to the tissues is restored to nearly 40% of the oxygen that can be transported by the blood.

55. Enzyme is charted through rate of reaction

Relationship of velocity to enzyme concentration

- The rate of the reaction is directly proportional to the enzyme concentration.
- There is a linear relationship between reaction rate and enzyme concentration (at constant substrate concentration)

56. Phosphodiester bond? (2)

Phosphodiester Bond

- When two or more nucleotides combine together a phosphodiester bond is formed.
- This bond is formed mainly between the 3'OH group of sugar of one nucleotide and 5'PO₄ group of sugar of another nucleotide creating a phosphodiester linkage.

57. Acrolein test of glycerol?

- On heating with sulfuric acid or KHSO₄ (dehydration)
- it gives acrolein that has a bad odor.
- used for detection of free glycerol or any compound containing glycerol.
- In contrast to glycerol
- Sphingosine does not show positive acrolein test.
- Therefore glycerolipids and shingolipids can be differentiated on the basis of acrolein test.

58. Bile salt?

- bile salts (conjugated bile acids) are quantitatively the most important organic components of bile
- The primary bile acids are synthesized in the liver from cholesterol
- These are cholic acid and chenodeoxycholic acid

Functions of bile salt

- The emulsification of dietary fats in intestinal canal, brought about by bile salts, is a prerequisite for digestion and absorption of fats.
- The bile salts, act to break apart the fat globules in the small intestines and allow them to become more "soluble" for absorption.

59. Activation energy relation to reaction?

The rate of a reaction reflects this activation energy: a higher activation energy

corresponds to a slower reaction.

- Reaction rates can be increased by raising the temperature, thereby increasing the number of molecules with sufficient energy to overcome the energy barrier.
- Alternatively, the activation energy can be lowered by adding a catalyst.
- Catalysts enhance reaction rates by lowering activation energies.
- The activation energy is lower when the enzyme catalyzes the reaction.
- The role of enzymes is to accelerate the inter-conversion of S and P.
- i.e enzymes lower the energy of activation, ΔG^\ddagger , of a reaction.

60. Heterogeneous mRNA

Messenger RNA (mRNA)

- This class is the most heterogeneous in
- Abundance • Size (500-6000 nucleotides)
- base sequence
- Stability
- mRNA comprise about 2–5% of total cellular RNA
- mRNA molecules are formed with the help of DNA template strand (3'–5') during the process called transcription.
- In addition to the protein coding regions in the mature eukaryotic mRNA that can be translated,
- there are untranslated regions at its 5' and 3' ends
- Moreover, there is a 5' cap and
- a poly A tail at 3' end

61. Sphingolipids?

Sphingosine is an amino alcohol,

- which is a component of the class of lipids known as sphingolipids • Sphingosine is synthesized in the body in the form of ceramide,
- to which different moieties are added to form sphingolipids.

62. Histone and its classes?

- Eukaryotic DNA is associated with tightly bound basic proteins, called histones.
- These serve to order the DNA into fundamental structural units, called nucleosomes.
- There are five classes of histones, designated H1, H2A, H2B, H3, and H4.
- These are positively charged at physiologic pH as a result of their high content of lysine and arginine.
- Two molecules each of H2A, H2B, H3, and H4 form the structural core of the nucleosome.
- Around this core, a segment of the DNA double helix is wound nearly twice approximately 140bp

63. Calculate ratio of concentration of acetate and acetic acid if pH = 5.40 and pKa is 4.45?

- $\text{pH} = \text{pKa} + \log \frac{[\text{acetate}]}{[\text{acetic acid}]}$ • $\log \frac{[\text{acetate}]}{[\text{acetic acid}]} = \text{pH} - \text{pKa}$
 $= 5.40 - 4.76$
 $= 0.64$
- $\frac{[\text{acetate}]}{[\text{acetic acid}]} = \text{antilog } 0.64$
 $= 4.37$

- In summary,
- when $[HA] = [A^-]$; $pH=pK_a$
- when $[HA] > [A^-]$; $pH<pK_a$
- when $[HA] < [A^-]$; $pH>pK_a$

64. Three nucleotides?

Nucleotides are composed of three subunit molecules: a nucleobase, a five-carbon sugar (ribose or deoxyribose), and a phosphate group consisting of one to three phosphates. three nucleotides—called a triplet or codon—codes for one particular amino acid in the protein. The nucleotide sequence in the DNA is first transcribed into a molecule of messenger RNA (ribonucleic acid).

65. properties of tags?

Glycerol is widely used in pharmaceutical and cosmetic preparations.

Physical properties • Neutral fats are 1. colourless, 2. odorless and 3. tasteless substances

Physical properties

- Neutral fats are
- colourless, odorless and tasteless substances • Solubility:
- They are insoluble in water but soluble in organic fat solvents(e.g., ether, benzene, acetone, chloroform)
- 5. Specific gravity:
- The specific gravity of all fats is less than 1.0, consequently all fats float in water
- 6. Emulsification:
- Emulsions of fat may be made by shaking vigorously in water and by emulsifying agents such as gums and soaps
-
- The emulsification of dietary fats in intestinal canal, brought about by bile salts, is a prerequisite for digestion and absorption of fats.
- The bile salts, act to break apart the fat globules in the small intestines and allow them to become more "soluble" for absorption.
- The hydrophobic fat molecules will clump together into globules in the watery mixture in the digestive system.
- The emulsifiers break them down to smaller "globules" and allow them to become more soluble.

66. What are lyases?

an enzyme which catalyses the joining of specified molecules or groups by a double bond.

67. Define saponification?

Saponification

- Hydrolysis of a fat by an alkali is called saponification
- The resultant products are;
- glycerol and
- the alkali salts of the fatty acids, which are called “soaps”
-

- The number of mgs of NaOH/KOH required to saponify the free and combined FA in one gram of a given fat is called its **saponification number**

68. Name the inorganic elements serve as cofactor?

metal ion such as Zn^{2+} or Fe^{2+} ,

69. Which amino acid form disulphide bridge?

- The amino acid cysteine in a protein can form a covalent disulfide bond with another cysteine molecule through spontaneous (nonenzymatic) oxidation of their sulfhydryl groups.

70. Detail note on ligands? (10)long question lazmi yaad kryy..

Ligand

In biochemistry and pharmacology, a ligand (from the Latin ligandum, binding) is a substance (usually a small molecule),

- that forms a complex with a biomolecule to serve a biological purpose.
- In a narrower sense, it is a signal triggering molecule, binding to a site on a target protein
- A molecule bound reversibly by a protein is called a ligand.
- Ligands include substrates, inhibitors, activators, and neurotransmitters
- A ligand may be any kind of molecule, including another protein.
- A ligand binds at a site on the protein called the binding site, binding site is complementary to the ligand in size, shape, charge, and hydrophobic or hydrophilic character.
- Furthermore, the interaction is specific: the protein can discriminate among the thousands of different molecules in its environment and selectively bind only one or a few.
- The binding of a protein and ligand is often coupled to a conformational change in the protein that makes the binding site more complementary to the ligand, permitting tighter binding **called induced fit**.
- A given protein may have separate binding sites for several different ligands.
- In a multi-subunit protein, a conformational change in one subunit often affects the conformation of other subunits.
- Interactions between ligands and proteins may be regulated, through interactions with additional ligands.
- These other ligands may cause conformational changes in the protein that affect the binding of the first ligand.

71. Enzymes and the classification of enzymes? (10)long question lazmi yaad kry repeated he.

IUB Classification of Enzymes

- International Union of Biochemists (IUB) developed an unambiguous system of enzyme nomenclature in which each enzyme has a
- unique name and
- code number
- As an example, the formal systematic name of the enzyme (hexokinase) catalyzing the reaction

- $\text{ATP} + \text{D-glucose} \rightarrow \text{ADP} + \text{D-glucose-6 phosphate}$ is
- ATP:glucose phosphotransferase,
- Its Enzyme Commission (E.C.) number is 2.7.1.1.
- (2) denotes the class name (transferase)
- (7) the subclass phosphotransferase
- (1) denotes a hydroxyl group as acceptor
- (1) D-glucose as the phosphoryl group acceptor.
- In the systematic naming system, enzymes are divided into six major classes each with numerous subgroups

CLASSIFICATION OF ENZYMES		
Group of Enzyme	Reaction Catalysed	Examples
1. Oxidoreductases	Transfer of hydrogen and oxygen atoms or electrons from one substrate to another.	Dehydrogenases, Oxidases
2. Transferases	Transfer of a specific group (a phosphate or methyl etc.) from one substrate to another.	Transaminase, Kinases
3. Hydrolases	Hydrolysis of a substrate.	Estrases, Digestive enzymes
4. Isomerases	Change of the molecular form of the substrate.	Phospho hexo isomerase, Fumarase
5. Lyases	Nonhydrolytic removal of a group or addition of a group to a substrate.	Decarboxylases, Aldolases
6. Ligases (Synthetases)	Joining of two molecules by the formation of new bonds.	Citric acid synthetase

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1) Oxidoreductases

- catalyze oxidation reduction reactions
- further divided into four subgroups;
- Oxidase,
- Dehydrogenases, • Hydroperoxidases
- Oxygenases.

2) Transferases

- These bring about a transfer of functional groups such as
- phosphate and
- amino group
- from one molecule to another molecule called donor and acceptor molecules respectively.
- The common examples of this group are
- Transminases
- Phosphotransfrases (Kinases)
- Hexokinase is a phosphotransfease which catalyze the transfer of phosphate groups.
- $\text{Glucose} + \text{ATP} \rightarrow \text{Glucose 6-phosphate} + \text{ADP}$.

3) Hydrolases

- These enzymes catalyze hydrolysis, i.e.
- add water molecule to the substrate which is simultaneously decomposed; the functional group of substrate is transferred to water.
- Common example of hydrolases are:
- Protein hydrolyzing Enzymes (peptidases).
- Carbohydrases
- Lipid hydrolyzing enzymes e.g. Lipases and

4) Lyases

- These enzymes catalyze the addition of
 - NH_3 ,
 - H_2O or
 - CO_2 to double bonds or
 - the removal of these groups leaving behind double bonds.
- Lyases are included in a separate class because they catalyze these reactions by means other than hydrolysis or oxidation.

194 Enzymes- IUB Classification (Continued...)

5) Isomerases

These enzymes catalyze the structural change within a single molecule by the transfer of groups within it, resulting in the formation of an isomeric form of substrate.

6) Ligases

- These enzymes catalyze condensation reactions joining two molecules by forming
- C-O,
- C-S,
- C-N and
- C-C bonds.
- The energy for condensation is provided by cleavage of high energy phosphates, e.g. ATP, GTP etc.

72. Large and small non-coding RNA (10) long question repeated ...

- **Large & Small Noncoding Regulatory RNAs**
- One of the most exciting discoveries in the last decade of eukaryotic regulatory biology has been the identification and characterization of regulatory nonprotein coding RNAs (ncRNAs).
- ncRNAs exist in two general size classes,
- small consisting of microRNA (miRNAs) and silencing (siRNAs) and
- Large consisting of long noncoding RNAs (lncRNAs)
- The small ncRNAs termed microRNA (miRNAs) and silencing (siRNAs) typically inhibit gene expression at the level of specific protein production by
- targeting mRNAs through one of several distinct mechanisms.
- Both siRNAs and miRNAs typically hybridize, via the formation of RNA–RNA hybridization to their targeted mRNAs
- **long noncoding RNAs (lncRNAs).**
- lncRNAs, which as their name implies, do not code for protein (ie, the mRNA encoding

genes).

- ncRNAs make up a significant portion of eukaryotic transcription
- ncRNAs play many roles ranging from contributing to structural aspects of chromatin to regulation of mRNA gene transcription by RNA polymerase II.

Sir Arslan

1) Enzyme Kinetics.3

Enzyme Kinetics. *Enzymes are protein catalysts that, like all catalysts, speed up the rate of a*

chemical reaction without being used up in the process.

Enzyme kinetics is the study of the chemical reactions that are catalysed by enzymes. In enzyme kinetics, the reaction rate is measured and the effects of varying the conditions of the reaction are investigated. Studying an enzyme's kinetics in this way can reveal the catalytic mechanism of this enzyme, its role in metabolism, how its activity is controlled, and how a drug or an agonist might inhibit the enzyme. Enzyme kinetics is the investigation of how substrate bind with enzyme them into product. They are used to kinetic analysis are commonly obtained from an enzyme.

In 1913 the leonor Machalis and Muad leonora Menton are proposed quantative theory of enzyme. The molecules of the substrate bind reversibly with enzyme are called enzyme substrate complex. These molecules are converted into product are called enzyme product complex.

These theory are further are further developed by J.B.S haldan and G.E briggs who derived equation to still widely used today. Enzyme Kinetics depend upon the solution condition and saturation concertration.

- **Acrolein Test**

Acrolein test. *Acrolein test is used to detect the presence of glycerol or fat. When fat is treated strongly in the presence of a dehydrating agent like potassium bisulphate (KHSO₄), the glycerol portion of the molecule is dehydrated to form an unsaturated aldehyde, **acrolein** that has a pungent irritating odour*

- **Nucleotides Composition**

*Nucleotides are the building blocks of **nucleic acids**; they are composed of three subunit molecules: a **nitrogenous base**, a five-carbon sugar (ribose or **deoxyribose**), and at least one **phosphate** group. A nucleoside is **an nitrogenous base** and a 5-carbon sugar.*

- **Hydrogenation Of Fats**

Hydrogenation converts liquid vegetable oils into solid or semi-solid **fats**, such as those present in margarine. Changing the degree of saturation of the **fat** changes some important physical properties, such as the melting range, which is why liquid oils become semi-solid.

- **N Glycosidic Bond**

A glycosidic bond or glycosidic linkage is a type of covalent bond that joins a carbohydrate molecule to another group, which may or may not be another carbohydrate

- **Write The Composition Of Triacylglycerols?**

*The Chemistry of Triglycerides. A triglyceride is a lipid molecule made up of one unit of **glycerol** and three **fatty acids**, hence the tri- prefix, which means three. A triglyceride looks a little bit like a creature with three tails. The head is **glycerol**, which is a simple alcohol compound.*

• **Write Two Examples Of Cyclic Nucleotide?**

Cyclic nucleotide has three components. It contains a nitrogenous base (meaning it contains nitrogen); for example, adenine in cAMP and guanine in cGMP. It also contains a sugar, specifically the five-carbon ribose. And finally, a **cyclic nucleotide** contains a phosphate.

Hydrolytic rancidity refers to the odor that develops when triglycerides are hydrolyzed and free fatty acids are released. This reaction of lipid with water may require a catalyst, leading to the formation of free fatty acids and glycerol. In particular, short-chain fatty acids, such as butyric acid, are malodorous.

halogenation with respect to fat 5 marks

Halogenation

- Similar to hydrogenation,
- Halogens such as chlorine, bromine and iodine can also be added to double bonds in unsaturated fatty acids.
- It is a very important property to determine the degree of unsaturation of the fat or oil that determines its biological value.
- The degree of unsaturation is reflected by iodine number.
- Iodine number is defined as the number of grams of iodine absorbed by 100 gm of fat.
- The more the iodine number, the greater the degree of unsaturation.
- Fats rich in saturated fatty acids have low iodine numbers,
- while fats rich in unsaturated fatty acids have high iodine numbers
- The determination of iodine number is useful to the chemist in determining the quality of an oil or its freedom from adulteration
- Iodine number of cotton seed oil varies from 103 to 111.
- That of olive oil from 79 to 88,
- And that of linseed oil from 175 to 202
- A commercial lot of olive oil which has iodine number higher than 88 might have been adulterated with cotton seed oil
- The higher is the iodine number, the more reactive, less stable, more susceptible to oxidation and rancidification is the oil or fat.

• **What Do You Know About Km Of Michaelis-Menten Equation?**

In biochemistry, Michaelis-Menten kinetics is one of the best-known models of enzyme kinetics.

It is named after German biochemist Leonor Michaelis and Canadian physician Maud Menten.

The **Michaelis-Menten equation** can then be rewritten as $V = \frac{K_{cat} [Enzyme] [S]}{(K_m + [S])}$. K_{cat} is equal to K_2 , and it measures the number of substrate molecules "turned over" by

enzyme per second Taking the reciprocal of both side of the **Michaelis-Menten equation** gives: To determine the values of K_m and V_{max} .

- **Tautomerism:** • All these bases can exist in keto-enol or amine-imine form. • At physiologic pH keto and amine form is predominant.
- **UV light absorbance:** The conjugated double bonds of purine and pyrimidine derivatives absorb ultraviolet light
- **Hydrophobicity:** • The purine and pyrimidine bases are hydrophobic and relatively insoluble in water at the near neutral cell pH
- **Weak Bases:** Purines or pyrimidines with an $-NH_2$ group are weak bases
- **Heterocyclic:** • They are heterocyclic i.e. structures that contain other atoms in addition to carbon, such as nitrogen in the ring structure
- **Aromatic:** The Nitrogen containing bases are aromatic i.e. they have alternate double bonds

• What Are Enzymes? Write Its Classification With Example?

A several complex protein that are produced by cell and act as catalysts by specific biochemical reaction.

There were six classes of **enzymes** that were created so that **enzymes** could easily be named. These classes are: Oxidoreductases, Transferases, Hydrolases, Lyases, Isomerases, and Ligases. This is the international **classification** used for **enzymes**.

• Five Properties Of Waxes?

Waxes are insoluble in water, but soluble in fat solvents and are

- negative for acrolein test.

- very resistant to rancidity.

Waxes are not easily hydrolyzed as the fats

- and are indigestible by lipases (enzymes responsible for fat digestion in body) • Thus they are of no nutritional value

• Difference Between Thymine And Uracil?

Thymine becomes thymidine and deoxythymidine, Thymine is 2,4-dioxy-5-methyl-pyrimidine,

Thymine (T)—only in DNA. Uracil (U) becomes uridine and deoxyuridine, Uracil is 2,4-dioxypyrimidine, Uracil (U)—only in RNA. T and U differ by only one methyl group, which is present on T but absent on U.

•

• Spermaceti

Spermaceti • is a wax that is most often found in the head cavities of the sperm whale. • Fatty

esters are formed essentially of • cetyl palmitate and • cetyl myristate. It was used in cosmetics,

pharmacy and also in candles • recent international regulation concerning whale captures, has

stopped its use. It is now replaced by synthetic cetyl palmitate.

• Lipoprotein

Combinations of lipid and protein (lipoproteins) serve as the means of transporting lipids in the

blood, Importantly, lipids provide the hydrophobic barrier that permits partitioning the aqueous

contents of cells and subcellular structures as; phospholipids and sterols are the major structural elements of biological membranes.

- Different combinations of lipids and proteins produce particles of different densities
- ranging from chylomicrons to high-density lipoproteins

• Examples Of Coenzymes?

FAD, (Flavin Adenine Dinucleotide), NAD⁺ (Nicotinamide adenine Dinucleotide) and NADP⁺

(Nicotinamide adenine Dinucleotide Phosphate)

• Properties Of Glycerol

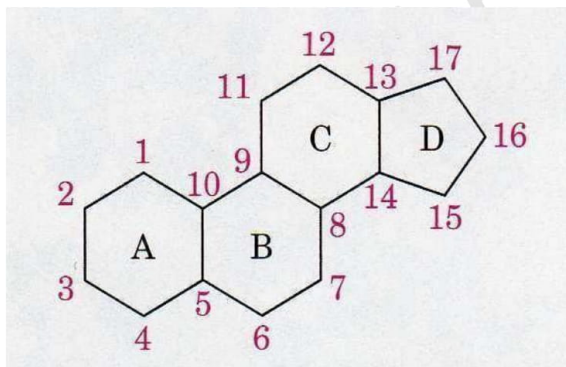
It has the following properties: • Colorless • Viscous oily liquid with • sweet taste

Primary Structure Of DNA

In **DNA** double helix, the two strands of **DNA** are held together by hydrogen bonds. The nucleotides on one strand base pairs with the nucleotide on the other strand. The secondary **structure** is responsible for the shape that the nucleic acid assumes. The bases in the **DNA** are classified as purines and pyrimidines.

Steroids and Cholesterol

- A steroid is a lipid whose structure is based on the tetracyclic (four-ring) structure consists of
- 3 cyclohexane rings.
- 1 cyclopentane ring.



- Steroids with eight to ten carbon atoms in the side chain at C-17 and a hydroxyl group at C-3 are classified as sterols

1. Tags Physical Properties?

Glycerol is widely used in pharmaceutical and cosmetic preparations.

Physical properties • Neutral fats are 1. colourless, 2. odorless and 3. tasteless substances

1. Buffer Defn And Its Composition?

A **buffer** solution (more precisely, pH **buffer** or hydrogen ion **buffer**) is an aqueous solution consisting of a mixture of a weak acid and its conjugate base, or vice versa. Its pH changes very little when a small amount of strong acid or base is added to it.

To relatively the maintaining the pH of the solution, a buffer must consist of the acid-base pair meaning

either:

- i) A weak base and a conjugate acid.
- ii) A weak acid and conjugate base. The use of one or more, depend upon the desired pH when preparing the buffer.

Example:

- iii) Acetic acid such as sodium acetate (CH_3COOH) in which they have conjugate acid. Ammonia (NH_3) and a salt (NaCl) in which they have conjugate base.

Nucleic Acid Medical Application?

Applications of nucleic acid testing in diagnosis and therapy. **Nucleic acid** testing or **nucleic acid** amplification testing, often abbreviated as NAT or NAAT, is a technique that involves amplification and detection of genetic material—the **nucleic acids**, DNA or RNA—for diagnosis or to provide guidance on therapy. as anti-viral drugs such as in the treatment of AIDS.

Two properties of glycerol trinitrate. 2 marks

- Glycerol combines with three molecules of nitric acid to form Glycerol trinitrate that is used as
- explosive and
- vasodilator

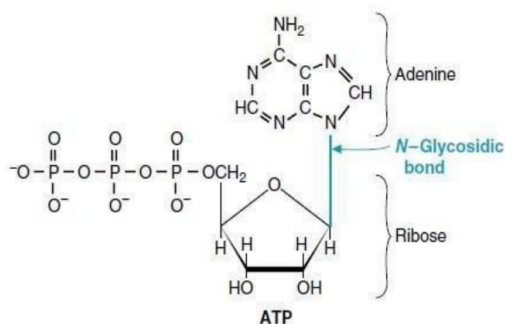
1. Differentiate Between Oxidative And Hydrolytic Rancidity?

2. Oxidative rancidity is a natural process that affects fats and oil.

Hydrolytic rancidity refers to the odor that develops when triglycerides are hydrolyzed and free fatty acids are released. This reaction of lipid with water may require a catalyst, leading to the formation of free fatty acids and glycerol. In particular, short-chain fatty acids, such as butyric acid, are malodorous

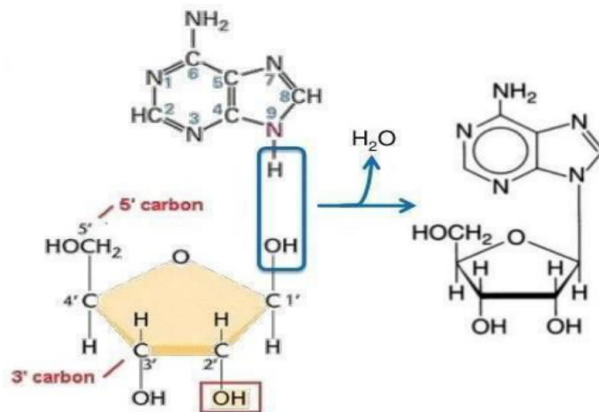
example of condensation reaction .2mrks

- Sugars are linked to the heterocycle by a β -N-glycosidic bond, almost always to the
- N-1 of a pyrimidine
- N-9 of a purine



- The N-glycosyl bond is formed by removal of the elements of water
- a hydroxyl group from the pentose and

- hydrogen from the base



- Thus it is a condensation reaction.
- Similar to O-glycosidic bond formation in carbohydrates
- However, N-glycosidic bonds, have Nitrogen atom instead of oxygen linking the two residues. • the addition of the glycosidic bond to nitrogenous base is indicated by the name change
- such as from adenine to adenosine for the glycosidic bond

Write Three Functions Of cGMP?

Cyclic guanosine monophosphate (cGMP) is a cyclic nucleotide derived from guanosine triphosphate (GTP). cGMP acts as a second messenger much like cyclic AMP. Its most likely mechanism of action is activation of intracellular protein kinases in response to the binding of membrane-impermeable peptide hormones to the external cell surface

. Write Hydrogenation Process With Respect To Fats?

During **hydrogenation**, vegetable oils are reacted with hydrogen gas at about 60°C. A nickel catalyst is used to speed up the reaction. The double bonds are converted to single bonds in the reaction. In this way unsaturated fats can be made into saturated fats – they are hardened.

Role Of Nucleotides As Coenzyme And Intermediate Carrier?

ATP, an adenine **nucleotide**, is a universal energy currency in the cells of biological systems. Adenine **nucleotides** are components of three major **coenzymes**, NAD^+ , FAD, and CoA, organic molecules that assist in various biochemical reactions by serving as carriers. **Nucleotides** also function as regulators of metabolism.

Energy currency 5

Energy currency: Nucleotides play an important role as "energy currency" in the cell.

- Nucleoside tri- and diphosphates such as ATP and ADP are the principal donors and acceptors of phosphoryl group in metabolism.
- By doing this, they play a key role in the energy transduction.
- This energy is used in almost every energy requiring process in the body, such as;
- Muscle contraction, Transmission of nerve impulse, Transports of nutrients across cell membrane Motility of spermatozoa And many more energy dependent processes.

iodine number

- Iodine number is defined as the number of grams of iodine absorbed by 100 gm of fat.
- The more the iodine number, the greater the degree of unsaturation.
- Fats rich in saturated fatty acids have low iodine numbers,
- while fats rich in unsaturated fatty acids have high iodine numbers

Characters Of Vldl?

very-low-density lipoproteins (VLDL),

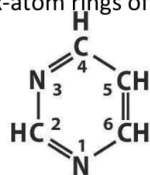
- VLDLs are assembled in the liver.
- composed predominantly of TAGs synthesized in liver and
- contain some cholesterol and cholesteryl esters
- As VLDL pass through the circulation, TAG is degraded and taken up by peripheral tissues in the form of fatty acids,
- causing the VLDL to decrease in size and become denser,

called VLDL remnant.

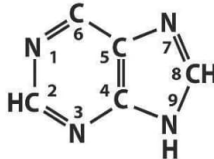
write five Properties of nitrogenous bases. 5 marks

Properties of Nitrogenous Bases

- **Aromatic:** The Nitrogen containing bases are aromatic i.e. they have alternate double bonds
- *Heterocyclic:*
- They are heterocyclic i.e. structures that contain other atoms in addition to carbon, such as nitrogen in the ring structure
- The six-atom rings of purines and pyrimidines are numbered in opposite directions.



Pyrimidine



Purine

- **Weak Bases:** Purines or pyrimidines with an -NH_2 group are weak bases
- **Functional Groups:** The most important functional groups of pyrimidines and purines are
 - ring nitrogens
 - carbonyl groups
 - exocyclic amino groups
- **Hydrophobicity:** • The purine and pyrimidine bases are hydrophobic and relatively insoluble in water at the near-neutral cell pH
- **Stacking Interaction:** Hydrophobic stacking interactions in which two or more bases are positioned with the planes of their rings parallel (like a stack of coins) are one of two important modes of interaction between bases in nucleic acids.
- Base stacking helps to minimize contact of the bases with water, and these interactions are very important in stabilizing the three-dimensional structure of nucleic acids.

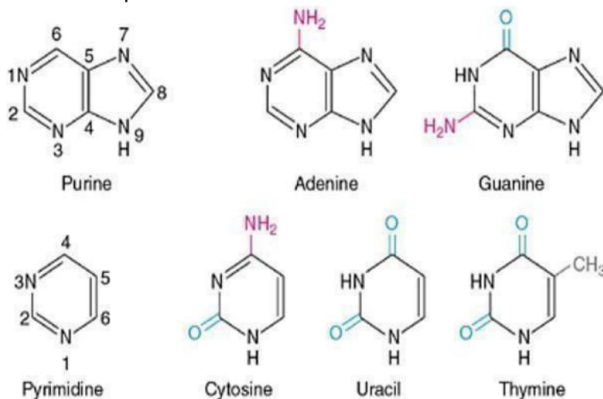
carbon atom number in pentose sugar of nucleotides & nucleosides

Numbering of Carbon and Nitrogen Atoms

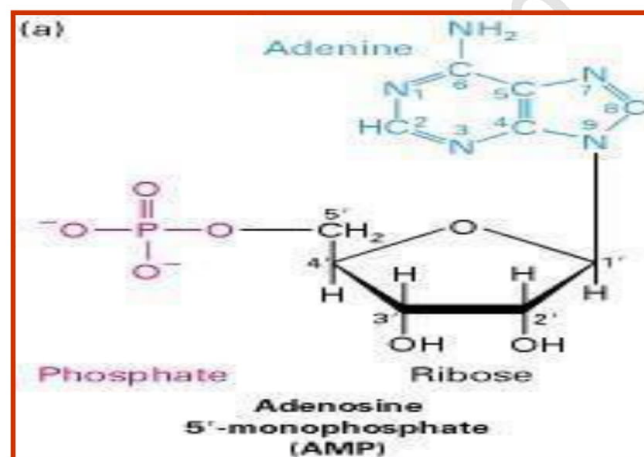
- The carbon and nitrogen atoms in the rings of the base and the sugar are numbered

separately

- The atoms in the rings of the bases are numbered
- 1 to 6 in pyrimidines &
- 1 to 9 in purines



- In the pentoses of nucleotides and nucleosides the carbon numbers are given a prime (') designation to distinguish them from the numbered atoms of the nitrogenous base.
- The carbons in the pentose are numbered 1' to 5'.
- Numerals with a prime (e.g., 2' or 3') distinguish atoms of the sugar from those of the heterocycle.



- Thus, when the 5'-carbon of a nucleoside (or nucleotide) is referred to, a carbon atom in the pentose, rather than an atom in the base, is being specified.

Nucleotides serve as single transduction pathway?

- serve as second messengers in signal transduction pathways.
Signal Transduction: GTP and GDP play key roles in activating or inhibiting proteins in various cellular signaling cascades.
- Medical applications Specifically medical applications include the use of synthetic purine and pyrimidine analogs that contain halogens, thiols, or additional nitrogen atoms;
- Their use includes chemotherapy for cancer
- as suppressors of the immune response during organ transplantation. as anti-viral drugs such as in the treatment of AIDS

define function of lipoxin 2 marks

- The lipoxins are formed through the action of 15-lipoxygenase followed by the

action of 5-lipoxygenase on arachidonic acid.

- A series of reductions of the resultant hydro-per-oxy groups leads to the formation of tri-hydroxy derivatives of arachidonic acid known as the lipoxins.
-
- Lipoxins induce chemotaxis and stimulate superoxide radicals for killing of microorganisms
- Prostaglandins, thromboxanes, leukotrienes and lipoxins have very short half lives and rapidly degraded in the body.

Nucleoside vs. Nucleotide

A **nucleoside** consists of a nitrogenous base covalently attached to a sugar (ribose or deoxyribose) but without the phosphate group. A

Sir Arslan

nucleotide consists of a nitrogenous base, a sugar (ribose or deoxyribose) and one to three phosphate groups.

Nucleoside = Sugar + Base

Nucleotide = Sugar + Base + Phosphate

Comparison chart

Nucleoside versus Nucleotide comparison chart

Nucleoside		Nucleotide	
Chemical Composition	Sugar + Base. A nucleoside consists of a nitrogenous base covalently attached to a sugar (ribose or deoxyribose) but without the phosphate group. When phosphate group of nucleotide is removed by hydrolysis, the structure remaining is nucleoside.	Sugar + Base + Phosphate. A nucleotide consists of a <u>nitrogenous base</u> , a sugar (ribose or deoxyribose) and one to three phosphate groups.	
Relevance in medicine	Several nucleoside analogues are used as antiviral or anticancer agents.	Malfunctioning nucleotides are one of the main causes of all cancers known of today.	
Examples	Examples of nucleosides include cytidine, uridine, adenosine, guanosine, thymidine and inosine.	Nucleotides follow the same names as nucleosides, but with the indication of phosphate groups. For example, 5'-uridine monophosphate.	

Nucleotide: Nucleotide is composed of a nitrogenous base, sugar and a phosphate group.

Nucleoside: Nucleoside is composed of only a nitrogenous base and a phosphate group

Define enzymes? Write classification of enzymes? (10 marks)

Enzymes are protein molecules in cells which work as catalysts. Enzymes speed up chemical reactions in the body, but do not get used up in the process. Almost all biochemical reactions in living things need enzymes. With an enzyme, chemical reactions go much faster than they would without the enzyme.

There were six classes of enzymes that were created so that enzymes could easily be named. These classes are:

- 1) Oxidoreductases, 2) Transferases, 3) Hydrolases, 4) Lyases, 5) Isomerases, 6) Ligases.

CLASSIFICATION OF ENZYMES		
Group of Enzyme	Reaction Catalysed	Examples
1. Oxidoreductases	Transfer of hydrogen and oxygen atoms or electrons from one substrate to another.	Dehydrogenases Oxidases
2. Transferases	Transfer of a specific group (a phosphate or methyl etc.) from one substrate to another.	Transaminase Kinases
3. Hydrolases	Hydrolysis of a substrate.	Estrases Digestive enzymes
4. Isomerases	Change of the molecular form of the substrate.	Phospho hexo Isomerase, Fumarase
5. Lyases	Nonhydrolytic removal of a group or addition of a group to a substrate.	Decarboxylases Aldolases
6. Ligases (Synthetases)	Joining of two molecules by the formation of new bonds.	Citric acid synthetase

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1) Oxidoreductases

- catalyze oxidation reduction reactions
- further divided into four subgroups;
- Oxidase,
- Dehydrogenases, • Hydroperoxidases • Oxygenases.

2) Transferases

- These bring about a transfer of functional groups such as
- phosphate and
- amino group

from one molecule to another molecule called donor and acceptor molecules respectively

- The common examples of this group are
- Transminases
- Phosphotransfrases (Kinases)
- Hexokinase is a phosphotransfease which catalyze the transfer of phosphate groups.
- $\text{Glucose} + \text{ATP} \rightarrow \text{Glucose 6-phosphate} + \text{ADP}$.

3) Hydrolases

- These enzymes catalyze hydrolysis, i.e.
- add water molecule to the substrate which is simultaneously decomposed; the functional group of substrate is transferred to water.
- Common example of hydrolases are:
- Protein hydrolyzing Enzymes (peptidases).
- Carbohydases
- Lipid hydrolyzing enzymes e.g. Lipases and • Phospholipases.

4) Lyases

- These enzymes catalyze the addition of
- NH_3 ,
- H_2O or
- CO_2 to double bonds or
- the removal of these groups leaving behind double bonds.
- Lyases are included in a separate class because they catalyze these reactions by means other than hydrolysis or oxidation.

5) Isomerases

These enzymes catalyze the structural change within a single molecule by the transfer of groups within it, resulting in the formation of an isomeric form of substrate.

6) Ligases

- These enzymes catalyze condensation reactions joining two molecules by forming
 - C-O,
 - C-S,
 - C-N and
 - C-C bonds.
- The energy for condensation is provided by cleavage of high energy phosphates, e.g. ATP, GTP etc.

Bee Wax?

Bees-wax is secreted by the honeybees that use it to form the combs. • It is a mixture of waxes

- chief constituent is myricyl palmitate

tRNA?

Once at the ribosome, an initiator **tRNA** binds the amino acid to the ribosome to start translation. It carries the amino acids and binds to the Messenger RNA (mRNA) to form proteins Each **tRNA** can be used repeatedly to be transcribed from DNA in nucleus.

Lipoxins

Lipoxins, an acronym for lipoxygenase interaction products, are bioactive autacoid metabolites of arachidonic acid made by various cell types.

Define saponification Number? (3marks)

The number of milligrams of the sodium hydroxide and potassium hydroxide of free or combined state of fats or wax to completely saponifying are called Saponification number.

- Saponification
- Hydrolysis of a fat by an alkali is called saponification
- The resultant products are glycerol and the alkali salts of the fatty acids, which are called "soaps"
- The number of mgs of NaOH/KOH required to saponify the free and combined FA in one gram of a given fat is called its saponification number The amount of alkali needed to saponify a given quantity of fat will depend upon the number of carboxylic (–COOH) group present
- Thus fats containing short chain fatty acids will have more –COOH groups per gram than long- chain fatty acids and this will take up more alkali
- And hence will have higher saponification number

What is meant by rancidity and what is rancidity of fats?

- Rancidity
- Definition:
 - It is a physico-chemical change in the natural properties of the fat leading to the development of unpleasant odor or taste or abnormal color
 - It occurs particularly on aging after exposure to atmospheric oxygen, light, moisture, bacterial or fungal contamination and/or heat.
- Saturated fats resist rancidity more than unsaturated fats that have unsaturated double bonds.

- *Rancidity is due to*
- Oxidation • Hydrolysis • Oxidative Rancidity

Rancidity is a very general term and in its most general **meaning**, it refers to the spoilage of a food in such a way that it becomes undesirable (and usually unsafe) for consumption. When people say that a food has "gone bad," what they're usually talking about is **rancidity**.

Rancidification. **Rancidity** is the complete or incomplete oxidation or hydrolysis of **fats** and oils when exposed to air, light, moisture or by bacterial action, resulting in unpleasant taste and odor. When these processes occur in food, undesirable odors and flavors can result.

What is the composition of bile?

The **composition** of gallbladder **bile** is 97% water, 0.7% **bile** salts, 0.2% bilirubin, 0.51% fats (cholesterol, fatty acids, and lecithin), and 200 meq/l inorganic salts.

What is the interactions of DNA?

DNA-binding proteins are proteins that have **DNA**-binding domains and thus have a specific or general affinity for single- or double-stranded **DNA**. Sequence-specific **DNA**-binding proteins generally **interact** with the major groove of B-**DNA**, because it exposes more functional groups that identify a base pair.

. What is enzyme kinematics?

Enzyme kinetics involves the measurement of the rate at which chemical reactions that are catalyzed by enzymes occur. Knowledge about the kinetics of an enzyme can reveal useful information about its catalytic mechanism, role in metabolism, factors that impact its activity, and mechanisms of inhibition

Five Function cAMP?

Short ans

cAMP, cyclic AMP, or 3',5'-cyclic adenosine monophosphate) is a second messenger important in many biological processes. **cAMP** is a derivative of adenosine triphosphate (ATP) and used for intracellular signal transduction in many different organisms, conveying the **cAMP**- dependent pathway.

Long ans

Combinations of lipid and protein (lipoproteins) serve as the means of transporting lipids in the blood, Importantly, lipids provide the hydrophobic barrier that permits partitioning the aqueous contents of cells and subcellular structures as; phospholipids and sterols are the major structural elements of biological membranes.

- Different combinations of lipids and proteins produce particles of different densities
- ranging from chylomicrons to high-density lipoproteins

A **lipoprotein** is a **biochemical** assembly whose primary purpose is to transport **hydrophobic lipid** (a.k.a. **fat**) molecules in water, as in blood or **extracellular fluid**. They have a single-layer **phospholipid** and

cholesterol outer shell, with the hydrophilic portions oriented outward toward the surrounding water and lipophilic portions of each molecule oriented inwards toward the lipids molecules within the particles.

five functions of cyclic AMP 5

- Acts as second messenger in the cell
- It has role in glycogen metabolism
- cAMP, glycogenolysis
- cAMP TAG metabolism
- cAMP lipolysis
- It decreases cholesterol synthesis
- It causes activation of protein kinases which in turn activate or deactivate other enzymes.
- It regulates the cell membrane permeability, by increasing permeability of cell membrane to H₂O, Na⁺, K⁺ & Ca⁺²
- Moreover, it regulates
- insulin secretion, catecholamine biosynthesis & Melatonin synthesis
- Cyclic GMP is synthesized from GTP
- It serves as a second messenger in response to nitric oxide during relaxation of smooth muscle (especially blood vessels) so it has role in smooth muscle relaxation and vasodilatation.

It also has role in

- Protein phosphorylation
 - Neurotransmission
 - Insulin action
 - Regulation of sodium channels
- cAMP, cyclic AMP, or 3',5'-cyclic adenosine monophosphate) is a second messenger important in many biological processes. cAMP is a derivative of adenosine triphosphate (ATP) and used for intracellular signal transduction in many different organisms, conveying the cAMP-dependent pathway

TAGs Store in Plant and Vertibrate?

Triacylglycerols (TAGs), which consist of three fatty acids bound to a glycerol backbone, are major storage lipids that accumulate in developing seeds, flower petals, pollen grains, and fruits of innumerable plant species. These storage lipids are of great nutritional and nutraceutical value and, thus, are a common source of edible oils for human consumption and industrial purposes

Two Example of Purine bases?

two purine bases, adenine and guanine,

Three Example of Pyrimidine?

thymine, cytosine, and Uralic,

what is mean by protein folding?

Protein folding is a process by which a polypeptide chain **folds** to become a biologically active **protein** in its native 3D structure. ... The amino acids in the chain eventually interact with each other to form a well-defined, **folded protein**.

Name two second messenger of nucleotides? (2marks)

Second messengers: Nucleotides, such as

1. Cycloadenosine mono phosphate(cAMP)
2. Cyclic Gaunoadenosine mano phosphate(cGMP)

What are simple lipids? give two types of simple lipids. (2 marks)

A simple lipid is a fatty acids of different type of alcohol and carry no other substances . A simple lipid is belong to the heterogeneous class of predominantly non polar in nature. They are insoluble in water but soluble in organic solvent, such as chloroform and benzene. Simple Lipids: Fatty acids ester of different alcohol. Fats: Fatty acid ester of different glycerol. Oil and fats are in liquid state. They are insoluble in water but soluble in organic solvent such as chloroform and benzene. Waxes: Solid ester of fatty acid ester .They are insoluble in water due to weak polar nature of ester group.

Functional Groups:

The most important functional groups of pyrimidines and purines are

- ring nitrogens
- carbonyl groups
- exocyclic amino groups

Unnatural Pyrimidine Bases example

- Fluorouracil (5FU) & • 6-Aza Cytosine (AZC)

Function of tRNA

- The t RNA molecules serve as ADAPTERS for the translation of information in the sequence of nucleotides of the mRNA into specific amino acids.
- There is at least one (and often several) specific type of tRNA molecule for each of the amino acids commonly found in proteins.
- Each t RNA carries its specific amino acid to the site of protein synthesis.
- There it recognizes the genetic code word on mRNA (codon) and this specifies the addition of its amino acids to the growing peptide chain.

How light produce in fireflies

The light produced by fireflies is the result of a reaction involving the protein luciferin and ATP, catalyzed by the enzyme luciferase

RBC contain large amounts of the oxygen-transporting protein hemoglobin. (c) The protein keratin, formed by all vertebrates, is the chief structural component of hair, scales, horn, wool, nails, and feathers .

About Contractile Proteins :

- These proteins are involved in muscle contraction and relaxation – Myosin of thick filaments – Actin of thin filaments of skeletal muscles
- Structural proteins provide mechanical support e.g collagen
- Contractile proteins help in the movement of muscle fiber and microvilli
- Some proteins present in the cell membrane, cytoplasm and nucleus act as receptors

Function of bile

The emulsification of dietary fats in intestinal canal, brought about by bile salts, is a prerequisite for digestion and absorption of fats. • The bile salts, act to break apart the fat globules in the small intestines and allow them to become more "soluble" for absorption.

MCQ FINAL TERMS 2021 COLLECTION FILES

1. Reversible inhibitors binds through _____ **Non Covalent bond**
2. DNA disruption occurs in laboratory at _____ **pH, Heated above 80°C or Salt concentration**
3. Archidonic acids is formed by _____ **Linoleic acid**
4. Co enzymes are formed when proteins bind _____ **Metallic , organic compound NAD etc**
5. Chief components of bee wax is _____ **myricyl palmitate**
6. Bile is synthesized by _____ and stored in _____ **- liver-Gallbladder**
7. Eukaryotic ribosomes have 2 sub units _____ **larger 60s and smaller 40s On. -14s**

8. Kw of water at 25°C is 10^{-14} .
9. Michaelis-Menten kinetics is the exception for regulatory enzymes
10. Optimum pH of pepsin is pH 2
11. phosphorylation of sugar result in D-glucose-6-phosphate
12. No of Amino Acids often occur in B turns 2
13. Which doesnot occurs in a-Helices Glycine,
14. Side chain in sterols is at C17
15. DNA Helix two strand of DNA hold together by Hydrogen Bonding
16. pKa value of Alanine 2.32
17. Purine includes (Adenine and guanine)
18. Thymine and uracil are different by one methyl group (Methyl group)
19. Triacylglycerole are composed of three fatty acids and joined with one glycerol by Ester linkage
20. Which of the following is a Halogens chlorine, bromine and iodine
21. HDL contain 50% Protein
22. About 80-85% of CO₂ is carried in blood as bicarbonates
23. No of carbons in Palmitic Acid 16C
24. (RNA)—the "working copies" of the (DNA) -
25. The difference between the energy levels of the ground state and the transition state is the activation energy,
26. Aromatic Amino-Acids are Phenylalanine, Tyrosine and Tryptophan
27. Carbohydrates and lipids forms glycosphingolipids
28. Polyunsaturated Fatty Acids (PUFAs) contains no of double bonds (More than one)

29. Alpha shows the which structure of proteins **Secondary structure**
30. The conjugated **double bonds** of purine and pyrimidine derivatives **absorb ultraviolet light.**
31. The formula of slope is
$$\text{Slope} = \frac{K_m}{V_{\max} \cdot \text{app}}$$
32. At pH 12 predominant glycine is _____ **xH₂N-CH₂-COO-**
33. Simple triglycerides Fatty acids connected to glycerol are of the same type **eg. tripalmitin.**
34. Platelet aggregation is the culminating step in the cardiovascular diseases due to **atherosclerosis**
35. he aldehyde reduction product of glucose is the molecule **sorbitol**
36. glycerol is converted to glycerol 3 phosphate _____ by enzyme **dehydrogenase**
37. In DNA cytosine is 18% then adenine would be _____ **32%**
38. Which of the following is levulose _____ **Fructose**
39. One letter symbol of glycine is _____ **G**
40. Most proteins can be denatured by heat, which has complex effects on the weak interactions in a Protein **Hydrogen bonds**
41. Pyrimidine include in both DNA and RNA _____: Cytosine (C)
42. Both DNA and RNA contain the same _____ **Plurine bases**
43. Table sugar is ... **Sucrose**
44. PI of glycine is **5.97**
45. PL of alanine is **5.7**
46. Glutamate PI is **3.22**
47. PI of histidine..... **7.59**
48. Histandine has **3 Disassociate Hydrogen.**
49. 1 torr = **1mmHg**

50. carbamates account for about 15% of the CO₂ in venous blood
51. one gram of Glucono delta-lactone yields roughly the same amount of metabolic energy as one gram of sugar
52. Amino sugar is formed by removal of OH at C-2 of the parent monosachharide is replaced with an amino group.
53. Pk₃ of histidine is 9.2
54. Sunflower shaped Osazone Maltose
55. The symbol of tyrosine is Y
56. P50 is approximately 26.6mm Hg for hemoglobin
57. at 5' of DNA there is a free Phosphate group
58. Triple bond is present between Guanine and Cytosine
59. DNA sugars are linked to (N-1 of a pyrimidine or N-9 of a purine)
60. Major part of chylomicrons triacylglycerol 90%
61. Hb has a hybrid sigmoid, binding curve for O₂
62. Phosphatidylcholine is formed from (phosphatidic acid+Choline)
63. Blood Group Antigen present in all common blood types H
64. The Lineweaver-Burk plot is diagnostic for competitive inhibition
65. Enzymes catalyze condensation reaction joining two molecules by forming C-O, C-S, C-N and C-C bonds Ligase
66. Trans form of melic acid is: fumaric acid
67. Fruit suger is : fructose.
68. Saminal fluid is rich in : lactose.
69. Simplest amino acid: glycine

70. in glycine R group is : H
71. Enthalpy denoted by : H
72. Negative charge on DNA is due to phosphate group
73. Iodine number of olive oil is : 79-88
74. VLDL composed of : TAG
75. Saturated lipids increase: LDL
76. PKA of glycine: 2.34

GRAND QUIZ SOLVED BY RAMZAN SOURO AND KERNAL CAPRICORN And SEHAR ZOOLOGIST

1. Long chain omega 3 fatty acid such as alpha linolic acid and their deravatives have _____ effects.

Inflammatory

Inhibitory

Antagonist

Anti-inflammatory

2. Which of the following statement about beta bend is False?

They are short region usually involving for successive amino acid residue.

They often connect strands of anti-parallel beta-sheets

They reverse the direction of a polypeptide chain , helping it form a compact, globular shape

For the formation of the bend, the carbonyl oxygen of the first residue forms a peptide bond with the amino-group hydrogen of the fourth residue.

3. In case of long chain fatty acids(LCFA) the -----portion is predominant

Hydrophobic

Hydro philic

4. The sigmoidal binding curve of hemoglobin for oxygen is possible due to----- structure of hemoglobin.

Multi-subunit

Single-subunit

5. Which of the following is example of derive lipid-----

Carotenoid

Steroid

Terpenes

All of above

6. How many amino acids in the alpha-chain of hemoglobin

141

146

543

144

7. The example of natural porphyrins include-----

Cytochrome C

Heamoglobin

Myoglobin

All options are correct

8. Amphipathic means that:

One end of the molecule is negative, the other is positive.

One end of the molecule is hydrophobic, the other hydrophilic

One end of the molecule is carbohydrate, the other is protein

All of given

9. Fatty Acids are classified on the basis of -----

Hydrocarbon chain length

Degree of saturation

Dietary Requirement

All of above

10. Out of 20 standard amino acids,----- contains a secondary amino group and is called an imino acid.

Proline

Serine
Methionine
Histidine

11. Which of the following is not a lipid?

Oil

Fat

Wax

Protein

12. -----is a fatty acid with one double bond and is abbreviated as 18:1

Palmitic acid
Glacial acetic acid
Tartaric acid

Oleic acid

13. The side chain of ----- amino acid are proton acceptors.

Acetic acid

Neativley charged

Lysine

Alpha carbon

14. In contract to myoglobin , hemoglobin can bind -----oxygen molecules one at each of the heme group

Four

Five
One
Two

15. The hydrolysis of sucrose to glucose and fructose Is catalyzed by sucrose, which is also present in the intestinal brush border like lactase and maltase. Sucrase is also known as

Invertase

Furanose
Glycogen dehydrogenase
Amylase

16. Which among the following is non-essential amino acid?

Serine

Threonine
Lysine
Histidine

17. Natural lipids are readily soluble in

Mercury

Oil

Water

Organic solvent

18. Protein present in cell membrane may function as ----- or transporters.

Receptors

Hormones

Immunoglobulin

Storage proteins

19. -----structure of proteins refers to particularly stable arrangement of amino acid residue giving rise to recurring structural patterns.

Primary

Secondary

Tertiary

Quaternary

20. The formation of furfural products and their condensation with organic phenols to give characteristic coloured compounds forms the basis of biochemical tests used for the detection of carbohydrates. An example of such test is

Molisch's test

Benedict test

Ninhydrin test

Grease spot test

21. Which of the following occurs when hydrogen is reacted with vegetable oil?

The hydrogenated vegetable oil will contain fewer trans fats

The hydrogenated vegetable oil will become solid at room temperature

The hydrogenated vegetable oil will become polarized

The hydrogenated vegetable oil will become a saturated fat

22. The most frequently used systematic nomenclature names the fatty acid after the hydrocarbon with oic being substituted for the final

E

D

A

B

23. Some proteins contain additional amino acids that arise by modification of an amino acid already present in a peptide i.e, after the protein has been synthesized. An example of such an amino acid is:

Lysine

5-hydroxylysine

Peptidyl proline

Glutamic acid

24. All of the following are involved in stabilizing the three dimensional tertiary structure of proteins except:

Glycosidic bond

Hydrophobic interaction

Disulphide bridges

Hydrogen bond

25. The carbon atoms in fatty acids are numbered , beginning with the carbonyl carbon as----

C1

C2

C3

C4

26. The property of co-operative binding of oxygen to different subunits of macromolecules is applicable to-----

Heamoglobin

Myoglobin

27. The position of any _____ in fatty acids are specified relatives to the carboxyl carbon by superscript numbers following (delta)

Carbon atom

Hydrogen atom

Double bond

R-group

28. In secondary structure of protein _____ normally reflect the properties of R-group as _____

Beta pleated sheets, polar

Beta helix,aromatic

Alpha helix,non-polar

Secondary form of alpha helix, non-polar

29. In myoglobin and hemoglobin,heme is covalently linked with _____ amino acid(eighth residue of F helix)

Histidine F8

Alanine F8

Both

None of these

30. Based upon the properties the R group mainly polarity and abiity to interact with water, amino acids may be classified into _____main classes

two

three

five

eleven

31. A plot of degree of saturation (Y) measured at different partial pressure of oxygen (pO₂) is called

Oxygen dissociation curve

Carbon dissociation curve

Nitrogen dissociation curve

none

32. Carbon dioxide and water combine to form

Hydrogen carbon ion

Hydrogen ion

Hydrogen bicarbonate

Carbonic acid

33. Among aromatic amino acids _____ is polar while _____ is non polar.

Phenyl alanine , tyrosine

Tryptophan, lysine

Phenyl alanin, glycine

Tyrosine, alanine

34. Partial hydrogenation has an undesirable effect including _

Cis bond convert into trans

Trans bond convert into cis

35. All of the following are true for lactose EXCEPT

It is a reducing sugar

It is found abundant in grape juice

It is dextrorotatory

It is made up of galactose and glucose

36. In the lungs, the pH of blood is ____ because CO₂ is being exhaled

Neutral

Higher

Lower

Zero

37. Fats are the ____ fatty acids and glycerol

Esters

Ether

Isomer

Tautomer

38. Which of the following is example of derived lipids _____

Carotenoid

Steroid

Terpenes

All of above

39. Only haemoglobin dissociation curve bohr effect decreased affinity of haemoglobin for ____ gas caused by an increase of carbon dioxide pH etc.

Oxygen

Carbon dioxide

Ozone

Nitrogen

40. Which is the characteristic of biological membrane?

Membrane contain lipid that polymerize into one large molecule

Membrane contain protein and amphipathic lipids

Membrane have an asymmetrical micelle structure

Membrane have hydrophobic group on the surface

41. Histidine generally considered to be a ____ amino acid

Polar

Non-polar

42. Which statement best describes the domain found in the protein?

It is a section of protein structure sufficient to perform a particular chemical or physical task such as binding of a substrate or other ligand

It is simply a recognizable folding pattern involving two or more elements of secondary structure and the connection between them

It is the folding pattern of the secondary structural elements into a three-dimensional conformation

It is non regular secondary structure that does not have a repeating element

43. The Bohr Effect / Shift moves the oxygen saturation curve in what direction

Down and right

Down and left

44. Which of the following is positively charged at physiological pH?

Glutamate

Aspartate

Tyrosine

Arginine

45. The family of polyunsaturated fatty acids (PUFAs) with a double bond between the third and fourth carbon from the methyl end of the chain are of special importance in human _____

Mental health

Nutrition

46. Upon reaction with strong acids pentoses produce _____ with hexoses produce _____

Furfural, hydroxyl methyl furfural

hydroxyl methyl furfural, Furfural,

aldehydes, ketones

deoxy sugars, amino sugars

47. proteins involved in respiration include haemoglobin, myoglobin and _____

fibrin

cytochromes

cellulases

collagen

48. all amino acids except _____ have a chiral carbon and have two possible isomers.

Lysine

Glycine

Glutamic acid

Tryptophan

49. _____ is an example of contractile protein.

Myosin

Amylase

Haemoglobin

Fibrinogen

50. The protein or globin portion of myoglobin thus creates a special microenvironment for _____ that permits the reversible binding of one oxygen molecule (oxygenation)

Heme

Mg

Ca

None of the above

51. The partial pressure of oxygen needed to achieve half-saturation of the binding sites is called ____

P50

P60

P70

None

52. Which of the following are saturated fatty acids

Butyric acid

Linoleic acid

Palmitic acid

Oleic acid

53. The production of marrow cells takes place within:

The bone marrow

Liver

Spleen

Kidney

54. The binding of oxygen to one heme group enables an oxygen binding to the second heme group of the same hemoglobin molecule is called ____

Cooperative binding

Structural binding

Amino acid binding

Nucleic acid binding

55. Identify the amino acids containing non-polar, aliphatic R groups

Phenylalanine, tyrosine and tryptophan

Glycine, alanine, leucine

Lysine, arginine, histidine

Serine, threonine, cysteine

56. The process by which oxygen enters the blood from the alveoli is

Facilitated diffusion

Diffusion

Active transport

None

57. Many proteins have multiple polypeptide subunits (from two to hundred). A multisubunit protein is also referred to as a multimer.

the repeating structural unit in such a multimeric protein is called a ____

Protomer

Amino acid

Monosaccharides

Motif

58. occurring, genetically coded amino acids used by some methanogenic archaea.

Pyrrolysine

Phenylalanine

Aspartic acid

Sialic acid

59. Fatty acids are found in the unesterified form as ____ a transport from the plasma.

Oils

Free fatty acids

Esters

Bounded fatty acids

60. The pK₂ value for glycine is ____

2.34

5.97

9.60

7.65

61. What is the solubility of lipids in water?

Partially soluble

Soluble

Insoluble

Partially insoluble

62. The physical state of fat at room temperature is ____

Gas

Solid

Liquid

Plasma

63. The surface of myoglobin is polar, important for interacting with ____ aqueous environment of cytosol.

Polar

Non-polar

Organic

Inorganic

64. Oxygen stored in red muscle myoglobin is released during O₂ deprivation (e.g severe exercise)

To be used in muscle mitochondria for ____

Aerobic synthesis of ATP molecules

Anaerobic synthesis of ATP molecules

Aerobic synthesis of more O₂

Anaerobic synthesis of more CO₂

65. The property of co-operative binding of oxygen to different subunit of macromolecules is applicable to ____

Haemoglobin

Myoglobin

66. The ____ part of myoglobin does not directly interact with the heme, but helps stabilize the binding of oxygen to the ferrous iron

Distal histidine E7

Distal alanine

Distal copper

Iron

67. The side chain of ____ amino acids are proton acceptor

Acidic group

Negatively charged

Lysine

Alpha carbon

68) The following sterol is present in the cell membrane of fungi? Select the correct

option

Campesterol

Ergosterol

Stigmasterol

Sitosterol

69) A loss of three-dimensional structure sufficient to cause loss of function of the protein is called

Select the correct option

denaturation

catalysis reactivation

misfolding

70) Proteins present in cell membrane may function as or transporters.

Select the correct option **receptors**

hormones immunoglobulins storage

proteins

71) Phospholipids are molecules that contain

Select the correct option

positively charged functional groups **hydrophilic heads and**

hydrophobic tails Cholesterol and water

long water-soluble carbon chains

72) Disulphide bonds are formed between two molecules of the amino acid cysteine. The reaction involves:

Select the correct option **oxidation of**

sulfhydryl groups reduction of sulfhydryl

groups methylation of a carbon

phosphorylation of a carbon

73) A buffer is a solution that resists change in pH following the addition of an acid or base. Among amino acids, only

has an R group ($pK_a = 6.0$) providing significant buffering power near the neutral pH usually found in the intracellular and extracellular fluids of most animals. .

Select the correct option **histidine**

glycine glucose

aspartic acid

74) The surface of myoglobin is polar, important for interacting with ----- aqueous environment of cytosol.

Select the correct option **polar**

non polar organic

inorganic

75) Based upon the properties of the R group, mainly polarity and ability to interact with water, amino acids may be classified into main classes.

Select the correct option two

three **five**

eleven

76) Eicosanoids are derived from either fatty acids.

Select the correct option omega-3 (W-

3)

omega-6 (W-6) none of given

omega-3 (W-3) or omega-6 (W-6)

77) Which is a characteristic of all the fatty acid components in this lipid? Select the correct option

They all are hydrophilic because they contain oxygen. **They all contain an unbranched carbon chain.**

They all contain unconjugated cis double bonds

They all are joined to glycerol through an ester bond.

78) Alpha helices are found in very diverse proteins such as which is a fibrous protein and which is a globular protein.

Select the correct option **keratin,**

myoglobin

keratin, amylase, myoglobin

cellulose, keratin

79) The names of saturated fatty acids end in one of the following suffixes. Select the correct option

-enoic

-ol

-dehyde

-anoic

80) Hydrogenated fats are used by many food producers to provide following properties

Select the correct option Provide rich

texture Increase shelf life Increase

melting point **All**

81) The partial pressure of oxygen needed to achieve half-saturation of the binding sites is called

Select the correct option **P50**

P60 P70

None

82) The following salt is water insoluble

Select the correct option

K

Na Mg

Zn

83) A plot of degree of saturation (Y) measured at different partial pressures of oxygen (pO_2) is called

Select the correct option **Oxygen**

dissociation curve Carbon

dissociation curve Nitrogen

dissociation curve None

84) The characteristic pH at which the net electric charge on amino acid molecule is zero is called

Select the correct option cationic pH

isoelectric point

ampholytic point

anionic point

85) The ----- part of myoglobin does not directly interact with the heme, but helps stabilize the binding of oxygen to the ferrous iron Select the correct

option

Distal histidine E7 Distal

alanine

Distal copper Iron

86) Apart from the 20 standard amino acids, some other amino acids may also be synthesized and become a part of the protein. An example of such an amino acid is which is a naturally occurring, genetically coded amino acid used by some methanogenic archaea.

Select the correct option

pyrrolysine phenylalanine

aspartic acid sialic
acid

87) Which of the following occurs when hydrogen is reacted with vegetable oil? Select the correct option

The hydrogenated vegetable oil will contain fewer Tran's fats.

The hydrogenated vegetable oil will become solid at room temperature.

The hydrogenated vegetable oil will become polarized.

The hydrogenated vegetable oil will become a saturated fat.

88) Poly unsaturated fatty acids (like alpha-linolenic acid) with a double bond between C-3 and C-4 are called fatty acids

Select the correct option omega-4

omega-3

omega-3,4

None of given

89) In secondary structure of protein the properties of R-Group as normally reflect. Select the correct option

Beta pleated sheets, polar Beta helix,

aromatic Alpha helix, non-polar

Secondary form of alpha helix, non-polar

90) The three dimensional structure of a protein must have an external surface appropriate for its environment. For example, plasma proteins contain amino acids on the surface to remain soluble in an aqueous environment.

Select the correct option hydrophobic

non-polar polar

neutral

91) Which of the following is positively charged at physiological pH? Select the correct option

Glutamate

Aspartate

Tyrosine

Arginine

92) How many amino acids in the α chain of hemoglobin.

Select the correct option **141**

146

543

144

93) Maltose comprises of two glucose molecules that are joined together by glycosidic linkage.

Select the correct option B (1-4)

B (1-2)

α (1 2)

α -(1,4)

94) Disulfide bonds most often stabilize the native structure of: Extracellular protein Dimeric protein Intracellular protein Multisubunit protein Which property can be shared by lipids and terpenes?

Both can be very hydrophobic molecule Both can

contain a saturated fatty acid Both can contain

isoprene

Both can form micelles

95) The net charge on alanine in acidic solution (pH less than 2) is Negative

Positive Neutral

First negative then become neutral

96) Which of the following fatty acids would have the lowest critical micelle concentration

C4-COOH C5-

COOH C6-

COOH C8-

COOH

97) Based on its structural similarity to other lipids, lipid most likely functions as _____

A vitamin required for vision A

membrane component An energy

storage molecule A sex hormone

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<https://m.me/join/AbYnliN2YEZo5Fs8>

What's app Group : VU Biology Zone

<https://chat.whatsapp.com/FmGdNtjc2pMEpCHnzpVjdO>

;Synthesis of lipoxins.

ANS: They are group of compounds produced by leukocytes.

- They are conjugated tetraenes.
- They have structural similarities to the LTs.

Synthesis:By insertion of molecular oxygen at two sites arachidonic acid by sequential action of 5 and 5-lipo oxygenase.

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How are enzymes classified?(10)

1. **ANS:** a substance produced by a living organism which acts as a catalyst to bring about a specific biochemical reaction.

The classification is as follows:

Group Name	Type of Reaction Catalysed	Example
Oxidoreductases	<i>Oxidation-reduction reactions</i>	Alcohol oxidoreductase (EC 1.1)
Transferases	<i>Transfer of functional groups</i>	Methyltransferase (EC 2.1)
Hydrolases	<i>Hydrolysis reactions</i>	Lipase (EC 3.1)
Lyases	<i>Addition to double bonds or single bonds</i>	Decarboxylases (EC 4.1)
Isomerases	<i>Isomerization reactions</i>	Epimerases and Racemases (EC 5.1)
Ligases	<i>Formation of bonds with ATP cleavage</i>	Enzymes forming carbon-oxygen bonds (EC 6.1)

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Q3: what are waxes its properties and classification.(10)

ANS: Waxes are a diverse class of organic compounds that are lipophilic, malleable solids near ambient temperatures. Waxes are insoluble in water but soluble in organic, nonpolar solvents.

Classification:

Animal waxes

- Beeswax - produced by honey bees
- Chinese wax - produced by the scale insect *Ceroplastes ceriferus*

Vegetable waxes

Soy wax - from soybean oil

- Tallow Tree wax - from the seeds of the tallow tree *Triadica sebifera*.

Mineral waxes

- Ceresin waxes
- Montan wax - extracted from lignite and brown coal

Petroleum waxes

- Paraffin wax - made of long-chain alkane hydrocarbons
- Microcrystalline wax - with very fine crystalline structure

Properties:

- Wax with colorful pigments added has been used as a medium in encaustic painting,
- and is used today in the manufacture of crayons, china markers and colored pencils.
- the sports of surfing and skateboarding often use wax to enhance the performance.

Q4: function of cAMP.(3)

ANS: cAMP is a second messenger, used for intracellular signal transduction, such as transferring into cells the effects of hormones like glucagon and adrenaline

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- It is also involved in the activation of protein kinases.
- In addition, cAMP binds to and regulates the function of ion channels such as the HCN channels.

Q5: how banaspati gee is prouduced from oil.(2)

ANS: Banspati Ghee is made with the combination of Hydrogenated Oils, Refined Sesame Oil. The ghee is manufactured state of the art multistage hygienically controlled plant. It gives a mouthwatering aroma and taste to your food. It is low in cholesterol which makes it safer for the heart patients. Vitamin A and D are added.

Q6: hydrogenation of fats.

ANS: **Hydrogenation** converts liquid vegetable oils into solid or semi-solid **fats**, such as those present in margarine. Changing the degree of saturation of the **fat** changes some important physical properties, such as the melting range, which is why liquid oils become semi-solid.

Q7: saponification and its end products.

ANS;Generally, saponification is a reaction between *triglycerides* and *sodium or potassium hydroxide* to yield **glycerol** and a **fatty acid salt (soap)**. The triglycerides are most often animal fats or vegetable oils.

Shortly, saponification is the alkaline hydrolysis of the fatty acid esters.

Saponification of *ethyl acetate* and *sodium hydroxide*,



Q8: write three characters of glycerols.

ANS: It is a colorless, odorless, viscous liquid that is sweet-tasting and non-toxic.

- The glycerol backbone is found in all lipids known as triglycerides.
- It is widely used in the food industry as a sweetener and humectant and in pharmaceutical formulations.

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Q9: function of bile salt.

ANS: The function of bile salts in the duodenum is to solubilize ingested **fat** and **fat-soluble** vitamins, facilitating their **digestion** and **absorption**.

Q10: example of condensation.

ANS: Condensation occurs when water droplets form due to cooling air.

Common **examples of condensation** are: dew forming on grass in the early morning,

Q11: PROPERTIES of nucleotide.

ANS: A nucleoside is a nitrogenous base and a 5-carbon sugar. Thus a nucleoside plus a phosphate group yields a nucleotide.

Nucleotides also play a central role in metabolism at a fundamental, cellular level.

In experimental biochemistry, nucleotides can be radiolabeled with radionuclides to yield radionucleotides.

Q12: nucleotide regulation.

ANS: Nucleotide biosynthesis is **regulated** by feedback inhibition in a manner similar to the **regulation** of amino acid biosynthesis .

The synthesis of purine **nucleotides** is controlled by feedback inhibition at several sites.

Q13: name two unnatural pyrimidine.

ANS: cytosine , thymine , uracil.

Q14: what is rancidity. which factors effect it?

ANS: *Rancidity* is the complete or incomplete oxidation or hydrolysis of fats and oils when exposed to ... agents can also delay or prevent rancidification by inhibiting the growth of bacteria or other micro-organisms that *affect* the process.

FACTORS:

Temperature: decomposition rate increases as temperature rises.

Q15: role of nueleotides energy currecy in cell.

ANS: These are adenosine triphosphate (ATP), flavin adenine dinucleotide (FAD), and nicotinamide adenine dinucleotide (NAD⁺). Most biosynthetic reactions require *energy*, which is usually supplied by ATP. ... Since ATP is so frequently used this way, it is

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commonly called the "*energy currency* of the *cell*."

Q16:simple lipids and its types.

ANS: These lipids belong to a heterogeneous class of predominantly nonpolar compounds, mostly insoluble in water, but soluble in nonpolar organic solvents such as chloroform and benzene. Simple lipids: esters of fatty acids with various alcohols. a. Fats: esters of fatty acids with **glycerol**.

Q17: name two structural homopolysaccharides.

ANS: Starch, Cellulose.

Q18: name factors that contract entropy.

ANS: Here are some situations in which entropy increases:

- The entropy increases whenever heat flows from a hot object to a cold object.
- It increases when ice melts, water is heated, water boils, water evaporates.
- The entropy increases when a gas flows from a container under high pressure into a region of lower pressure.
- It increases when you spray something out of an aerosol can or you let air out of a tire

Q19: composition of bile.

ANS: After eating, this stored **bile** is discharged into the duodenum. The **composition** of gallbladder **bile** is 97% water, 0.7% **bile** salts, 0.2% bilirubin, 0.51% fats (cholesterol, fatty acids, and lecithin), and 200 meq/l inorganic salts.

Q20: Enzyme kinetics.

Ans: Enzyme kinetics is the study of the chemical reactions that are catalysed by enzymes. In enzyme kinetics, the reaction rate is measured and the effects of varying the conditions of the reaction are investigated.

Q21: function of cGMP.

ANS: **cGMP** acts as a second messenger much like cyclic AMP. Its most likely mechanism of action is activation of intracellular protein kinases in response to the binding of membrane-impermeable peptide hormones to the external cell surface.

Q22: function of tRNA.

ANS: Function of tRNA. The job of tRNA is to read the message of nucleic acids, or

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nucleotides, and **translate** it into proteins, or **amino acids**. The process of making a protein from an mRNA template is called translation.

Q23: protein folding.

ANS: *Protein folding* is the physical process by which a *protein* chain acquires its native 3-dimensional structure, a conformation that is usually biologically functional, in an expeditious and reproducible manner.

Q24: km of mechail menton kinetic equation.

ANS: V_{max} is equal to the product of the catalyst rate **constant** (k_{cat}) and the concentration of the **enzyme**. The **Michaelis-Menten equation** can then be rewritten as $V = K_{cat} [Enzyme] [S] / (K_m + [S])$. K_{cat} is equal to K_2 , and it measures the number of substrate molecules "turned over" by **enzyme** per second.

Q25: what is duchne muscular dystrophy.

Ans: *Duchenne muscular dystrophy (DMD)* is a genetic disorder characterized by progressive *muscle* degeneration and weakness. It is one of nine types of *muscular dystrophy*. *DMD* is caused by an absence of dystrophin, a protein that helps keep *muscle* cells intact.

Q26:uses of cholesterol.

Cholesterol is a major component of all cell membranes and is used to make essential molecules such as hormones, fat-soluble vitamins, and bile acids to help you digest your food.

Q27: what is iodine number.

ANS: The **iodine value** (or **iodine** adsorption **value** or **iodine number** or **iodine** index) in chemistry is the mass of **iodine** in grams that is consumed by 100 grams of a chemical substance. **Iodine numbers** are often used to determine the amount of unsaturation in fatty acids.

Q28: glyceryl trinitrate (GTN).

ANS: Nitroglycerin, also known as *glyceryl trinitrate (GTN)*, is a medication used for heart failure, high has been confirmed by several persons in my laboratory, and I tested it several times on myself before I was certain that it has toxic *properties*.

Q29: modifide amino acid in collagen.

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Ans: A repeated sequence of three **amino acids** forms this sturdy structure. Every third **amino acid** is glycine, a small **amino acid** that fits perfectly inside the helix. Many of the remaining positions in the chain are filled by two unexpected **amino acids**: proline and a **modified** version of proline, hydroxyproline.

Q30: domain in the synthesis of protein.

ANS: A **protein domain** is a conserved part of a given protein sequence and (tertiary) structure that can evolve, function, and exist independently of the rest of the protein chain. Each domain forms a compact three-dimensional structure and often can be independently stable and folded. Many proteins consist of several structural domains. One domain may appear in a variety of different proteins. Molecular evolution uses domains as building blocks and these may be recombined in different arrangements to create proteins with different functions.

Q31: Galactosylceramidase

ANS: Galactosylceramidase is an enzyme that in humans is encoded by the GALC gene. Galactosylceramidase is an enzyme which removes galactose from ceramide derivatives.

Q32: what is N-glycosidic linkage.

ANS: In chemistry, a **glycosidic bond** or **glycosidic linkage** is a type of covalent **bond** that joins a carbohydrate (sugar) molecule to another group, which may or may not be another carbohydrate.

Q33: difference between fats and oils.

ANS: **difference between fats and oils** is that **fats** are typically solid at room temperature whereas **oils** are liquid at room temperature.

fats are composed of high amounts of saturated fatty acids . where as oils are composed of mainly unsaturated fatty acids.

Q34: natural sources of waxes.

ANS: Petroleum derived waxes.

Natural wax is also found on the surface of fruits.

Natural wax ester can be extracted from animals and plant.

Q35: function of Hsp70. Hsp70 has
as been assumed to protect the cell via its chaperone functions. HSP70 family

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members function molecular chaperones in an ATP. Hsp70-1 also has been detected on tumor-derived exosomes of membrane Hsp70-1 positive tumors.

Q36: howlight is prouduced in fireflies.

ANS: Light production in fireflies is due to a type of chemical reaction called bioluminescence. This process occurs in specialized **light**-emitting organs, usually on a **firefly's** lower abdomen. The enzyme luciferase acts on the luciferin, in the presence of magnesium ions, ATP, and oxygen to **produce light**.

Q37: STRUCTURAL importace and constrictle protein.

ANS: The Protein constitution of the myofibrils.

Myosin,Adenosinetriphosphatase Activity,Reaction with Actin,The Myosin Molecule.

Q38: why prolien does not stabilize in alpha helix?

ANS: Proline is formally **NOT** an amino acid, but an imino acid. ... When **proline** is in a peptide bond, it **does not** have a hydrogen on the α amino group, so it cannot donate a hydrogen bond to **stabilize** an α helix or a β sheet. It is often said, inaccurately, that **proline** cannot exist in an α helix.

Q39: define amolyte.

ANS: Definition of ammolite. plural ammolites. : a semi-precious gemstone consisting of fossilized ammonite shells. The winner will be sent an **ammolite** trophy, the official gemstone of the Alberta.

Q40: What are anomers.

ANS: Anomers are stereoisomers of cyclic sugars that differ in configuration only at the hemiacetal or hemiketal carbon.

Anomers are a unique type of stereoisomer, and are used when talking about carbohydrates.

Q41: what is stereoisomer.

ANS: stereoisomers are isomeric molecules that have the same molecular formula and sequence of bonded atoms (constitution), but differ in the three-dimensional orientations of their atoms in space. ... By definition, molecules that are **stereoisomers** of each other represent the same structural isomer.

Q42: what is tautomerism.

ANS: Tautomers are isomers of a compound which differ only in the position of the protons and electrons. ... A reaction which involves simple proton transfer in an

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intramolecular fashion is called a **tautomerism**. Keto-enol **tautomerism** is a very common process, and is acid or base catalysed.

Q43: carier of intermediate.

ANS: Intermediate carrier definition is - a transportation line participating in a through movement which neither originates nor terminates the passengers or freight

Q44:coenzyme definition.

ANS: A **coenzyme** is an organic non-protein compound that binds with an enzyme to catalyze a reaction.**Coenzymes** are often broadly called cofactors, but they are chemically different.

Q45: difference between oxidative and hydrolytic rancidity.

ANS: Hydrolytic rancidity refers to the odor that develops when triglycerides are hydrolyzed and free fatty acids are released.

This reaction ... **Oxidative**. **Oxidative** rancidity is associated with the degradation by oxygen **in the air**.

Q46: charateristics of enantiomers.

ANS: Enantiomers are pairs of molecules that are non-superimposable mirror images of each other.

A pair of **enantiomers** must be a chiral compound, which means it has a chiral carbon.

Enantiomers rotate the direction of plane polarized light to equal, but opposite angles and interact with other chiral molecules differently.

Q47: importace of sorbitol.

ANS: Sorbitol can be used as a laxative when taken orally or as an enema.

Sorbitol works as a laxative by drawing water into the large intestine, stimulating bowel movements.

Sorbitol is a low-calorie sweetener chemically extracted from glucose. It is used as an alternative to sugar in a range of foods, including low-calorie.

Q48: what is meant by pKa?

ANS: pKa Definition. pK_a is the negative base-10 logarithm of the acid dissociation constant (K_a) of a solution. $pK_a = -\log_{10}K_a$. The lower the pK_a value, the stronger the acid.

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Q49: difference between nucleoside and nucleotide.

ANS: A **nucleoside** consists of a nitrogenous base covalently attached to a sugar (ribose or deoxyribose) but without the phosphate group. A **nucleotide** consists of a nitrogenous base, a sugar (ribose or deoxyribose) and one to three phosphate groups.

Q50: Types of cyclic nucleotides.

ANS: A **cyclic nucleotide** (cNMP) is a single-phosphate nucleotide with a cyclic bond arrangement between the sugar and phosphate groups. Like other nucleotides, cyclic nucleotides are composed of three functional groups: a sugar, a nitrogenous base, and a single phosphate group.

Q51: Properties of nitrogenous bases.

ANS: A nitrogenous base is simply a nitrogen-containing molecule that has the same chemical properties as a base. They are particularly important since they make up the building blocks of DNA and RNA: adenine, guanine, cytosine, thymine and uracil.

Q52: Numbering of carbons of pentose sugar in nucleotides and nucleosides.

ANS: The 5-carbon sugars ribose and deoxyribose are important components of nucleotides, and are found in RNA and DNA, respectively.

Nucleotides and Nucleosides ... are pentose sugars, containing five carbon atoms.

BIO202 QUIZ NO : 1

SOLVED BY ALL ABOUT BIOTECH

(REMEMBER ME IN YOUR PRAYERS)

_____ is semi-quantitative test to detect presence of glucose in a solution.

Select the correct option

☒ Molisch's test

☐ Benedict's test

☐ Ninhydrin test

☐ None of given

[Click to See Answer & Move to Next Question](#)

The terminal methyl & _____ carbon of glucose, galactose, or mannose-forms the corresponding aldaric acid.

Select the correct option

☐ Carboxyl

☐ Ketone

☐ Aldehyde

☒ Carbonyl

Click to Save Answer & Proceed to Next Question

The condition in which the body fails to metabolize galactose is known as:

Select the correct option

- ☒ galactosemia
- ☐ glucosuria
- ☐ diabetes mellitus
- ☐ hypoglycemia

Click to Save Answer & Move to Next Question

Sugars are classified on the basis of number of carbon atoms present.
An example of a tetrose is:

Select the correct option.



erythrose



glyceraldehyde



ribose



glucose

Click to View Answer & Report Card

Carbohydrates are detected in the laboratory based upon certain properties. Benedict's test is routinely used to check for the presence of _____.

Select the correct option



reducing sugars



polysaccharides



ketohexoses



aldopentoses

Go back to Table of Contents & Previous Quiz Questions

Simplest carbohydrate is _____

Select the correct option

☐ Sucrose

☐ Glyceraldehyde

☒ Glucose

☐ Glycerine

Click to view answers / Show all correct answers

BIO202: Quiz 1

Question # 10 of 10 (Start time: 03:42:30 PM, 21 December 2020)

Monosaccharides can be subdivided further depending upon _____

Select the correct option



Number of carbon atoms



aldehyde groups



Number of carbon atoms and aldehyde or ketone groups



None of given



bc200201845 TAYYABA SAEED

BIO202: Quiz 1

Start Time: 03:42:30 PM, 21 December 2020

Question # 10 of 10 (Start time: 03:42:30 PM, 21 December 2020)

Total Marks: 1

Many antibiotics, like erythromycin, contain sugar derivatives such as _____ that are important for their antibiotic activity. .

Select the correct option



amino sugars



phosphorylated sugars



carboxylated sugars



oxidized sugars

Question # 3 of 10 (Start time: 03:51:11 PM, 21 December 2020)

Total Marks: 1

If the carbonyl group is at an end of the carbon chain (that is, in an _____) the monosaccharide is an aldose.

Select the correct option

☐ Carboxyl group☐ Ketone group☐ Carbonyl group☒ Aldehyde group[Click to View Answer & Move to Next Question](#)

Single Market

<input type="radio"/>	anomers
<input type="radio"/>	stereoisomers
<input type="radio"/>	epimers
<input type="radio"/>	enantiomers

○

 Springer Springer

Question # 7 of 10 (Start time: 03:52:52 PM, 21 December 2020)

Total Marks: 1

Sugars are classified on the basis of number of carbon atoms present. An example of a tetrose is:

Select the correct option

☒ erythrose☐ glyceraldehyde☐ ribose☐ glucose[Click to See Answer & Move to Next Question](#)

If the carbonyl group is at an end of the carbon chain (that is, in an _____) the monosaccharide is an aldose.

Select the correct option

☐ Carboxyl group

☐ Ketone group

☐ Carbonyl group

☒ Aldehyde group

Saving...

Carbohydrates are detected in the laboratory based upon certain properties. Benedict's test is routinely used to check for the presence of _____.

Select the correct option

- ☒ reducing sugars
- ☐ polysaccharides
- ☐ ketohexoses
- ☐ aldopentoses

[Click to Save Answer & Move to Next Question](#)

Question # 10 of 10 (Start time: 10:52 PM 21 December 2020)

Total Marks

The designation of a sugar isomer as the D form or as the L form is determined by its spatial relationship to the parent compound of the carbohydrates, which is _____.

Select the correct option.

☒ glyceraldehyde☐ glucose☐ glycerol☐ glycogen[Click to View Answer & Move to Next Question](#)

Question # 4 of 10 (Start time: 02:51:29 PM, 21 December 2020)

Total Marks: 1

Isomeric forms of monosaccharides that differ only in their configuration about the hemiacetal or hemiketal carbon atom are called _____.

Select the correct option

☒ anomers

☐ stereoisomers

☐ epimers

☐ enantiomers

Click on "Save Answer" & Move to Next Question

BIO202:Quiz 1

Question # 10 of 10 (Start time: 03:42:30 PM, 21 December 2020)

Monosaccharides can be subdivided further depending upon_____



Select the correct option



Number of carbon atoms



aldehyde groups



Number of carbon atoms and aldehyde or ketone groups



None of given



bc200201845 TAYYABA SAEED

The oxidation of carbonyl carbon in monosaccharides yield products known as:

Select the correct option

☒ aldonic acids

☐ uronic acids

☐ aldoses

☐ furfurals

Go to Quiz Summary & View all Quiz Questions

The substitution of a hydrogen for the hydroxyl group at C-6 of L-mannose produces _____.

Select the correct option:

☐ D-mannose

☐ L-glucose

☒ L-rhamnose

☐ L-mannosamine

[Click to Save Answer & Move to Next Question](#)

Sugars are classified on the basis of number of carbon atoms present. An example of a tetrose is:

Select the correct option

- ☒ erythrose
- ☐ glyceraldehyde
- ☐ ribose
- ☐ glucose

Click on Save Answer & Next to Next Question

Different sugars are utilized in various ways in the human body and hence occur in varying amounts in body fluids. Which fluid is rich in fructose?

Select the correct option

☒ seminal fluid

☐ blood

☐ tissue fluid

☐ cerebrospinal fluid

Click to Save Answer & View All Your Questions

The terminal methyl & _____ carbon of glucose, galactose, or mannose-forms the corresponding aldarc acid.

Select the correct option

- ☐ Carboxyl
- ☐ Ketone
- ☐ Aldehyde
- ☒ Carbonyl

[Click to Save Answer & Move to Next Question](#)

Question # 4 of 10 (Start time: 04:00:22 PM, 20 December 2020) Total Marks: 1

Glucose and galactose are epimers which differ in the configuration around carbon no. _____.

Select the correct option.

<input checked="" type="radio"/>	4
<input type="radio"/>	2
<input type="radio"/>	1
<input type="radio"/>	6

[View Question History](#)

BIO202: Quiz 1

Quiz Start Time: 03:32 PM, 21 December 2020

Question # 1 of 10 (Start time: 03:32:01 PM, 21 December 2020)

Total Marks: 1

If the carbonyl group is at an end of the carbon chain (that is, in an _____) the monosaccharide is an aldose.

Select the correct option

<input type="radio"/>	Carboxyl group
<input type="radio"/>	Ketone group
<input checked="" type="radio"/>	Carbonyl group
<input type="radio"/>	Aldehyde group

BIO202: Quiz 1

Quiz Start Time: 03:32 PM, 21 December 2020

Question # 2 of 10 (Start time: 03:32:43 PM, 21 December 2020)

Total Marks: 1

The designation of a sugar isomer as the D form or as the L form is determined by its spatial relationship to the parent compound of the carbohydrates, which is _____.

Select the correct option

<input checked="" type="radio"/>	glyceraldehyde
<input type="radio"/>	glucose
<input type="radio"/>	glycerol
<input type="radio"/>	glycogen

BIO202:Quiz 1

sec(s)

Quiz Start Time: 03:32 PM, 21 December 2020

Question # 3 of 10 (Start time: 03:33:31 PM, 21 December 2020)

Total Marks: 1

Glucono delta-lactone (GDL) is a type of lactone, commonly found in honey, fruit juices, personal lubricants, and wine. It hydrolyses in water to form _____ which has a _____ pH

Select the correct option

- | | | |
|----------------------------------|-------------------------|---|
| <input checked="" type="radio"/> | gluconic acid, acidic | / |
| <input type="radio"/> | glucose, neutral | / |
| <input type="radio"/> | glucuronic acid, acidic | / |
| <input type="radio"/> | glyceraldehyde, neutral | / |

BIO202:Quiz 1

sec(s)

Quiz Start Time: 03:32 PM, 21 December 2020

Question # 4 of 10 (Start time: 03:35:02 PM, 21 December 2020)

Total Marks: 1

When the oxygen from the -OH group in a monosaccharide is removed, the resulting compound formed is known as _____.

Select the correct option

- | | | |
|----------------------------------|----------------|---|
| <input checked="" type="radio"/> | deoxy sugar | / |
| <input type="radio"/> | phospho sugar | / |
| <input type="radio"/> | amino sugar | / |
| <input type="radio"/> | carboxyl sugar | / |

BIO202:Quiz 1

sec(s)

Quiz Start Time: 03:32 PM, 21 December 2020

Question # 5 of 10 (Start time: 03:36:30 PM, 21 December 2020)

Total Marks: 1

Glucuronide is a soluble, non-toxic compound that is excreted in the urine. It is produced when _____ forms conjugates with toxic substances including drugs, hormones and bilirubin.

Select the correct option

- | | | |
|----------------------------------|-----------------|---|
| <input type="radio"/> | glyceraldehyde | / |
| <input type="radio"/> | gluconic acid | / |
| <input type="radio"/> | glucose | / |
| <input checked="" type="radio"/> | glucuronic acid | / |

Question # 6 of 10 (Start time: 03:37:44 PM, 21 December 2020)

Total Marks: 1

The oxidation of carbonyl carbon in monosaccharides yield products known as:

Select the correct option

<input checked="" type="radio"/>	aldonic acids	/
<input type="radio"/>	uronic acids	/
<input type="radio"/>	aldoses	/
<input type="radio"/>	furfurals	/

Question # 7 of 10 (Start time: 03:39:02 PM, 21 December 2020)

Total Marks: 1

Glucose and galactose are epimers which differ in the configuration around carbon no. _____

Select the correct option

<input checked="" type="radio"/>	4	/
<input type="radio"/>	2	/
<input type="radio"/>	1	/
<input type="radio"/>	6	/

Question # 8 of 10 (Start time: 03:39:48 PM, 21 December 2020)

Total Marks: 1

With reference to carbohydrate structure, which type of isomers have nearly identical chemical properties but differ in their interaction with plane-polarized light?

Select the correct option

- | | | |
|-----------------------|-------------------------|----------------------|
| <input type="radio"/> | enantiomers | |
| <input type="radio"/> | anomers | <i>not confirmed</i> |
| <input type="radio"/> | epimers | |
| <input type="radio"/> | aldose-ketose isomerism | |

Question # 10 of 10 (Start time: 03:42:30 PM, 21 December 2020)

Total Marks: 1

Monosaccharides can be subdivided further depending upon _____

Select the correct option

- | | | |
|----------------------------------|--|--|
| <input type="radio"/> | Number of carbon atoms | |
| <input type="radio"/> | aldehyde groups | |
| <input checked="" type="radio"/> | Number of carbon atoms and aldehyde or ketone groups | |
| <input type="radio"/> | None of given | |

Solution provided BY Tabih

Fatima

Bio202# 3

Department: BS Biotechnology

Semester Fall 2020

Course Name: BIOCHEMISTRY (1)

Course Code: BIO202

Submitted to: Ayesha Mohuideen



Question: 01

Q1: How two types of” PHOSPHOLIPIDS” are differ chemically and structurally?

Answer:

Major types of phospholipids are given below:

1: Phosphatidic Acid (phosphatidate):-

Phosphatidic Acid is the smallest glycerophospholipids characterized by unique biophysical properties: a small head group, negative charge and a phosphomonoester group.

When it is hydrolyze it give rise to one molecule of glycerol, two molecule of fatty acids and a phosphoric acid.

Structurally, phosphatidic acid contains a glycerol, a saturated fatty acid, an unsaturated fatty acid and a phosphate group.

2.Phosphatidylethanolamine (cephalin):-

Phosphatidylethanolamine is one of most abundant lipids which is found in eukaryotes. It is evenly distributed between inner and outer leaflets.

It consists a combination of glycerol, esterified with two fatty acids and a phosphoric acid. The phosphate group in PE is combined with choline in phosphatidylcholine and the combined with ethanolamine.

Question No: 02

Which types of fats are considered as unhealthy fats and why? Also mention why Mediterranean Diet is considered as healthy one?

Answer:

There are two main types of potentially harmful dietary fats:

1.Saturated fats: This type of fat comes from food sources from cattle, such as red meat, poultry, and dairy products including full fat milk also that are full-fat. High-density lipoprotein (HDL or 'good') cholesterol and low-density lipoprotein (LDL or 'bad') cholesterol levels are elevated by saturated fats, which may raise the risk of cardiovascular disease and stroke. It makes the arteries “furred up” and an increase chance of heart attack.

2. Trans Fats: This form of fat appears in small quantities in certain foods, naturally. Total blood cholesterol, LDL cholesterol and triglyceride levels can be increased by these partially hydrogenated trans fats, but lower HDL cholesterol. It can create inflammation which is linked to heart problems, strokes, diabetes. This can also increase your risk of cardiovascular disease.

Mediterranean Diet: You lower the chances of death at any age by 20 percent by reducing the chance of developing heart disease or cancer with the Mediterranean diet. There are many benefits of this diet. It prevents you from heart diseases and strokes, reduces the risks of Alzheimer, and also protecting against type 2 diabetes. A Mediterranean diet is high in fiber that steadily digests, reduces enormous blood sugar swings, and can help you sustain a healthier weight.

Question No: 03

Make a comprehensive table in which enlist different types of lipoprotein (in the respective columns) also describe different properties, composition, function and biochemical activities of each type.

➤ **Chylomicrons:**

Composition: Chylomicrons consist of a primary central lipid center consisting mostly of triglycerides, but they bear esterified cholesterol and phospholipids, including other lipoproteins. Truncated apolipoprotein B-48, which is the largest non-exchangeable protein, is the backbone structural protein.

Function: Chylomicrons consist of a primary central lipid center consisting mostly of triglycerides, but they bear esterified cholesterol and phospholipids, including other lipoproteins. Truncated apolipoprotein B-48, which is the largest non-exchangeable protein, is the backbone structural protein.

Properties: Chylomicrons are the largest lipoproteins, with diameters of 75–600 nanometres (nm; 1 nm = 10⁻⁹ metre). They have the lowest protein-to-lipid ratio (being about 90 percent lipid) and therefore the lowest density.

Biochemical Activities: Chylomicrons transport lipids absorbed from the intestine to adipose, cardiac, and skeletal muscle tissue, where their triglyceride components are hydrolyzed by the activity of the lipoprotein lipase, allowing the released free fatty acids to be absorbed by the tissues.

➤ **Low-Density Lipoproteins (LDL):**

Composition: LDL contain 22% apoB-100, 22% phospholipids, 8% cholesterol, 42% cholesteryl esters, and 6% triglycerides (wt/wt).

Function: LDL is responsible for carrying cholesterol to cells that need it. Elevated LDL levels are associated with an increased risk of cardiovascular disease.

Properties: LDL particles are approximately 22 nm (0.00000087 in.) to 27.5 nm in diameter and have a mass of about 3 million daltons. Since LDL particles contain a variable and changing number of fatty acid molecules, there is a distribution of LDL particle mass and size.

Biochemical Activities: LDL delivers fat molecules to cells. LDL is involved in atherosclerosis, a process in which it is oxidized within the walls of arteries.

➤ **Very Low-Density Lipoproteins (VLDL):**

Composition: These particles are produced by the liver and are triglyceride rich. They contain apolipoprotein B-100, C-I, C-II, C-III, and E. Apo B-100 is the core structural protein and each VLDL particle contains one Apo B-100 molecule.

Function: Very-low-density lipoproteins transport endogenous triglycerides, phospholipids, cholesterol, and cholesteryl esters. It functions as the body's internal transport mechanism for lipids. In addition it serves for long-range transport of hydrophobic intercellular messengers, like the morphogen Indian hedgehog (protein).

Properties: VLDL is assembled in the liver from triglycerides, cholesterol, and apolipoproteins. VLDL is converted in the bloodstream to low-density lipoprotein (LDL) and intermediate-density lipoprotein (IDL). VLDL particles have a diameter of 30–80 nm.

Biochemical Activities: VLDL are sometimes called "bad" cholesterol because they can contribute to the buildup of plaque in your arteries.

➤ **High-Density Lipoproteins (HDL):**

Composition: For close to four decades, we have known that high density lipoprotein (HDL) levels are inversely correlated with the risk of CVD. HDL is a complex particle that consists of proteins, phospholipids, and cholesterol and has the ability to carry microRNAs.

Function: HDL (high-density lipoprotein), or “good” cholesterol, absorbs cholesterol and carries it back to the liver. The liver then flushes it from the body. High levels of HDL cholesterol can lower your risk for heart disease and stroke.

Properties: In addition to their well-known ability to promote the efflux of cholesterol from foam cells, HDLs have antioxidant and anti-inflammatory effects that may contribute to their anti-atherogenic potential. HDLs inhibit the pro-atherogenic oxidative modification of LDL.

Biochemical Activities: From a mechanistic perspective, HDL classically functions in reverse cholesterol transport (RCT), removing cholesterol from peripheral tissues and cells such as macrophages and delivering it to the liver and to steroidogenic organs by binding of the major HDL apolipoprotein, apolipoprotein A-I (apoA-I).

Question NO: 04

What mechanism lies behind the reduction of surface tension in alveoli of lungs?

Answer:

A combination of lipids and proteins that is secreted into the alveolar space by epithelial type II cells is a pulmonary surfactant. Its primary purpose is to lower the surface tension in the lung at the air/liquid interface. This is done by shaping a surface film composed of a monolayer that is highly enriched by tightly attached dipalmitoylphosphatidylcholine and bilayer lipid/protein structures. In order to preserve low surface tension at the interface, the molecular processes of film formation and film adaptation to surface changes during breathing remain unclear. The findings of several model systems provide examples of the role of proteins and lipids in surfactants in these processes. We define and compare the model structures that are used for this reason in this analysis and the progress that has been achieved. Facing some contradictory observations using various approaches, we infer that during inspiration, surfactant protein B (SP-B) plays the key role in the adsorption of new material into the interface. The key functions of SP-C are the removal of non-DPPC lipids from the interface after expiration and the addition to the lipid monolayer of the bilayer structures. Surfactant protein A (SP-A) tends to facilitate much of the functions of SP-B. We define a model that proposes that SP-A and SP-B create enriched DPPC domains that can easily be adsorbed at the interface to create a monolayer rich in DPPC. By selective desorption of non-DPPC lipids during repeated breathing processes, more enrichment of DPPC is achieved.

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BIOTECH BRAINY BUNCH



Biochemistry Bio202

Assignment #03

(Fall 2020)

PREPARED BY: MEHWISH MUGHAL

CONTACT AT: 0337-6069894

Email: maheenmughal429@gmail.com

**Do not copy/paste it
Make your own unique solution**

Assignment questions:

Q1: How two types of" PHOSPHOLIPIDS" are differ chemically and structurally? (2 marks)

Two major types of phospholipids are:

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1. **Stearic acid:** Stearic acid is a long chain saturated fatty acid. It is also called Octadecanoic acid or Stearophanic acid. In its solid form, it appears as a white solid and has a mild pungent, oily odor. It floats on water. It functions as a plant metabolite, an algal metabolite, a Daphnia magna metabolite, and a human metabolite. It is derived from an octadecane. Stearic acid is used mostly in the manufacture of soaps, detergents, and several other cosmetics such as shaving creams and shampoos. Soaps are not produced directly from this compound, but indirectly via the saponification of stearic acid esters consisting of triglycerides. Stearic acid esters of ethylene glycol, glycol stearate, and glycol distearate are used in shampoos, soaps, and other daily use cosmetic items to achieve a pearly effect.
2. **phosphatidylcholine:** They also constitute the major phospholipid class contained in lipoproteins, biliary lipid aggregates and lung surfactant. As is the case for the other glycerophospholipids, **phosphatidylcholines** are composed of two fatty acids covalently linked to a glycerol moiety by ester bonds in the sn-1 and sn-2 positions. **Phosphatidylcholine** is a major constituent of cell membranes and pulmonary surfactant, and is more commonly found in the exoplasmic or outer leaflet of a cell membrane. ... **Phosphatidylcholine** also plays a role in membrane-mediated cell signaling and PCTP activation of other enzymes.

Q2: Which types of fats are considered as unhealthy fats and why? Also mention why Mediterranean Diet is considered as healthy one? (3 marks)

There are two main types of potentially harmful dietary fats:

1. Saturated fats:

This type of fat comes primarily from food sources from cattle, such as red meat, poultry, and dairy products that are full-fat. High-density lipoprotein (HDL or 'good') cholesterol and low-density lipoprotein (LDL or 'bad') cholesterol levels are elevated by saturated fats, which may raise the risk of cardiovascular disease.

2. Trans Fats:

This form of fat appears in small quantities in certain foods, naturally. Although by a food manufacturing procedure called partial hydrogenation, most trans fats are made from oils. Total blood cholesterol, LDL cholesterol and triglyceride levels can be increased by these partially hydrogenated trans fats, but lower HDL cholesterol. This can increase your risk of cardiovascular disease.

Mediterranean Diet:-

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You lower the chances of death at any age by 20 percent by reducing the chance of developing heart disease or cancer with the Mediterranean diet. This defense from type 2 diabetes. A Mediterranean diet is high in fiber that steadily digests, reduces enormous blood sugar swings, and can help you sustain a healthier weight.

Q3: Make a comprehensive table in which enlist different types of lipoprotein (in the respective columns) also describe different properties, composition, function and biochemical activities of each type. (3 marks)

Chylomicrons

Composition: Chylomicrons consist of a primary central lipid center consisting mostly of triglycerides, but they bear esterified cholesterol and phospholipids, including other lipoproteins. Truncated apolipoprotein B-48, which is the largest non-exchangeable protein, is the backbone structural protein.

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Function: HDL (high-density lipoprotein), or "good" cholesterol, absorbs cholesterol and carries it back to the **liver**. The **liver** then flushes it from the body. High levels of HDL cholesterol can lower your risk for heart disease and stroke.

Properties: In addition to their well-known ability to promote the efflux of cholesterol from foam cells, HDLs have **antioxidant** and antiinflammatory effects that may contribute to their antiatherogenic potential. HDLs inhibit the pro-atherogenic oxidative modification of LDL.

Biochemical Activities: From a mechanistic perspective, HDL classically functions in reverse cholesterol **transport** (RCT), removing cholesterol from peripheral tissues and cells such as macrophages and delivering it to the **liver** and to steroidogenic organs by binding of the major HDL apolipoprotein, apolipoprotein A-I (apoA-I).

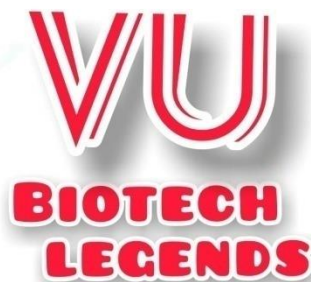
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Q4: What mechanism lies behind the reduction of surface tension in alveoli of lungs (2 marks)

A combination of lipids and proteins that is secreted into the alveolar space by epithelial type II cells is a pulmonary surfactant. Its primary purpose is to lower the surface tension in the lung at the air/liquid interface. This is done by shaping a surface film composed of a monolayer that is highly enriched by tightly attached dipalmitoylphosphatidylcholine and bilayer lipid/protein structures. In order to preserve low surface tension at the interface, the molecular processes of film formation and film adaptation to surface changes during breathing remain unclear. The findings of several model systems provide examples of the role of proteins and lipids in surfactants in these processes. We define and compare the model structures that are used for this reason in this analysis and the progress that has been achieved. Facing some contradictory observations using various approaches, we infer that during inspiration, surfactant protein B (SP-B) plays the key role in the adsorption of new material into the interface. The key functions of SP-C are the removal of non-DPPC lipids from the interface after expiration and the addition to the lipid monolayer of the bilayer structures. Surfactant protein A (SP-A) tends to facilitate much of the functions of SP-B. We define a model that proposes that SP-A and SP-B create enriched DPPC domains that can easily be adsorbed at the interface to create a monolayer rich in DPPC. By selective desorption of non-DPPC lipids during repeated breathing processes, more enrichment of DPPC is achieved.



Assignment No. 2
BIO202–BIOCHEMISTRY I
Fall 2020

Total Marks: 10

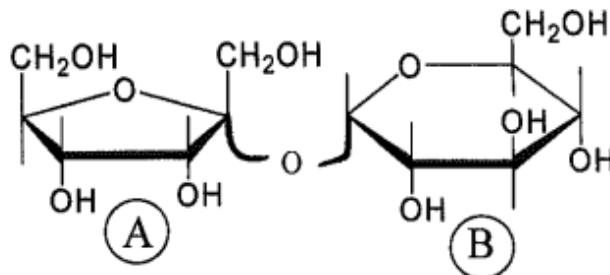
Due date: 28/01/2021

Prepared by: Mehwish Mughal:-

Do not copy/paste it
Make your own unique solution

Question #01:-

Molecule A and molecule B are monosaccharides that are linked together to form a disaccharide with the structure shown below.



Name the glycosidic bond. (2 marks)

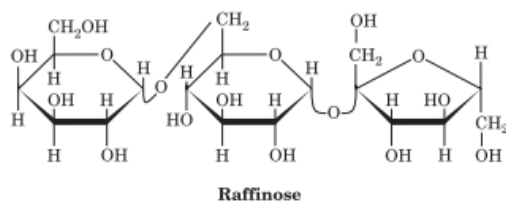
Prepared by: Mehwish Mughal
VU Biotech Legends
Contact at: 0300 7607817

Answer:-

The oligosaccharide form is the sucrose molecule. And the glycosidic bond in it can be written as α -1, β -2-glycosidic linkage.

Question #02:-

The structure of an oligosaccharide, raffinose is shown below. With reasons explain whether raffinose is a reducing sugar or not. (2 marks)



Answer:-

A **reducing sugar** is any sugar that is capable of acting as a reducing agent because it has a free aldehyde group or a free ketone group.

Raffinose is an oligosaccharide and is present in sugar beets in a minor amount. It is not a reducing sugar. Because open chains are absent in it.

Question #03:-

It is a well-established fact that omega 3 and omega 6 fatty acids play pivotal role in brain functioning. What is the difference between omega 3 and omega 6 fatty acids? (2 Marks)

Answer:-

Omega 3 Fatty Acids	Omega 6 Fatty Acids
1. They are healthy fatty acids.	1. Like omega 3, they are also healthy fatty acids.
2. They lower the risk the heart diseases.	2). They play important role in regulating the genes.
3. They play vital role in development of brain, nerve and eye in infants.	3). They promote blood clotting.
4. They keep immune system healthy.	4). They help against rheumatoid arthritis and dermatitis.
5. They are of three types: <ul style="list-style-type: none">• ALA (alpha lenoleic acid)	5). They are of four types: <ul style="list-style-type: none">• LA (lenoleic acid)

Prepared by: Mehwish Mughal

VU Biotech Legends

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- DHA (docosahexonoic acid)
- EPA (ecosapentaenoic acid)
- ARA (arachidonoic acid)
- GLA (gamma lenoleic acid)
- CLA (conjugated lenoleic acid)

Question #04:-

Hair is made up of a protein called keratin. Straightening and curling of hair involves changes in the bonding of the protein. Briefly describe the changes and the bonds involved in the phenomenon of curling and hair straightening. (2 marks)

Answer:-

All hair, whether curly or straight, has two major components: the shaft and the follicle. The shafts are the visible, and follicle is the part of our hair that resides within the skin, or dermis, of our scalp. Each of these structures plays a role in determining our overall hair shape. If the follicle angles into the dermis then the hair will curve as it grows causing it curl. Hairs contain three different types of bonds: hydrogen bonds, salt bonds, and disulfide bonds. These bonds are collectively called as “side bonds”. Curly hair has more disulfide bonds, than straight hair because the follicle shape and angle allows different regions of the hair to come closer together making these bonds easier to form.

Question #05:-

Differentiate between primary and secondary structure of proteins. (2 marks)

Answer:-

Primary Structure Proteins	Secondary Structure Proteins
1. The linear chains of monosaccharides form a primary structure of protein.	1. The α -helix and β -pleated sheets are called as secondary structure of protein.
2. There is no branching in it.	2. There is branching in it.
3. The bond all over the structure is peptide bond.	3. The bond may include peptide bond, hydrogen bond or vander wall forces.

4. They have a simple structure.

4. They have a complex structure.



BIO202 Current Solved

02 SEPTEMBER (2018)

1. Enzyme Kinetics.

Enzyme Kinetics. **Enzymes** are protein catalysts that, like all catalysts, speed up the rate of a chemical reaction without being used up in the process. They achieve their effect by temporarily binding to the substrate and, in doing so, lowering the activation energy needed to convert it to a product.

2. Acrolein Test

Acrolein test. **Acrolein test** is used to detect the presence of glycerol or fat. When fat is treated strongly in the presence of a dehydrating agent like potassium bisulphate (KHSO₄), the glycerol portion of the molecule is dehydrated to form an unsaturated aldehyde, **acrolein** that has a pungent irritating odour

3. Nucleotides Composition

Nucleotides are the building blocks of **nucleic** acids; they are composed of three subunit molecules: a **nitrogenous base**, a five-carbon sugar (ribose or **deoxyribose**), and at least one **phosphate** group. A nucleoside is an **nitrogenous base** and a 5-carbon sugar.

4. Hydrogenation Of Fats

Hydrogenation converts liquid vegetable oils into solid or semi-solid **fats**, such as those present in margarine. Changing the degree of saturation of the **fat** changes some important physical properties, such as the melting range, which is why liquid oils become semi-solid.

5. N Glycosidic Bond

A glycosidic bond or glycosidic linkage is a type of covalent bond that joins a carbohydrate molecule to another group, which may or may not be another carbohydrate

6. Enzymes Classification?

There were six classes of **enzymes** that were created so that **enzymes** could easily be named. These classes are: Oxidoreductases, Transferases, Hydrolases, Lyases, Isomerases, and Ligases. This is the international **classification** used for **enzymes**.

7. Primary Structure Of DNA

In **DNA** double helix, the two strands of **DNA** are held together by hydrogen bonds. The nucleotides on one strand base pairs with the nucleotide on the other strand. The secondary **structure** is responsible for the shape that the nucleic acid assumes. The bases in the **DNA** are classified as purines and pyrimidines.

8. Nucleotide?

Nucleotides are organic molecules that serve as the monomer units for forming the nucleic acid polymers deoxyribonucleic acid and ribonucleic acid, both of which are essential biomolecules within all life-forms on Earth

9. Tags Physical Properties?

Physical properties • Neutral fats are 1. colourless, 2. odorless and 3. tasteless substances

10. Buffer Defn And Its Composition?

A **buffer** solution (more precisely, pH **buffer** or hydrogen ion **buffer**) is an aqueous solution consisting of a mixture of a weak acid and its conjugate base, or vice versa. Its pH changes very little when a small amount of strong acid or base is added to it.

11. Nucleic Acid Medical Application?

Applications of nucleic acid testing in diagnosis and therapy. **Nucleic acid** testing or **nucleic acid** amplification testing, often abbreviated as NAT or NAAT, is a technique that involves amplification and detection of genetic material—the **nucleic acids**, DNA or RNA—for diagnosis or to provide guidance on therapy.

12. Write The Composition Of Triacylglycerols?

The Chemistry of Triglycerides. A triglyceride is a lipid molecule made up of one unit of **glycerol** and three **fatty acids**, hence the tri- prefix, which means three. A triglyceride looks a little bit like a creature with three tails. The head is **glycerol**, which is a simple sugar alcohol compound.

13. Write Two Examples Of Cyclic Nucleotide?

Cyclic nucleotide has three components. It contains a nitrogenous base (meaning it contains nitrogen): for **example**, adenine in cAMP and guanine in cGMP. It also contains a sugar, specifically the five-carbon ribose. And finally, a **cyclic nucleotide** contains a

phosphate.

14. Differentiate Between Oxidative And Hydrolytic Rancidity?

Oxidative rancidity is a natural process that affects fats and oil.

Hydrolytic rancidity refers to the odor that develops when triglycerides are hydrolyzed and

free fatty acids are released. This reaction of lipid with water may require a catalyst, leading to

the formation of free fatty acids and glycerol. In particular, short-chain fatty acids, such as

butyric acid, are malodorous

15. What Do You Know About Km Of Micheals Menten Equation?

In biochemistry, Michaelis–Menten kinetics is one of the best-known models of enzyme kinetics.

It is named after German biochemist Leonor Michaelis and Canadian physician Maud Menten.

The **Michaelis-Menten equation** can then be rewritten as $V = \frac{K_{cat} [\text{Enzyme}] [S]}{(K_m + [S])}$. K_{cat} is equal to K_2 , and it measures the number of substrate molecules

"turned over" by

enzyme per second. ... Taking the reciprocal of both side of the **Michaelis-Menten equation** gives: To determined the values of K_M and V_{max} .

16. Write Three Functions Of Cgmp?

?????

17. Write Hydrogenation Process With Respect To Fats?

??????

18. Write Five Properties Of Nitrogenous Bases?

1. **Tautomerism:** • All these bases can exist in keto-enol or amine-imine form. • At physiologic pH keto and amine form is predominant.

2. **UV light absorbance:** The conjugated double bonds of purine and pyrimidine derivatives

absorb ultraviolet light

3. **Hydrophobicity:** • The purine and pyrimidine bases are hydrophobic and relatively

insoluble in water at the nearneutral cell pH

4. **Weak Bases:** Purines or pyrimidines with an – NH_2 group are weak bases

5. **Heterocyclic:** • They are heterocyclic i.e. structures that contain other atoms in addition

to carbon, such as nitrogen in the ring structure

6. **Aromatic:** The Nitrogen containing bases are aromatic i.e. they have alternate double

bonds

19. What Are Enzymes? Write Its Classification With Example?

A several complex protein that are produced by cell and act as catalysts by

specific biochemical reaction.

There were six classes of **enzymes** that were created so that **enzymes** could easily be named. These classes are: Oxidoreductases, Transferases, Hydrolases, Lyases, Isomerases, and Ligases. This is the international **classification** used for **enzymes**.

20. Five Properties Of Waxes?

Waxes are insoluble in water, but • soluble in fat solvents and are • negative for acrolein test. •

very resistant to rancidity. Waxes are not easily hydrolyzed as the fats • and are indigestible by

lipases (enzymes responsible for fat digestion in body) • Thus they are of no nutritional value

21. Role Of Nucleotides As Coenzyme And Intermediate Carrier?

???

22. Difference Between Thymine And Uracil?

Thymine becomes thymidine and deoxythymidine, Thymine is 2,4-dioxy-5- methyl-pyrimidine,

Thymine (T)—only in DNA. Uracil (U) becomes uridine and deoxyuridine, Uracil is 2,4-

dioxypyrimidine, Uracil (U) —only in RNA. T and U differ by only one methyl group, which is

present on T but absent on U.

23. Characters Of Vldl?

???

24. Bee Wax?

Bees-wax is secreted by the honeybees that use it to form the combs. • It is a mixture of waxes

• chief constituent is myricyl palmitate

25. tRNA?

???

26. Spermaceti

Spermaceti • is a wax that is most often found in the head cavities of the sperm whale. • Fatty

esters are formed essentially of • cetyl palmitate and • cetyl myristate. It was used in cosmetics,

pharmacy and also in candles • recent international regulation concerning whale captures, has

stopped its use. It is now replaced by synthetic cetyl palmitate.

27. Lipoxins

???

28. Lipoprotein

Combinations of lipid and protein (lipoproteins) serve as the means of transporting lipids in the blood. Importantly, lipids provide the hydrophobic barrier that permits partitioning the aqueous contents of cells and subcellular structures as; phospholipids and sterols are the major structural elements of biological membranes.

29. Examples Of Coenzymes?

FAD, (Flavin Adenine Dinucleotide), NAD⁺ (Nicotinamide adenine Dinucleotide) and NADP⁺

(Nicotinamide adenine Dinucleotide Phosphate)

30. Properties Of Glycerol

It has the following properties: • Colorless • Viscous oily liquid with • sweet taste.

Thankful to Muzammil Hussain for such a great work. (Talha)

BIO202- CURRENT PAPERS

EFFORT BY : ASMAT NIAZ AND MOMNA

GROUP ; EXCELLENT ZOOLOGIST

PAPER DATE: 28-02-2021

Mine today's paper bio202

Sponification

Properties of glycerol

Messenger RNA Function

Physical properties of TAGs

Order of reaction (enzyme)

Basic steps for enzyme catalysis

[12:50 AM, 2/28/2021] Maria Vu: Bio202 paper today
11:30

Diff b/w thymine uracil

Cofactors and co enzymes

Saponification

N glycosidic bond

Km equation

Note on inorganic cofactors

Discriptive note on large and small regulatory RNA 10 marks.

Mcqs mostly from mid

[12:50 AM, 2/28/2021] Maria Vu: Today my paper

Bio 202...Timing 11.30

Q.1) How messenger is heterogenous class (2marks).....Q 2) Functions of lipoxins(2 marks.)

Q..3) medical applications of nucleotide and nucleoside..(3marks).Q.4) pka value of acetic acid...(3 marks)...Q.5) characteristics of VLDL....(5 marks).....Q.6) ...How activation energy is related to Order of reaction...(5 marks)....Q.7) what are enzymes...how they are classified ...???(10 marks)

What are enzymes and classify them

Objective portion also was easy

(27) Bio 202

1. phosphodiester bond? (2 marks)
2. Difference between template and non template strands? (2 marks)
3. Michaelis equation? (3)
4. Three function of cGMP? (3)
5. effects of platelets PAF- (5)
6. effect of pH on ionization of active site
7. Detail on ligand? (10)
8. what is Lanolin?
9. Iodine number?
10. Small and large KM?
11. Hydrogenation?
12. Co-factors?
13. Enzyme and classes?
14. Primary structure of Nucleic acids?
15. Sequence or order of nucleotides?
16. defines the primary structure of DNA and RNA?
17. Name three pyrimidine bases?
18. what is melting temperature?
19. Name of the second messenger nucleotide?
20. what do you know about Km of mi

- 21- How isozyme of hexokinase illustrate the significance of K_m ?
- 22- Discuss glycerol?
- 23- Discuss lipids? (10 marks)
- 24- Effects of pH on enzyme active site?
- 25- palmitic acid characteristics?
- 26- Define Enzyme Kinetics?
- 27- Glycerol ~~test~~ Acrolin test?
- 28- Long and Small RNA? (10 marks)
- 29- Bile Salt?
- 30- Activation energy relation to reaction Heterogeneous mRNA?
- 31- K_m in Michaelis-Menten equation?
- 32- Reaction of substrate?
- 33- wax and its types?
- 34- uracil and thymine difference?
- 35- Simple RNA structure?
- 36- VLDL properties?
- 37- What is induced fit?
- 38- Three functional groups of pyrimidines and purines?
- 39- Three basic ^{steps} concepts of enzyme catalyzed action?
- 40- Discuss the rate of nucleotides?

- 41- Regulatory compounds?
- 42- Discribe ligand? (10 marks ^{most} repeated)
- 43- Types of lipoproteins 3-
- 44- what is lipoproteins 2?
- 45- Enzyme and its classification? (10)
- 46- Induce fit hypothesis? (5)
- 47- Rancidity and its factors?
- 48- palliative acid?
- 49- sphingolipids?
- 50- induced fit model?
- 51- Effects of pH?
- 52- Co-factors?
- 53- Lanolin?
- 54- Hydrogenation?
- 55- Histones and its classes?
- 56- role of ~~real~~ nucleotides as carrier and co-factors?
- 57- Activation energy and rate of reaction?
- 58- calculate value of acetate base and acetic acid pH 3.65?
- 59- Note on ligand? (10) 915-
- 60- enzyme and its classification?
- 1- Tags?
- 2- order Substrate conc.?
- 2- Spontification? (64) Inhibitors?

- 63- Spontification ?
64- Inhibitors ? 10 (marks)
65- Enzymes note ?
66- DNA interaction ?
67- Condensation reaction?
68- Camp ← properties of
69- Define Ligase?
70- molec. weight of water?
71- what is the concentration of
OH in a solution with an H^+
concentration?
72- melting temperature
73- primary structure of DNA?
74- Bee wax and Spermaceti?
75- Saturation kinetics?
76- Enzyme and classification?
77- Lipoprotein?
78- Reaction order?
79- Bees wax?
80- Spermaceti?
81- what is Oxyases?
82- Name inorganic elements serve as
co-factors? (5)
83- Distribution of waxes in nature?
84- what is concentration ratio of acetate and
acetic acid in buffer solution pH 5.30 and
 $pK_a = 4.76$?

PAPER DATE : 27-02-2021

Long or short coding of RNA 10 mark ka..

Pyrimidine bases 3 mark.

Nucleotides s energy currency 5 mark....

Palmalogens 2 mark

Reaction velocity 3 matk

Bio202 paper mostly mcqs ppts ma sa thy or ek long question enzyme or is ki classification , induced fit hypothesis, rancidity, sterol, enzymes inhibitor subjective easy tha

today's paper of mine bio202 9:30 am

30 MCQs from Talha wariche's file

7 question

DNA denaturation 2 marks

Find the concentration of H^+ in 0.1M NaOH solution

Write a note on long and short non coding regulatory RNAs

Enzymes and name of its classes

Bss Itna e yad hai baqi Bhool gya laikin tha Boht easy

Good luck to All of uhh

Long question describe ligands

Short questions:

Examples of hydrolases enzymes, define nucleotide, describe induced fit hypothesis, functions of cAMP, coenzymes and nucleotide as intermediate carrier

9:30am

NaOH dissociate to equal number of Na and OH ions so concentration of both Na and OH will be equal to NaOH concentration as NaOH is monobasic

Concentration of H and OH or other reaction order with respect substrate is ka ans share kr dy

Bio 202

[27/02, 9:53 am] +92 342 6760968: Enzyme and the classification of enzyme. 10 marks

Properties of Nitrogen. 5 marks

Primary structure of DNA. 5 marks

Function of t-rna 3 marks

[27/02, 9:55 am] +92 317 6956523: What is the simple lipids? Give two types? 3marks ka

Long Questions

Give five properties of waxes ? 5marks

Ak tha reaction order respect with substrate concentration? 5marks

What is the enzymes? Give classification and examples? 10marks

BIO202 paper 7.30 am

Mcqs thora sa muskl zada ppts sa.

Total 30 mcqs

Difference between uracil and thymine? 2 marks

What do you know about kinetic enzymes? 2marks

What is the concentration of H in the 0.1M NaOH? 3mar

What is the simple lipids? Give two types? 3marks ka

Long Questions

Give five properties of waxes ? 5marks

Ak tha reaction order respect with substrate concentration? 5marks

What is the enzymes? Give classification and examples? 10marks

Enzyme and the classification of enzyme. 10 marks

Properties of Nitrogen. 5 marks

Primary structure of DNA. 5 marks

Function of t-rna 3 marks

The ppr pattern is total 37 Questions in which 30 se mcqs and 7 is subjective.

2 marks k 2 questions

3 marks k bhe 2 questions

5 marks k bhe 2 questions

Or ek 10 marks ka long tha

MUHAMMAD IMRAN

BIO-202-Biochemistry-I FINAL TERM PAPER

1. Name two second messenger of nucleotides? (2marks)

Second messengers: Nucleotides, such as

1. Cycloadenosine mono phosphate(**cAMP**)
2. Cyclic Guanosine mono phosphate(**cGMP**)

2)What are simple lipids? give two types of simple lipids. (2 marks)

A simple lipid is a fatty acids of different type of alcohol and carry no other substances . A simple lipid is belong to the heterogeneous class of predominantly non polar in nature. They are insoluble in water but soluble in organic solvent, such as chloroform and benzene.

Simple Lipids: Fatty acids ester of different alcohol.

Fats: Fatty acid ester of different glycerol. Oil and fats are in liquid state. They are insoluble in water but soluble in organic solvent such as chloroform and benzene. **Waxes:** Solid ester of fatty acid ester . They are insoluble in water due to weak polar nature of ester group.

3) Define buffer? write its composition. (2 marks)

- Buffers are aqueous systems that tend to resist changes in pH when small amounts of acid (H^+) or base (OH^-) are added
- A buffer system consists of a weak acid (the proton donor) and its conjugate base (the proton acceptor)
- As an example, a mixture of ; acetic acid and acetate ion, is a buffer system,

A buffer solution (more precisely, pH buffer or hydrogen ion buffer) is an aqueous solution consisting of a mixture of a weak acid and its conjugate base, or vice versa. Its pH changes very little when a small amount of strong acid or base is added to it.

A buffer is a solution that can resist the pH changes upon the addition of acidic or basic components.

It is able to neutralize to very small amount of acid or base is added to it .

It is important for the process or reaction in which is require for the stable and pH ranges.

Buffer Composition:

To relatively the maintaining the pH of the solution , a buffer must consist the acid-base pair meaning either:

i) A weak base and a conjugate acid. ii) A

weak acid and conjugate base .

The use of one or more , depend upon the desired pH when preparing the buffer.

Example:

Acetic acid such as sodium acetate (CH_3COOH) in which they have conjugate acid .

Ammonia(NH_3) and a salt($NaCl$) in which they have conjugate base.

4) Define saponification Number? (3marks)

The number of milligrams of the sodium hydroxide and potassium hydroxide of free or combined state of fats or wax to completely saponifying are called **Saponification number**.

- Saponification
- Hydrolysis of a fat by an alkali is called saponification
- The resultant products are glycerol and the alkali salts of the fatty acids, which are called "soaps"
- The number of mgs of NaOH/KOH required to saponify the free and combined FA in one gram of a given fat is **called its saponification number**

The amount of alkali needed to saponify a given quantity of fat will depend upon the number of carboxylic ($-\text{COOH}$) group present

- Thus fats containing short chain fatty acids will have more $-\text{COOH}$ groups per gram than long- chain fatty acids and this will take up more alkali
- And hence will have higher saponification number

5) Define enzyme kinetics? (3 marks)

Enzyme Kinetics. Enzymes are protein catalysts that, like all catalysts, speed up the rate of a chemical reaction without being used up in the process. They achieve their effect by temporarily binding to the substrate and, in doing so, lowering the activation energy needed to convert it to a product.

Enzyme kinetics is the study of the **chemical reactions** that are **catalysed** by **enzymes**. In enzyme kinetics, the **reaction rate** is measured and the effects of varying the conditions of the reaction are investigated. Studying an enzyme's **kinetics** in this way can reveal the catalytic mechanism of this enzyme, its role in **metabolism**, how its activity is controlled, and how a **drug** or an agonist might **inhibit** the enzyme.

Enzyme kinetics is the investigation of how substrate bind with enzyme then into product. They are used to kinetic analysis are commonly obtained from an enzyme. In 1913 the Leonor Michaelis and Muad Leonora Menton are proposed quantitative theory of enzyme.

The molecules of the substrate bind reversibly with enzyme are called enzyme substrate complex.

These molecules are converted into product are called enzyme product complex.

These theory are further are further developed by J.B.S haldan and G.E briggs who derived equation to still widely used today.

Enzyme Kinetics depend upon the solution condition and saturation concentration.

6) Medical applications of Nucleotides and nucleic acid. (3 marks)

- Medical applications Specifically medical applications include the use of synthetic purine and pyrimidine analogs that contain halogens, thiols, or additional nitrogen atoms;
- Their use include chemotherapy for cancer
- as suppressors of the immune response during organ transplantation.
- as anti-viral drugs such as in the treatment of AIDS

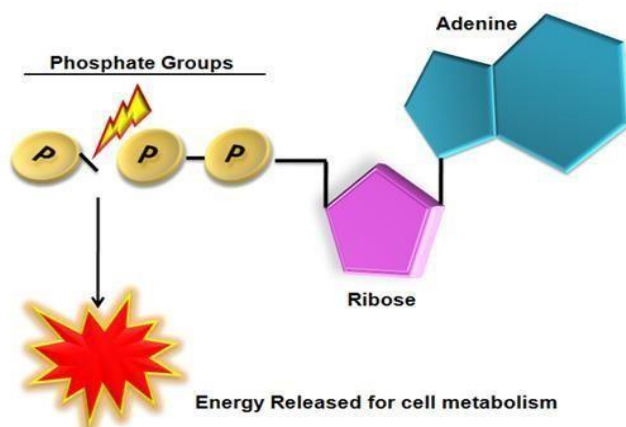
7) Properties of waxes (5 marks)

Waxes are insoluble in water, but soluble in fat solvents and are negative for acrolein test. very resistant to rancidity.

- Waxes are not easily hydrolyzed as the fats and are indigestible by lipases (enzymes responsible for fat digestion in body) they are of no nutritional value

8) nucleotides as 'energy currency' of the cell? (5 marks)

- Energy currency: Nucleotides play an important role as "energy currency" in the cell.
- Nucleoside tri- and diphosphates such as ATP and ADP are the principal donors and acceptors of phosphoryl group in metabolism.
- By doing this, they play a key role in the energy transduction.



- This energy is used in almost every energy requiring process in the body, such as;
- Muscle contraction, Transmission of nerve impulse, Transports of nutrients across cell membrane Motility of spermatozoa And many more energy dependent processes

9) classification of enzymes? (5 marks)

There were six classes of enzymes that were created so that enzymes could easily be named. These classes are:

- 1) Oxidoreductases,
- 2) Transferases,
- 3) Hydrolases,
- 4) Lyases,
- 5) Isomerases, 6) Ligases.

This is the international classification used for enzymes.

10) Define enzymes? Write classification of enzymes? (10 marks)

Enzymes are protein molecules in cells which work as catalysts. **Enzymes** speed up chemical reactions in the body, but do not get used up in the process. Almost all biochemical reactions in living things need **enzymes**. With an **enzyme**, chemical reactions go much faster than they would without the **enzyme**.

There were six classes of enzymes that were created so that enzymes could easily be named. These classes are:

- 1) Oxidoreductases,
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- 4) Lyases,
- 5) Isomerases, 6) Ligases.

This is the international classification used for enzymes.

CLASSIFICATION OF ENZYMES		
Group of Enzyme	Reaction Catalysed	Examples
1. Oxidoreductases	Transfer of hydrogen and oxygen atoms or electrons from one substrate to another.	Dehydrogenases Oxidases
2. Transferases	Transfer of a specific group (a phosphate or methyl etc.) from one substrate to another.	Transaminase Kinases
3. Hydrolases	Hydrolysis of a substrate.	Estrases Digestive enzymes
4. Isomerases	Change of the molecular form of the substrate.	Phospho hexo Isomerase, Fumarase
5. Lyases	Nonhydrolytic removal of a group or addition of a group to a substrate.	Decarboxylases Aldolases
6. Ligases (Synthetases)	Joining of two molecules by the formation of new bonds.	Citric acid synthetase

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6. Ligases (Synthetases)	Joining of two molecules by the formation of new bonds.	Citric acid Synthetase

1) Oxidoreductases

- catalyze oxidation reduction reactions
- further divided into four subgroups;
- Oxidase,
- Dehydrogenases, • Hydroperoxidases • Oxygenases.

2) Transferases

- These bring about a transfer of functional groups such as
- phosphate and
- amino group
- from one molecule to another molecule called donor and acceptor molecules respectively.

- The common examples of this group are
- Transaminases
- Phosphotransferases (Kinases)
- Hexokinase is a phosphotransferase which catalyzes the transfer of phosphate groups.
- $\text{Glucose} + \text{ATP} \rightarrow \text{Glucose 6-phosphate} + \text{ADP}$.

3) Hydrolases

- These enzymes catalyze hydrolysis, i.e.
- add water molecule to the substrate which is simultaneously decomposed; the functional group of substrate is transferred to water.
- Common examples of hydrolases are:
- Protein hydrolyzing Enzymes (peptidases).
- Carbohydrases
- Lipid hydrolyzing enzymes e.g. Lipases and • Phospholipases.

4) Lyases

- These enzymes catalyze the addition of
- NH_3 ,
- H_2O or
- CO_2 to double bonds or
- the removal of these groups leaving behind double bonds.
- Lyases are included in a separate class because they catalyze these reactions by means other than hydrolysis or oxidation.

5) Isomerases

These enzymes catalyze the structural change within a single molecule by the transfer of groups within it, resulting in the formation of an isomeric form of substrate.

6) Ligases

- These enzymes catalyze condensation reactions joining two molecules by forming
- C-O,
- C-S,
- C-N and
- C-C bonds.
- The energy for condensation is provided by cleavage of high energy phosphates, e.g. ATP, GTP etc.

11) components of nucleotide 3

Nucleotides are composed of

- A nitrogenous base (purine or pyrimidine)
- A pentose monosaccharide
- One, two, or three phosphate groups

12) Characteristics of VLDL .5

very-low-density lipoproteins (VLDL),

- VLDLs are assembled in the liver.
- composed predominantly of TAGs synthesized in liver and
- contain some cholesterol and cholesteryl esters
- As VLDL pass through the circulation, TAG is degraded and taken up by peripheral tissues in the form of fatty acids,
- causing the VLDL to decrease in size and become denser,
- called VLDL remnant.

13) what is lipoproteins 2

Combinations of lipid and protein (lipoproteins) serve as the means of transporting lipids in the blood, Importantly, lipids provide the hydrophobic barrier that permits partitioning the aqueous contents of cells and subcellular structures as; phospholipids and sterols are the major structural elements of biological membranes.

- Different combinations of lipids and proteins produce particles of different densities
- ranging from chylomicrons to high-density lipoproteins

A **lipoprotein** is a **biochemical** assembly whose primary purpose is to transport **hydrophobic lipid** (a.k.a. **fat**) molecules in water, as in blood or **extracellular fluid**. They have a single-layer **phospholipid** and **cholesterol** outer shell, with the **hydrophilic** portions oriented outward toward the surrounding water and **lipophilic** portions of each molecule oriented inwards toward the lipids molecules within the particles.

14) five functions of cyclic AMP 5

- Acts as second messenger in the cell
- It has role in glycogen metabolism
- cAMP, glycogenolysis
- cAMP TAG metabolism
- cAMP lipolysis
- It decreases cholesterol synthesis
- It causes activation of protein kinases which in turn activate or deactivate other enzymes.
- It regulates the cell membrane permeability, by increasing permeability of cell membrane to H₂O, Na⁺, K⁺ & Ca²⁺
- Moreover, it regulates
- insulin secretion, catecholamine biosynthesis & Melatonin synthesis
- Cyclic GMP is synthesized from GTP
- It serves as a second messenger in response to nitric oxide during relaxation of smooth muscle (especially blood vessels) so it has role in smooth muscle relaxation and vasodilatation.

It also has role in

- Protein phosphorylation
- Neurotransmission
- Insulin action
- Regulation of sodium channels

cAMP, cyclic AMP, or 3',5'-cyclic adenosine monophosphate) is a second messenger important in many biological processes. cAMP is a derivative of adenosine triphosphate (ATP) and used for

intracellular signal transduction in many different organisms, conveying the cAMP- dependent pathway

15) define glycerol 3 marks

Glycerol is widely used in pharmaceutical and cosmetic preparations.

It has the following properties: • Colorless • Viscous oily liquid with • sweet taste.

16) Two properties of glycerol trinitrate. 2 marks

- Glycerol combines with three molecules of nitric acid to form Glycerol trinitrate that is used as
- explosive and
- vasodilator

17) name of Three pyrimidine bases.3 marks.

- **Pyrimidines:**
 - **Pyrimidines include:** • Cytosine (C)—in both DNA and RNA
 - Thymine (T)—only in DNA
 - Uracil (U) —only in RNA
 -
 - Cytosine when combines with pentose it becomes deoxycytidine and cytidine
 - Thymine becomes thymidine and deoxythymidine
 - Uracil (U) becomes uridine and deoxyuridine depending on the type of sugar.
 - Cytosine is 2-oxy-4-amino-pyrimidine
 - Thymine is 2,4-dioxy-5-methyl-pyrimidine • Uracil is 2,4-dioxy-pyrimidine •
 - T and U differ by only one methyl group, which is present on T but absent on U

18) explain bees wax and spermaceti.3 marks

Bees-wax is secreted by the honeybees that use it to form the combs. It is a mixture of waxes

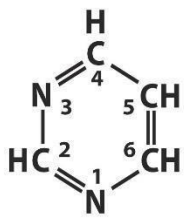
chief constituent is myricyl palmitate

Spermaceti • is a wax that is most often found in the head cavities of the sperm whale. • Fatty esters are formed essentially of • cetyl palmitate and • cetyl myristate. It was used in cosmetics, pharmacy and also in candles • recent international regulation concerning whale captures, has stopped its use. It is now replaced by synthetic cetyl palmitate.

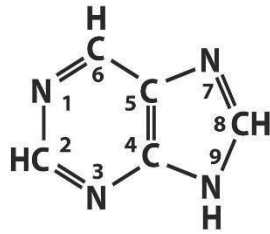
19) write five Properties of nitrogenous bases.5 marks

Properties of Nitrogenous Bases

- **Aromatic:** The Nitrogen containing bases are aromatic i.e. they have alternate double bonds
- **Heterocyclic:**
 - They are heterocyclic i.e. structures that contain other atoms in addition to carbon, such as nitrogen in the ring structure
 - The six-atom rings of purines and pyrimidines are numbered in opposite directions.



Pyrimidine



Purine

- **Weak Bases:** Purines or pyrimidines with an -NH_2 group are weak bases
- **Functional Groups:** The most important functional groups of pyrimidines and purines are
 - ring nitrogens
 - carbonyl groups
 - exocyclic amino groups
- **Hydrophobicity:** • The purine and pyrimidine bases are hydrophobic and relatively insoluble in water at the near-neutral cell pH
- **Stacking Interaction:** Hydrophobic stacking interactions in which two or more bases are positioned with the planes of their rings parallel (like a stack of coins) are one of two important modes of interaction between bases in nucleic acids.
- Base stacking helps to minimize contact of the bases with water, and these interactions are very important in stabilizing the three-dimensional structure of nucleic acids.

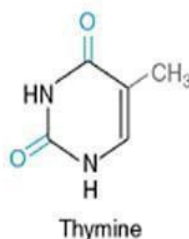
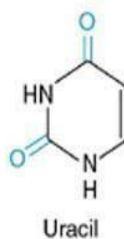
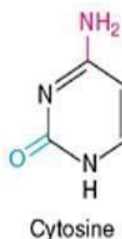
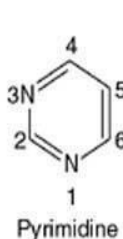
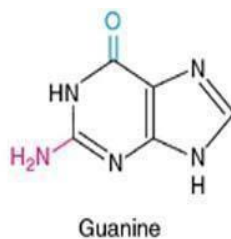
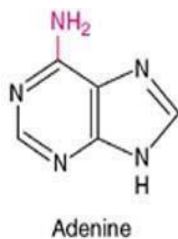
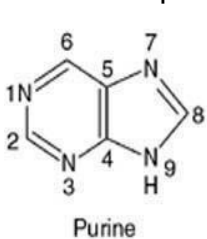
20. composition of triacylglycerol 2

- The simplest lipids constructed from fatty acids are the triacylglycerols, • Also referred to as; triglycerides, fats, or neutral fats or storage lipids.
- Triacylglycerols are composed of three fatty acids in ester linkage with a single glycerol

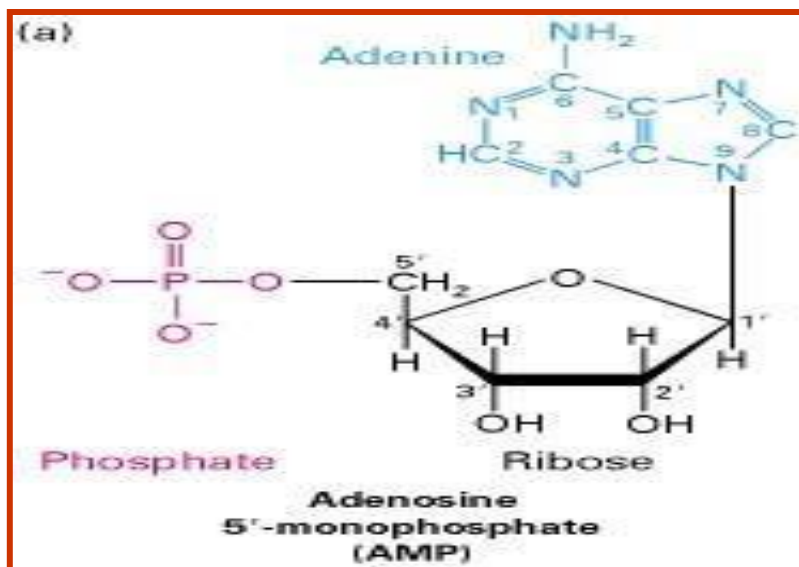
21. carbon atom number in pentose sugar of nucleotides & nucleosides 3

Numbering of Carbon and Nitrogen Atoms

- The carbon and nitrogen atoms in the rings of the base and the sugar are numbered separately
- • The atoms in the rings of the bases are numbered
 - 1 to 6 in pyrimidines &
 - 1 to 9 in purines



- In the pentoses of nucleotides and nucleosides the carbon numbers are given a prime (') designation to distinguish them from the numbered atoms of the nitrogenous base.
- The carbons in the pentose are numbered 1' to 5'.
- Numerals with a prime (e.g., 2' or 3') distinguish atoms of the sugar from those of the heterocycle.



- Thus, when the 5'-carbon of a nucleoside (or nucleotide) is referred to, a carbon atom in the pentose, rather than an atom in the base, is being specified.

22. Nucleotide serve as single transduction pathway? 3

- serve as second messengers in signal transduction pathways.
Signal Transduction: GTP and GDP play key roles in activating or inhibiting proteins in various cellular signaling cascades.
- Medical applications Specifically medical applications include the use of synthetic purine and pyrimidine analogs that contain halogens, thiols, or additional nitrogen atoms;
- Their use includes chemotherapy for cancer
- as suppressors of the immune response during organ transplantation. as anti-viral drugs such as in the treatment of AIDS

8. What is km in Micheals Mtnn Equatin 3

23 Rancidity and its factors 5marks

- Rancidity
- Definition:
- It is a physico-chemical change in the natural properties of the fat leading to the development of unpleasant odor or taste or abnormal color
- It occurs particularly on aging after exposure to atmospheric oxygen, light, moisture, bacterial or fungal contamination and/or heat.
- Saturated fats resist rancidity more than unsaturated fats that have unsaturated double bonds.
- **Rancidity is due to**
- Oxidation • Hydrolysis • Oxidative Rancidity

Rancidity is a very general term and in its most general meaning, it refers to the spoilage of a food in such a way that it becomes undesirable (and usually unsafe) for consumption. When people say that a food has "gone bad," what they're usually talking about is rancidity. Rancidification. Rancidity is the complete or incomplete oxidation or hydrolysis of fats and oils when exposed to air, light, moisture or by bacterial action, resulting in unpleasant taste and odor. ... When these processes occur in food, undesirable odors and flavors can result.

24.Name the pentose sugar in nucleic acids 5marks

- D-ribose and 2-deoxy D-ribose are the only sugars so far found in the nucleic acids.
- These also pentoses belong to D-family
- They are present as Furanose (ring) in the form of β -Anomer
- The addition of a pentose sugar to a base produces a nucleoside
- If the sugar is D-ribose, a ribonucleoside is produced
- If the sugar is 2-deoxy D-ribose, a deoxyribonucleoside is produced

Enzymes...classification 10marks

25) halogenation with respect to fat 5 marks

Halogenation

- Similar to hydrogenation,
- Halogens such as chlorine, bromine and iodine can also be added to double bonds in unsaturated fatty acids.
- It is a very important property to determine the degree of unsaturation of the fat or oil that determines its biological value.
- The degree of unsaturation is reflected by Iodine number.
- Iodine number is defined as the number of grams of iodine absorbed by 100 gm of fat.
- The more the iodine number, the greater the degree of unsaturation.
- Fats rich in saturated fatty acids have low iodine numbers,
- while fats rich in unsaturated fatty acids have high iodine numbers
- The determination of iodine number is useful to the chemist in determining the quality of an oil or its freedom from adulteration
- Iodine number of cotton seed oil varies from 103 to 111.
- That of olive oil from 79 to 88,
- And that of linseed oil from 175 to 202
- A commercial lot of olive oil which has iodine number higher than 88 might have been adulterated with cotton seed oil
- The higher is the iodine number, the more reactive, less stable, more susceptible to oxidation and rancidification is the oil or fat.

26) define function of lipoxin 2 marks

- The lipoxins are formed through the action of 15-lipoxygenase followed by the action of 5-lipoxygenase on arachidonic acid.
- A series of reductions of the resultant hydro-per-oxy groups leads to the formation of tri- hydroxy derivatives of arachidonic acid known as the lipoxins.
-
- Lipoxins induce chemotaxis and stimulate superoxide radicals for killing of microorganisms
- Prostaglandins, thromboxanes, leukotrienes and lipoxins have very short half lives and rapidly degraded in the body.

27 Nucleoside vs. Nucleotide

A **nucleoside** consists of a nitrogenous base covalently attached to a sugar (ribose or deoxyribose) but without the phosphate group. A


nucleotide consists of a nitrogenous base, a sugar (ribose or deoxyribose) and one to three phosphate groups.

Nucleoside = Sugar + Base

Nucleotide = Sugar + Base + Phosphate

Comparison chart

Nucleoside versus Nucleotide comparison chart

	 Nucleoside	Nucleotide
Chemical Composition	Sugar + Base. A nucleoside consists of a nitrogenous base covalently attached to a sugar (ribose or deoxyribose) but without the phosphate group. When phosphate group of nucleotide is removed by hydrolysis, the structure remaining is nucleoside.	Sugar + Base + Phosphate. A nucleotide consists of a <u>nitrogenous base</u> , a sugar (ribose or deoxyribose) and one to three phosphate groups.
Relevance in medicine	Several nucleoside analogues are used as antiviral or anticancer agents.	Malfunctioning nucleotides are one of the main causes of all cancers known of today.
Examples	Examples of nucleosides include cytidine, uridine, adenosine, guanosine, thymidine and inosine.	Nucleotides follow the same names as nucleosides, but with the indication of phosphate groups. For example, 5'-uridine monophosphate.

Nucleotide: Nucleotide is composed of a nitrogenous base, sugar and a phosphate group.

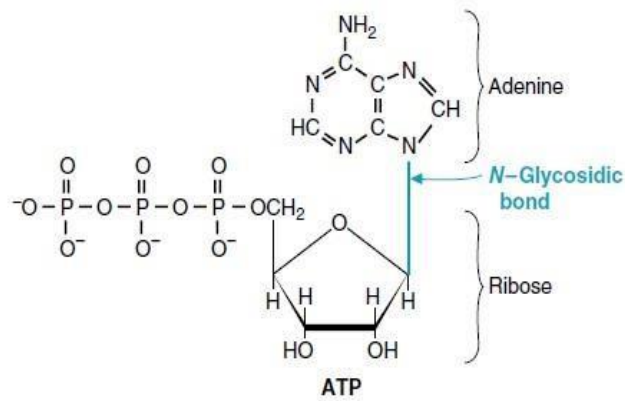
Nucleoside: Nucleoside is composed of only a nitrogenous base and a phosphate group

28 iodine number

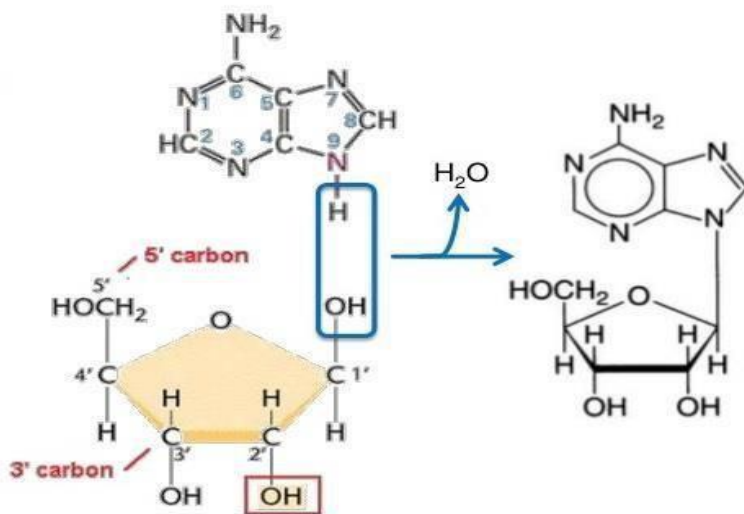
- Iodine number is defined as the number of grams of iodine absorbed by 100 gm of fat.
- The more the iodine number, the greater the degree of unsaturation.
- Fats rich in saturated fatty acids have low iodine numbers,
- while fats rich in unsaturated fatty acids have high iodine numbers

29 example of condensation reaction .2mrks

- Sugars are linked to the heterocycle by a β -N-glycosidic bond, almost always to the
- N-1 of a pyrimidine
- N-9 of a purine



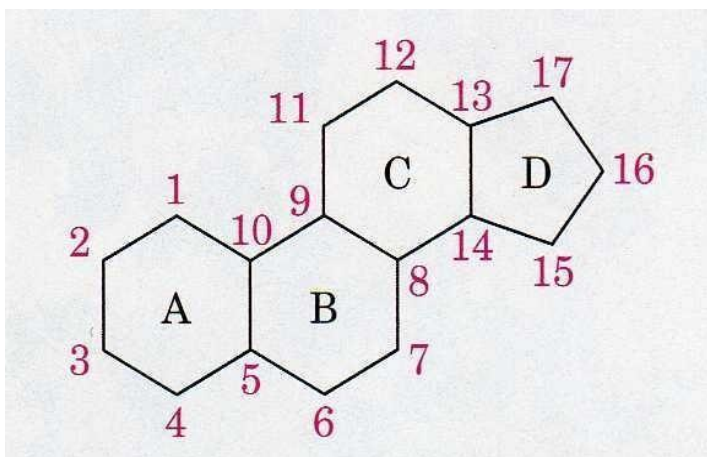
- The N-glycosyl bond is formed by removal of the elements of water
- a hydroxyl group from the pentose and
- hydrogen from the base



- Thus it is a condensation reaction.
- Similar to O-glycosidic bond formation in carbohydrates
- However, N-glycosidic bonds, have Nitrogen atom instead of oxygen linking the two residues. • the addition of the glycosidic bond to nitrogenous base is indicated by the name change
- such as from adenine to adenosine for the glycosidic bond

30 Steroids and Cholesterol

- A steroid is a lipid whose structure is based on the tetracyclic (four-ring) structure consists of
- 3 cyclohexane rings.
- 1 cyclopentane ring.



- Steroids with eight to ten carbon atoms in the side chain at C-17 and a hydroxyl group at C-3 are classified as sterols

1. Enzyme Kinetics.

Enzyme Kinetics. **Enzymes** are protein catalysts that, like all catalysts, speed up the rate of a chemical reaction without being used up in the process. They achieve their effect by temporarily binding to the substrate and, in doing so, lowering the activation energy needed to convert it to a product.

2. Acrolein Test

Acrolein test. **Acrolein test** is used to detect the presence of glycerol or fat. When fat is treated strongly in the presence of a dehydrating agent like potassium bisulphate (KHSO_4), the glycerol portion of the molecule is dehydrated to form an unsaturated aldehyde, **acrolein** that has a pungent irritating odour

3. Nucleotides Composition

Nucleotides are the building blocks of **nucleic acids**; they are composed of three subunit molecules: a **nitrogenous base**, a five-carbon sugar (ribose or **deoxyribose**), and at least one **phosphate group**. A nucleoside is **anitrogenous base** and a 5-carbon sugar.

4. Hydrogenation Of Fats

Hydrogenation converts liquid vegetable oils into solid or semi-solid **fats**, such as those present in margarine. Changing the degree of saturation of the **fat** changes some important physical properties, such as the melting range, which is why liquid oils become semi-solid.

5. N Glycosidic Bond

A glycosidic bond or glycosidic linkage is a type of covalent bond that joins a carbohydrate molecule to another group, which may or may not be another carbohydrate

6. Enzymes Classification?

There were six classes of **enzymes** that were created so that **enzymes** could easily be named. These classes are: Oxidoreductases, Transferases, Hydrolases, Lyases, Isomerases, and Ligases. This is the international **classification** used for **enzymes**.

7. Primary Structure Of DNA

In **DNA** double helix, the two strands of **DNA** are held together by hydrogen bonds. The nucleotides on one strand base pairs with the nucleotide on the other strand. The secondary **structure** is responsible for the shape that the nucleic acid assumes. The bases in the **DNA** are classified as purines and pyrimidines.

8. Nucleotide?

Nucleotides are organic molecules that serve as the monomer units for forming the nucleic acid polymers deoxyribonucleic acid and ribonucleic acid, both of which are essential biomolecules within all life-forms on Earth

9. Tags Physical Properties?

Physical properties • Neutral fats are 1. colourless, 2. odorless and 3. tasteless substances

10. Buffer Defn And Its Composition?

A **buffer** solution (more precisely, pH **buffer** or hydrogen ion **buffer**) is an aqueous solution consisting of a mixture of a weak acid and its conjugate base, or vice versa. Its pH changes very little when a small amount of strong acid or base is added to it.

11. Nucleic Acid Medical Application?

Applications of nucleic acid testing in diagnosis and therapy. **Nucleic acid** testing or **nucleic acid** amplification testing, often abbreviated as NAT or NAAT, is a technique that involves amplification and detection of genetic material—the **nucleic acids**, DNA or RNA—for diagnosis or to provide guidance on therapy.

12. Write The Composition Of Triacylglycerols?

The Chemistry of Triglycerides. A triglyceride is a lipid molecule made up of one unit of **glycerol** and three **fatty acids**, hence the tri- prefix, which means three. A triglyceride looks a little bit like a creature with three tails. The head is **glycerol**, which is a simple sugar alcohol compound.

13. Write Two Examples Of Cyclic Nucleotide?

Cyclic nucleotide has three components. It contains a nitrogenous base (meaning it contains nitrogen): for **example**, adenine in cAMP and guanine in cGMP. It also contains a sugar, specifically the five-carbon ribose. And finally, a **cyclic nucleotide** contains a phosphate.

14. Differentiate Between Oxidative And Hydrolytic Rancidity?

Oxidative rancidity is a natural process that affects fats and oil.

Hydrolytic rancidity refers to the odor that develops when triglycerides are hydrolyzed and free fatty acids are released. This reaction of lipid with water may require a catalyst, leading to the formation of free fatty acids and glycerol. In particular, short-chain fatty acids, such as butyric acid, are malodorous

15. What Do You Know About Km Of Micheals Menten Equation?

In biochemistry, Michaelis–Menten kinetics is one of the best-known models of enzyme kinetics.

The **Michaelis-Menten equation** can then be rewritten as $V = K_{cat} [\text{Enzyme}] [S] / (K_m + [S])$. K_{cat} is equal to k_2 , and it measures the number of substrate molecules "turned over" by enzyme per second. ... Taking the reciprocal of both side of the **Michaelis-Menten equation** gives: To determined the values of K_m and V_{max} .

16. Write Three Functions Of Cgmp?

Cyclic guanosine monophosphate (cGMP) is a cyclic nucleotide derived from guanosine triphosphate (GTP). cGMP acts as a second messenger much like cyclic AMP. Its most likely

mechanism of action is activation of intracellular protein kinases in response to the binding of membrane-impermeable peptide hormones to the external cell surface

17. Write Hydrogenation Process With Respect To Fats?

During **hydrogenation**, vegetable oils are reacted with hydrogen gas at about 60°C. A nickel catalyst is used to speed up the reaction. The double bonds are converted to single bonds in the reaction. In this way unsaturated fats can be made into saturated fats – they are hardened.

18. Write Five Properties Of Nitrogenous Bases?

1. **Tautomerism:** • All these bases can exist in keto-enol or amine-imine form. • At physiologic pH keto and amine form is predominant.
2. **UV light absorbance:** The conjugated double bonds of purine and pyrimidine derivatives absorb ultraviolet light
3. **Hydrophobicity:** • The purine and pyrimidine bases are hydrophobic and relatively insoluble in water at the nearneutral cell pH
4. **Weak Bases:** Purines or pyrimidines with an – NH₂ group are weak bases
5. **Heterocyclic:** • They are heterocyclic i.e. structures that contain other atoms in addition to carbon, such as nitrogen in the ring structure
6. **Aromatic:** The Nitrogen containing bases are aromatic i.e. they have alternate double bonds

19. What Are Enzymes? Write Its Classification With Example?

A several complex protein that are produced by cell and act as catalysts by specific biochemical reaction.

There were six classes of **enzymes** that were created so that **enzymes** could easily be named. These classes are: Oxidoreductases, Transferases, Hydrolases, Lyases, Isomerases, and Ligases. This is the international **classification** used for **enzymes**.

20. Five Properties Of Waxes?

Waxes are insoluble in water, but • soluble in fat solvents and are • negative for acrolein test. • very resistant to rancidity. Waxes are not easily hydrolyzed as the fats • and are indigestible by lipases (enzymes responsible for fat digestion in body) • Thus they are of no nutritional value

21. Role Of Nucleotides As Coenzyme And Intermediate Carrier?

ATP, an adenine **nucleotide**, is a universal energy currency in the cells of biological systems. Adenine **nucleotides** are components of three major **coenzymes**, NAD⁺, FAD, and CoA, organic molecules that assist in various biochemical reactions by serving as carriers. **Nucleotides** also function as regulators of metabolism.

22. Difference Between Thymine And Uracil?

Thymine becomes thymidine and deoxythymidine, Thymine is 2,4-dioxy-5- methyl-pyrimidine, Thymine (T)—only in DNA. Uracil (U) becomes uridine and deoxyuridine, Uracil is 2,4-

dioxypyrimidine, Uracil (U) —only in RNA. T and U differ by only one methyl group, which is present on T but absent on U.

23. Characters Of Vldl?

HDL-C (high-density lipoprotein): **HDL** cholesterol is also known as the "good cholesterol." **HDL** cholesterol helps clear **LDL** cholesterol away from blood vessel walls, decreasing the risk of developing heart disease and stroke. **VLDL-C** (very-low-density lipoprotein): **VLDL** cholesterol is made in the liver.

24. Bee Wax?

Bees-wax is secreted by the honeybees that use it to form the combs. • It is a mixture of waxes • chief constituent is myricyl palmitate

25. tRNA?

Once at the ribosome, an initiator **tRNA** binds the amino acid to the ribosome to start translation. It carries the amino acids and binds to the Messenger RNA (mRNA) to form proteins. ... Each **tRNA** can be used repeatedly to be transcribed from DNA in nucleus.

26. Spermaceti

Spermaceti • is a wax that is most often found in the head cavities of the sperm whale. • Fatty esters are formed essentially of • cetyl palmitate and • cetyl myristate. It was used in cosmetics, pharmacy and also in candles • recent international regulation concerning whale captures, has stopped its use. It is now replaced by synthetic cetyl palmitate.

27. Lipoxins

Lipoxins, an acronym for lipoxygenase interaction products, are bioactive autacoid metabolites of arachidonic acid made by various cell types.

28. Lipoprotein

Combinations of lipid and protein (lipoproteins) serve as the means of transporting lipids in the blood, Importantly, lipids provide the hydrophobic barrier that permits partitioning the aqueous contents of cells and subcellular structures as; phospholipids and sterols are the major structural elements of biological membranes.

29. Examples Of Coenzymes?

FAD, (Flavin Adenine Dinucleotide), NAD⁺ (Nicotinamide adenine Dinucleotide) and NADP⁺ (Nicotinamide adenine Dinucleotide Phosphate)

30. Properties Of Glycerol

It has the following properties: • Colorless • Viscous oily liquid with • sweet taste.

31. Regulation of compound or carrier of intermediates and co enzyme?

ATP, an adenine **nucleotide**, is a universal energy currency in the cells of biological systems. Adenine **nucleotides** are components of three major **coenzymes**, NAD⁺, FAD, and CoA, organic molecules that assist in various biochemical reactions by serving as carriers. **Nucleotides** also function as regulators of metabolism.

32. What is meant by rancidity and what is rancidity of fats?

Rancidity is a very general term and in its most general **meaning**, it refers to the spoilage of a food in such a way that it becomes undesirable (and usually unsafe) for consumption. When people say that a food has "gone bad," what they're usually talking about is **rancidity**.

Rancidification. **Rancidity** is the complete or incomplete oxidation or hydrolysis of **fats** and oils when exposed to air, light, moisture or by bacterial action, resulting in unpleasant taste and odor. ... When these processes occur in food, undesirable odors and flavors can result.

33. What is the composition of bile?

The **composition** of gallbladder **bile** is 97% water, 0.7% **bile** salts, 0.2% bilirubin, 0.51% fats (cholesterol, fatty acids, and lecithin), and 200 meq/l inorganic salts.

34. What is the interactions of DNA?

DNA-binding proteins are proteins that have **DNA**-binding domains and thus have a specific or general affinity for single- or double-stranded **DNA**. Sequence-specific **DNA**-binding proteins generally **interact** with the major groove of **B-DNA**, because it exposes more functional groups that identify a base pair.

35. What is enzyme kinematics?

Enzyme kinetics involves the measurement of the rate at which chemical reactions that are catalyzed by enzymes occur. Knowledge about the kinetics of an enzyme can reveal useful information about its catalytic mechanism, role in metabolism, factors that impact its activity, and mechanisms of inhibition

36. Five Function cAMP?

cAMP, cyclic AMP, or 3',5'-cyclic adenosine monophosphate) is a second messenger important in many biological processes. **cAMP** is a derivative of adenosine triphosphate (ATP) and used for intracellular signal transduction in many different organisms, conveying the **cAMP**-dependent pathway.

37. TAGs Store in Plant and Vertebrate?

Triacylglycerols (TAGs), which consist of three fatty acids bound to a glycerol backbone, are major storage lipids that accumulate in developing seeds, flower petals, pollen grains, and fruits of innumerable plant species. These storage lipids are of great nutritional and nutraceutical value and, thus, are a common source of edible oils for human consumption and industrial purposes

38. Two Example of Purine bases?

two purine bases, adenine and guanine,

39. Three Example of Pyrimidine?

thymine, cytosine, and uracil,

40. Two Example of Unnatural Pyrimidine?

???????

Composed by Zainab Arshad

Please confirm the answers before attempting, All answers are not confirmed

By vu Literature & education
Department

BIO202: Grand Quiz

Quiz Start Time: 07:41 AM, 27 December 2021

100% (10/10)

Question # 30 of 30 (Start time: 08:16:51 AM, 27 December 2020)

Total Marks:

Which of the following fatty acids would have the lowest critical micelle concentration -----

Select the correct option

☒

C4-COOH

☐

C5-COOH

☐

C6-COOH

☐

C8-COOH

Click to Save Answer & Move to Next Question

Question # 29 of 30 (Start time: 08:16:22 AM, 27 December 2020)

Total Marks: 1

Which amino acid causes least steric hinderance and is often found in bends or tightly packed chains of fibrous proteins?

Select the correct option

<input type="radio"/>	tyrosine
<input type="radio"/>	alanine
<input checked="" type="radio"/>	glycine
<input type="radio"/>	proline

[Click to Save Answer & Move to Next Question](#)

BIO202-Grand Quiz

TIME LEFT: 00:00:00
sec(s)

Question # 28 of 30 (Start time: 08:14:54 AM, 27 December 2020)

Total Marks:

This effect of pH and CO₂ concentration on the binding and release of oxygen by haemoglobin is called the -----

Select the correct option

☒

Bohr effect

☐

Nelson effect

☐

Nucleus effect

☐

Electron removal

▶

Click to Save Answer & Move to Next Question

BIO202: Grand Quiz

Quiz Start Time: 07:41 AM, 27 December 2021

Question # 26 of 30 (Start time: 08:12:42 AM, 27 December 2020)

Total Marks:

What is the name of the molecule formed when oxygen binds to haemoglobin?

Select the correct option

☒

Oxyhaemoglobin

☐

Carbaminohaemoglobin

☐

Oxyglobin

☐

Oxygen-haemoglobin

Click to Save Answer & Move to Next Question

Low levels of free fatty acids occur in all tissues, But substantial amounts sometimes can be found in the ---, particularly during fasting

Select the correct option

☐ Blood

☒ Plasma

☐ Stomach

☐ Intestine

[Click to Save Answer & Move to Next Question](#)

Question # 24 of 30 (Start time: 06:11:22 AM, 27 December 2020)

Total Marks:

Degree of Saturation (Y) (%) of Oxygen binding sites on all myoglobin or hemoglobin molecules can be any value between _____.

Select the correct option



0 and 1



-1 and +1



0 and 100



None of the above



Click to Save Answer & Move to Next Question



MC200203152: LARAIB ZAHRA

Time Left 18 sec(s)

BIO202: Grand Quiz

Quiz Start Time: 07:41 AM, 27 December 2020

Question # 23 of 30 (Start time: 08:10:05 AM, 27 December 2020)

Total Marks:

Which among the following is a non-essential amino acid?

Select the correct option

☒ Serine☐ Threonine☐ Lysine☐ Histidine

Click to Save Answer & Move to Next Question



Based upon the properties of the R group, mainly polarity and ability to interact with water, amino acids may be classified into ____ main classes.

Select the correct option

☐ two

☐ three

☒ five

☐ eleven



Click to Save Answer & Move to Next Question



Based upon the properties of the R group, mainly polarity and ability to interact with water, amino acids may be classified into ____ main classes.

Select the correct option

☒ two☐ three☐ five☐ eleven[Click to Save Answer & Move to Next Question](#)

BIO202 Grand Quiz Quiz Start Time: 07:41 AM, 27 December 2021

Question # 21 of 30 (Start time: 08:07:35 AM, 27 December 2020) Total Marks:

During the reversible binding of protein the Oxygenated (MbO₂) and deoxygenated (Mb) myoglobin exist in a ----- equilibrium

Mb + O₂ MbO₂

Select the correct option

☒ Simple

☐ Reverse

▶ Saving...



Fatty acids are carboxylic acids in which length of _____ chains range from 4 to 36 carbons.

Select the correct option

- ☒ Hydrocarbon
- ☐ Polycarbon
- ☐ Monosaccharide
- ☐ Disaccharides

Click to Save Answer & Move to Next Question

Question # 19 of 30 (Start time: 08:05:08 AM, 27 December 2020)

Total Marks: 1

Misfolding of proteins may occur spontaneously or as a result of mutation. _____ is a disease that results from the misfolding of proteins in the body.

Select the correct option

☒ Parkinson's disease☐ Influenza☐ Tuberculosis☐ Hepatitis

Click to Save Answer & Move to Next Question

Electrostatic interactions help stabilize the three dimensional tertiary structure of proteins. These interactions are formed as a result of ionic bonds formed between the positively and negatively charged amino acids. The positive charges are usually present on _____ amino acids.

Select the correct option

- | | |
|----------------------------------|---------|
| <input type="radio"/> | basic |
| <input checked="" type="radio"/> | acidic |
| <input type="radio"/> | neutral |
| <input type="radio"/> | all |



Click to Save Answer & Move to Next Question

Question # 17 of 30 (Start time: 08:02:18 AM, 27 December 2020)

Total Marks

The hydrolysis of sucrose to glucose and fructose is catalyzed by sucrase, which is also present in the intestinal brush border like lactase and maltase. Sucrase is also known as _____.

Select the correct option

☒ invertase☐ furanose☐ glycogen dehydrogenase☐ amylase

Click to Save Answer & Move to Next Question

Lipids are classified in following three major groups:

Select the correct option

- | | |
|----------------------------------|------------------------------|
| <input type="radio"/> | Simple lipids |
| <input type="radio"/> | Complex Lipids and |
| <input type="radio"/> | Precursor and Derived Lipids |
| <input checked="" type="radio"/> | ALL of above |

Click to Save Answer & Move to Next Question

MC200203102: LARAB ZAHRA

Time Left 07 sec(s)

BIO202 Grand Quiz

Quiz Start Time: 07:41 AM, 27 December 2020

Question # 15 of 30 (Start time: 08:09:19 AM, 27 December 2020)

Total Marks:

Which type of membrane lipid contains an acidic oligosaccharide?

Select the correct option

☐ globoside

☐ phosphatidylinositol

☒ cerebroside

☐ ganglioside

Click to Save Answer & Move to Next Question





MC200203152: LARAIB ZAHRA

Time Left 10 sec(s)

BIO202: Grand Quiz

Quiz Start Time: 07:41 AM, 27 December 2020

Question # 14 of 30 (Start time: 07:58:56 AM, 27 December 2020)

Total Marks:

What are the functions of dietary fat?

Select the correct option

- ☐ Provide energy to the body
- ☐ Cell signalling
- ☐ Form part of cellular membranes
- ☒ All of above



Click to Save Answer & Move to Next Question



The melting point of fatty acids depends upon chain length and _____

Select the correct option

- ☐ The shape of the fatty acids
- ☐ Degree of unsaturation
- ☐ The position of the double bond
- ☐ Charge on the carbon

Click of Every Answer & Move to Next Question

Alpha helices are the most common secondary structure found in proteins. Nearly all _____ proteins contain alpha helices in their membrane spanning domains.

Select the correct option

- ☒ trans membrane
- ☐ protective
- ☐ transport
- ☐ globular



Click to Save Answer & Move to Next Question



The binding of oxygen to one heme group enables an oxygen binding to the second heme group of the same hemoglobin molecule is called -----

Select the correct option

- | | |
|----------------------------------|----------------------|
| <input checked="" type="radio"/> | Cooperative binding |
| <input type="radio"/> | Structural binding |
| <input type="radio"/> | Amino acid binding |
| <input type="radio"/> | Nucleic acid binding |

Click to Save Answer & Move to Next Question

hemoglobin binds O₂ molecules.

Select the correct option

- | | |
|----------------------------------|------|
| <input checked="" type="radio"/> | Four |
| <input type="radio"/> | two |
| <input type="radio"/> | one |
| <input type="radio"/> | five |



Click to Save Answer & Move to Next Question

Question # 9 of 30 (Start time: 07:52:53 AM, 27 December 2020)

Total Marks: 1

hemoglobin binds O₂ molecules.

Select the correct option

☐ Four

☐ two

☐ one

☐ five

Click to Save Answer & Move to Next Question

BIO202:Grand Quiz

Quiz Start Time: 07:41 AM, 27 December 2021

Question # 8 of 30 (Start time: 07:51:10 AM, 27 December 2020)

Total Marks:

Which statement best describes 'domains' found in proteins?

Select the correct option

- ☐ It is a section of protein structure sufficient to perform a particular chemical or physical task such as binding of a substrate or other ligand.
- ☐ It is simply a recognizable folding pattern involving two or more elements of secondary structure and the connection(s) between them.
- ☒ It is the folding pattern of the secondary structural elements into a three-dimensional conformation.
- ☐ It is non- regular secondary structure that does not have a repeating element.



Click to Save Answer & Move to Next Question



Question # 7 of 30 (Start time: 07:49:45 AM, 27 December 2020)

Total Marks: 1

Approximately how many hemoglobin molecules are there in each red blood cell?

Select the correct option



30 million



300 million



50 million



5 million



Click to Save Answer & Move to Next Question

Question # 6 of 30 (Start time: 07:46:36 AM, 27 December 2020)

Total Marks: 1

Which characteristic does this lipid share with a wax?

Select the correct option

☒ Both contain one or more carboxyl groups.

☐ Both contain a polar head

☐ Both contain three fatty acids.

☐ Both contain one or more ester bonds

[Click to Save Answer & Move to Next Question](#)

Which characteristic does this lipid share with a wax?

Select the correct option

☐ Both contain one or more carboxyl groups.

☐ Both contain a polar head

☐ Both contain three fatty acids.

☐ Both contain one or more ester bonds

[Click to See Answer & Move to Next Question](#)



Once a heme group is oxidized, what molecule is produced?

Select the correct option

- | | |
|----------------------------------|---------------|
| <input checked="" type="radio"/> | methemoglobin |
| <input type="radio"/> | hemoglobin |
| <input type="radio"/> | myoglobin |
| <input type="radio"/> | hemoglobin c |



Click to Save Answer & Move to Next Question

Question # 4 of 30 (Start time: 07:44:19 AM, 27 December 2020)

Total Marks: 1

The positions of any _____ in fatty acids are specified relative to the carboxyl carbon by superscript numbers following Δ (delta).

Select the correct option

- | | |
|----------------------------------|---------------|
| <input type="radio"/> | Carbon atom |
| <input type="radio"/> | Hydrogen atom |
| <input checked="" type="radio"/> | double bonds |
| <input type="radio"/> | R-group |



Click to Save Answer & Move to Next Question

Question # 3 of 30 (Start time: 07:43:01 AM, 27 December 2020)

Total Marks: 1

which of following is example of derive lipid -----

Select the correct option



Carotenoid



Steroid



Terpenes



All of above

[Click to Save Answer & Move to Next Question](#)

Question # 1 of 30 (Start time: 07:41:02 AM, 27 December 2020)

Total Marks: 1

Which of the following is found in brain tissue?

Select the correct option

☐ D-alanine and D-glutamate☒ Free D-serine and D-aspartate☐ Free D-serine and D-alanine☐ Free D-serine and D-glutamate[Click to Save Answer & Move to Next Question](#)

When carbon dioxide binds directly with haemoglobin it forms

Select the correct option

☐ carbaminohaemoglobin

☐ carboxyhaemoglobin

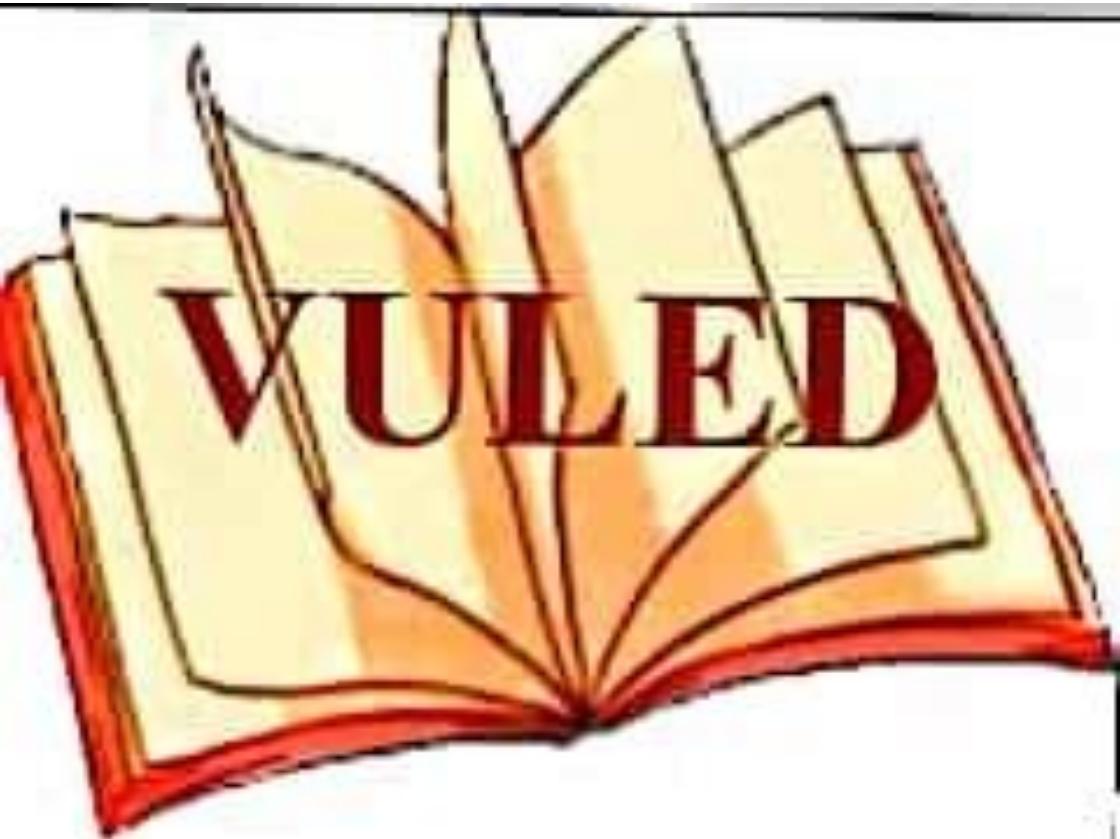
☐ carbon dioxyhaemoglobin

☐ carboglobulin

Click to Save Answer & Move to Next Question



Composed by Zainab Arshad



Bio202 MCQS (Mid-Term)

Glucose residues in amylose are linked by _____.

- α (1,4) linkage
- β (1,4) linkage
- α (1,6) linkage
- None of these

Q

The number of carbon atoms in lysine is _____.

- 4
- 6
- 8
- 10

Q

If the carbonyl group is present at the end of the monosaccharide then it is called _____.

- Acid anhydride
- Aldose
- Ketose
- None of these

Q

The number of stereoisomers for a molecule containing only one chiral carbon is _____.

- 16
- 2
- 4
- 8

Q

Seminal fluid is rich in _____.

- Fructose
- Lactose
- Xylose
- Arabinose

Q

Which of the following glycosidic linkage exists between two glucose units of maltose?

- alpha 1,4
- beta 1,4
- alpha 1,6
- alpha 1,4 and alpha 1,6

Q

Amino sugar is formed by the replacement of the hydroxyl group at ----- of the parent monosaccharide with amino group.

- C-1
- C-2
- C-3
- C-6

Q

Which one of the following is a structural homopolysaccharide?

- Cellulose
- Starch
- Glycogen

BIO-202 Biochemistry MCQS and Notes (MID Term)

All of these

Q

Which one of the following amino acids is not specified by three letter codon?

Serine

Proline

Selenocysteine

Methionine

Q:

Acid dissociation constants are designated as _____.

PKa

K

Pa

None of these

Q

The pI of glutamate is _____.

1.2

5.6

3.22

6.7

Q

Which of the following amino acid is negatively charged at physiological pH?

Aspartate

Lysine

Alanine

Proline

Q

Which of the following refers to particularly stable arrangements of amino acid residues giving rise to recurring structural patterns?

Primary structure

Secondary structure

Tertiary structure

Quaternary structure

Q

Keratin is present in _____.

Hair

Nail

Hoof

All of these

Q

Which of the following amino acid is involved in the hydrophobic interactions in the tertiary structure of protein?

Phenylalanine

Cysteine

Glycine

None of these

Q

The free energy of a protein molecule is influenced by _____.

Hydrophobicity

hydrogen bonds

electrostatic interactions

All of these

BIO-202 Biochemistry MCQS and Notes (MID Term)

Q

Which of the following diseases is caused by protein misfolding?

- Alzheimer's disease
- Huntington's disease
- Parkinson's disease
- All of these

Q

Iron is a _____.

- non-metal
- metalloid
- transition metal
- halogen

Q

Myoglobin can bind _____ molecules of oxygen.

- One
- Two
- Three
- Four

Q

The partial pressure of oxygen (pO_2) in lungs is about _____.

- 30 mmHg
- 50 mmHg
- 100 mmHg
- 200 mmHg

Q

In sickle cell anemia, Glutamate is replaced with _____.

- Arginine
- Alanine
- Methionine
- Valine

Q

Oxy hemoglobin dissociation curve describe the relationship of -----

- Available Oxygen
- Amount of carbon dioxide carried by hemoglobin
- Fibrinogen
- Oxy-hemoglobin curve stability

Q

Which one of the following is made up of two molecules of glucose?

- Maltose
- Starch
- Cellulose
- Amylose

Q

Which bond exists between the carbonyl group and oxygen of a hydroxyl group in ring structure of glucose?

- Ionic
- Covalent
- hydrophobic interaction
- both ionic and covalent

Q

In Benedict test, the formation of cuprous oxide is indicated by the formation of _____.

- blue ppt

BIO-202 Biochemistry MCQS and Notes (MID Term)

silver mirror
red ppt
none of these

Q

Glucose 6 Phosphate is formed by the addition of phosphate group to C6 of glucose by _____ linkage.

Ether
Ester
Ionic
none of these

Q

E. coli convert lactose of milk to lactic acid by action of _____.

Beta galactosidase
Amyloglucosidase
Alpha amylase
Maltase

Q

At any pH above pI, glycine has a net _____ charge and will move towards the _____.

negative, anode
negative, cathode
positive, anode
positive, cathode

Q

Which of the following amino acids contain two COOH groups?

Alanine
Glutamate
Glycine
Valine

Q

Which of the following amino acid is positively charged at physiological pH?

Lysine
Aspartate
Tyrosine
Alanine

Q

Peptide bond is _____ linkage between two amino acids.

Ester
Amide
Ether
None of these

Q

Which of the following shows the greatest tendency to form α helices in most experimental model systems?

Glycine
Alanine
Proline
Serine

Q

Immunoglobulin G (IgG) consists of _____.

Two heavy chains and two light chains
Four heavy chains
Four light chains
None of these

BIO-202 Biochemistry MCQS and Notes (MID Term)

Q

The free energy of a protein molecule is influenced by _____.

- Hydrophobicity
- hydrogen bonds
- electrostatic interactions
- All of these

Q

Proteins are denatured by _____.

- Temperature
- pH
- organic solvents
- temperature, pH, organic solvents

Q

About _____ of amino acid residues in the myoglobin are found in alpha helices.

- 98%
- 78%
- 27%
- 10%

Q

Hemoglobin is found exclusively in _____.

- white blood cells
- red blood cells
- platelets
- platelets and white blood cells

Q

The partial pressure of oxygen (pO₂) in lungs is about _____.

- 30 mmHg
- 50 mmHg
- 100 mmHg
- 200 mmHg

Q

In sickle cell anemia, Glutamate is replaced with _____.

- Alanine
- Methionine
- Valine
- Arginine

1. Table sugar is ... Sucrose
2. R group in Alanine side chain isCH₃
3. Which amino acid is ketogenic and glucogenic.... Tyrosine
4. Example of homo polysaccharides ...
5. Amount of CO₂ transported by bicarbonate is
6. Medium size fatty acids contain no of carbons....
7. The substitution of a hydrogen for the hydroxyl group at C-6 of

L-galactose & • L-mannose produces; • L-fucose and • L-rhamnose. All of these .

BIO-202 Biochemistry MCQS and Notes (MID Term)

8. If the second group is a hydroxyl, the Oglycosidic bond is an acetal link because it results
9. PI of glycine is ... 5.97
10. PL of alanine is5.7
11. Glutamate PI is3.22
12. PL of histidine7.59
13. Histadine has 3 Diassociate Hydrogen
14. Negative charged amino acids ... Aspartate – Glutamate
15. Keto genic Amino Acids Lucine – Lysine
16. Amino Acids have linkage ... Amide linkage
17. Sickle cell anemia Glutamate – Valine
18. Postitive charged AminoacidsLysine-arginine-Histidine
19. enzyme that catalyzes the interchange, or shuffling, of disulfide bonds until the bonds of the native conformation are formed. Protein disulfide isomerase (PDI)
20. organic solvents disturb interaction in protein..... Hydrophobic interaction
21. Iron belongs to Transition metals
22. Polar amino acid is Histidine
23. 1 torr = 1mmHg
24. In hemoglobin the 2 molecules have sigmoidal
25. carbamates account for about 15% of the CO₂ in venous blood
26. the CO₂ is transported as dissolved..... • HCO₃⁻ (80 to 85%)
27. At high altitude of hills and mountains, where the pO₂ is considerably _____The delivery of oxygen to the tissues is _____.....Lower-reduced.
28. Fatty Acids are classified on the basis of Hydrocarbon Chain Length and Degree of saturation and dietary requirement..

Carbohydrates

Q. Difference between Aldose and Ketose sugar.

- If the carbonyl group is at an end of the carbon chain (that is, in an aldehyde group) the monosaccharide is an aldose
- If the carbonyl group is at any other position (in a ketone group) the monosaccharide is a ketose

Q. Define Carbohydrates and Explain its 4 major groups.

Carbohydrates are polyhydroxy aldehyde or polyhydroxy ketones. It is further classified into 4 major groups.

Q. what are simplest monosaccharides? Give 2 examples

The simplest monosaccharides are the two three-carbon trioses

Examples : – Glyceraldehyde,an aldotriose – Dihydroxyacetone, a ketotriose

BIO-202 Biochemistry MCQS and Notes (MID Term)

Q. Define Disaccharides and give example.

Disaccharides are those sugars which yield two molecules of the same or different monosaccharides on hydrolysis – Maltose - 2 molecules of glucose on hydrolysis

Examples. Maltose , sucrose , galactose

Q. Define oligosaccharides with example.

Oligosaccharides are short chains of monosaccharide units or residues (3-10) joined by characteristic linkages called glycosidic linkage

Q. Define polysaccharides with example

Polysaccharides (Glycans) are those which yield more than 10 molecules of monosaccharides on hydrolysis • Some have hundreds or thousands of units • Some polysaccharides, such as cellulose, are linear chains; others, such as glycogen, are branched

Q. Define starch and give its structure.

Starch is a homopolysaccharide formed by units of glucose and the storage form of carbohydrates in plants.

Structure contains two types of homopolysaccharides, amylose and amylopectin.

Contains thousands monomers linked by (1,4 glycoside linkage)

Q. Difference between Homo polysaccharides and heteropolysaccharides

Polysaccharides are further divided into two groups:

1. Homopolysaccharides (homoglycans): Polymers of same monosaccharide units e.g. starch, glycogen, inulin, cellulose, dextrans, dextrans
2. Heteropolysaccharides (heteroglycans): Polymer of different monosaccharide units or their derivatives e.g. Mucopolysaccharides (glycosaminoglycans)

Q. Write the Biomedical Importance of Carbohydrates.

Biomedical Importance • Chief source of energy • Constituents of compound lipids and conjugated proteins • Lactose , the principal sugar of milk • Degradation products utilized for synthesis of other substances such as fatty acids, amino acids, cholesterol, etc

BIO-202 Biochemistry MCQS and Notes (MID Term)

Constituents of mucopolysaccharides which form the ground substance of mesenchymal tissues

- Certain carbohydrate derivatives are used as drugs like cardiac glycosides. Inherited deficiency of certain enzymes in metabolic pathways of different carbohydrates can cause diseases e.g. galactosemia, glycogen storage diseases, lactose intolerance, etc
- Derangement of glucose metabolism is seen in Diabetes mellitus

Q. What is lactose intolerance?

Lactose tolerance means the body cannot easily digest lactose, a type of natural sugar found in milk and dairy products.

Q. Define isomerism.

Isomerism • The existence of two or more compounds having the same molecular formula but a different arrangement of atoms within the molecule..

Q. Define Allotropy

Allotropy, the existence of a chemical element in two or more forms, which may differ in the arrangement of atoms in crystalline solids

Q. Define types of Isomers

Stereoisomers have the fixed spatial arrangement of atoms are called **stereoisomers**

Stereoisomers that are mirror images of each other are called **enantiomers**

Pairs of stereoisomers that are not mirror images of each other are called **diastereomers**

Q. What is the identifying characteristics of stereoisomers?

The identifying characteristic of stereoisomers is that they cannot be interconverted without temporarily breaking one or more covalent bonds

Q. What is asymmetric or chiral?

A carbon atom to which four different atoms or groups of atoms are attached is said to be **asymmetric or chiral**

Q. how the Configuration is conferred of Isomers

(a) chiral centers, around which substituent groups are arranged in a specific orientation – (b) double bonds, around which there is no freedom of rotation

Carbohydrates

BIO-202 Biochemistry MCQS and Notes (MID Term)

Q. Define Geometric Isomers

Geometric isomers; differ in the arrangement of their substituent groups with respect to the nonrotating double bond (each is a well-defined compound that can be separated from the other, and each has its own unique chemical properties)

Q. what is D and L isomerism?

D and L isomerism: • The designation of a sugar isomer as the D form or as the L form is determined by its spatial relationship to the parent compound of the carbohydrates, the glyceraldehyde

Q. How can we determine that which sugar belongs to D or L series?

• (carbon 5 in glucose) determines whether the sugar belongs to the D or L series. • When the — OH group on this carbon is on the right the sugar is the D isomer; • when it is on the left, it is the L isomer

Q. difference btw Racemic and resolution

when equal amount of dextrorotatory and levorotatory isomers are present i, the resulting mixture has no optical activity Such a mixture is said to be **racemic** and separation of optically active isomers from a racemic mixture is called **resolution**

Q. how cyclic structure is formed

As the two reacting groups, the aldehyde and the alcoholic group, belong to the same molecule, a cyclic structure forms

Q. Difference btw hemiacetals or hemiketals

The formation of ring structures is the result of a general reaction between alcohols and aldehydes or ketones to form derivatives called **hemiacetals or hemiketals**.

If the alcohol reacts with aldehydes they form Hemiacetals on other hand when Alcohol reacts with ketones it forms hemiketals.

Q Define Anomers or anomeric carbon

Isomeric forms of monosaccharides that differ only in their configuration about the hemiacetal or hemiketal carbon atom are called **anomers** The **carbonyl carbon atom is called the anomeric carbon**

Q. Difference btw Pyran and Furan

BIO-202 Biochemistry MCQS and Notes (MID Term)

The ring structures of monosachhrides are similar to the ring structures of either pyran (six membered ring and are called pyranoses or furan a five membered ring which are knwon as furanoses.

Crystalline glucose is α -D glucopyranose

Q. Define Mutarotaion

the alpha and beta anomers of D-glucose interconvert in a aqueous solution by a process called mutarotation. This mixture contains .

one-third α -D-glucose, • two-thirds β -D-glucose,

Q. how enzymes distinguish α and β forms

α and β forms are NOT mirror images and are referred to as diastereomers • Enzymes are able to distinguish between these two structures and use one or the other preferentially

Q. synthesis of glycogen and cellulose

glycogen is synthesized from α D-glucopyranose, whereas cellulose is synthesized from β D-glucopyranose

Q. Define Epimers with example.

Epimers • Two sugars which differ from one another only in configuration around a single carbon atom are termed epimers • Glucose and Galactose are an example of an epimeric pair which differ only with respect to C4

Q. Function and uses of Pentose sugar.

Pentoses: • D-Ribose is a constituent of nucleic acid RNA and also certain co-enzymes like FAD, NAD & coenzyme A • D-2-Deoxyribose is a constituent of DNA

Q. Function and uses of Hexoses.

Hexoses • D-Glucose (Dextrose, Grape sugar): • Most dietary carbohydrate is absorbed into the bloodstream as glucose formed by hydrolysis of dietary starch and disaccharides, and other sugars are converted to glucose in the liver

Sources

BIO-202 Biochemistry MCQS and Notes (MID Term)

Sources include fruit juices, hydrolysis of starch, cane or beet sugar, maltose and lactose • Glucose is the major metabolic fuel of mammals

- It is the chief physiological sugar present in normal blood at a fairly constant level • All tissues utilize glucose for energy • Erythrocyte utilize glucose solely for energy purposes and Brain cells rely heavily on glucose

synthesis of all the other carbohydrates in the body, including – glycogen for storage; – ribose and deoxyribose in nucleic acids; – galactose in lactose of milk, in glycolipids

- And in combination with protein in glycoproteins and proteoglycans • Stored as Glycogen in liver and muscles only • Excreted in the urine (glucosuria) in poorly controlled diabetes mellitus as a result of hyperglycemia

Q. Define galactosemia

Hereditary galactosemia as a result of failure to metabolize galactose leads to cataracts

Q. Define lactones

Both aldonic and uronic acids form stable intramolecular esters called lactones

Q. What is GDL and its sources.

Glucono delta-lactone (GDL) is commonly found in honey, fruit juices, personal lubricants, and wine . GDL is neutral

Q. What is honey? Why it has greater sweetness?

Honey is a sugar food substance obtained by the Honey bee produce by the chemical action of insects. Honey gets its sweetness from the monosaccharides fructose and glucose.

Q. Where in the body D Glucuronic acid is formed? Write its uses

In the body, D Glucuronic acid is formed from glucose in liver • It occurs as a constituent of certain polysaccharides • It is of importance in that it conjugates toxic substances, drugs, hormones and even bilirubin And converts them to a soluble non toxic substance, a glucuronide, which is excreted in urine • Oxidation of the carbon at the both ends of the carbon chain

Q. Why monosaccharides are called reducing sugars?

Monosaccharides can be oxidized by relatively mild oxidizing agents such as cupric (Cu^{2+}) ion • The carbonyl carbon is oxidized to a carboxyl group • Glucose and other sugars capable of reducing cupric ion are called reducing sugars

Q. What happens in Fehling's and benedicts reaction?

BIO-202 Biochemistry MCQS and Notes (MID Term)

Oxidation of the anomeric carbon (and probably the neighboring carbon) of glucose and other sugars under alkaline conditions is the basis for • Fehling's reaction • Benedicts reaction The cuprous ion (Cu^+) produced forms a red cuprous oxide precipitate.

Q. Properties of Monosaccharides

Properties of Monosaccharides • 2. Condensation of phosphoric acid with one of the hydroxyl groups of a sugar forms a phosphate ester, as in glucose 6phosphate Sugar phosphates are relatively stable at neutral pH and bear a negative charge

Q. write name of amino sugars.

The amino sugars include: – D -glucosamine, a constituent of hyaluronic acid – D -galactosamine (also known as chondrosamine), a constituent of chondroitin – D –mannosamine

Q. define Hexosamines.

The Amino Sugars (Hexosamines) are Components of Glycoproteins, Gangliosides, & Glycosaminoglycans

Several antibiotics (e.g, erythromycin) contain amino sugars, which are important for their antibiotic activity

Q. how deoxy sugar is formed?

When oxygen of a $-\text{OH}$ group is removed in a monosaccharide, leaving behind only hydrogen, deoxy sugars are formed •

Q. how glycoside is formed

are formed by condensation between the hydroxyl group of the anomeric carbon of a monosaccharide, and a second compound that may or may not (in the case of an aglycone) be another monosaccharide

The monosaccharides may be reduced to form their corresponding alcohols by reducing agents

Examples are – D-Glucose yields DSorbitol – D-Galactose yields D-Dulcitol – D-Mannose yields D-Mannitol – Ribose to ribitol

Q. What is Sorbitol?

Is a sugar alcohol with a sweet taste which the human body metabolizes slowly. It can be obtained by reduction of glucose, changing the aldehyde group to a hydroxyl group.

Q. uses of Sorbitol

Sorbitol: • 35-60% sweetness of glucose • Used as an artificial sweetner • Accumulates in tissues such as the eye lens in diabetes mellitus

BIO-202 Biochemistry MCQS and Notes (MID Term)

Q. Uses of Mannitol

Mannitol: • Administered intravenously as an osmotic diuretic in acute renal failure • Also used to relieve raised intracranial pressure by forced diuresis

Q. Define Tautomerization

The process of shifting a hydrogen atom from one carbon atom to another to produce enediols is known as tautomerization

When glucose is kept in alkaline solution for several hours, it undergoes isomerization to form D-fructose and D-mannose

Q. Define Osazone formation

Osazone formation: • It is a useful means of preparing crystalline derivatives of sugars called osazones • They are obtained by adding a mixture of phenylhydrazine hydrochloride and sodium acetate to a sugar solution and heating in water bath for 45 mins. Crystals are formed after the solution is cooled slowly • Reaction involves only the carbonyl carbon and the adjacent carbon.

Maltose sunflower shaped • And lactose powder puff shaped

needle shaped crystal arranged like a broom glucosazone, hedgehog or pincushion with pins or flower of touch me not plant lactosazone, sun flower shaped or petal shaped crystals of maltosazone

Q. write characteristics of osazones.

Osazones have characteristic – Melting points – Crystal structures – Precipitation time – and thus are used in identifying the sugars

Q. write the actions of Acids on Carbohydrates.

Action of acids on carbohydrates • Polysaccharides are hydrolyzed into their constituent monosaccharides by boiling with dilute acids • With concentrated acids the monosaccharides are decomposed. Pentoses yield a cyclic aldehyde furfural with 12% HCL • Hexoses are decomposed by hot strong acids to give hydroxy methyl furfural

Q. Characteristics of furfural compounds.

With concentrated acids the monosaccharides are decomposed. Pentoses yield a cyclic aldehyde furfural with 12% HCL • Hexoses are decomposed by hot strong acids to give hydroxy methyl furfural

The furfural products thus formed can condense with certain organic phenols (naphthol) to form compounds having characteristic colours • This forms basis of certain tests used for detection of sugars

BIO-202 Biochemistry MCQS and Notes (MID Term)

Molisch's and • Selivanoff's are examples of such tests

Maltose comes from the hydrolysis of starch (by amylase) • It is in turn hydrolysed to glucose by maltase, which is located on the intestinal brush border Disaccharides

In lactating mammary gland, the lactose is synthesized from glucose by the duct epithelium • Many organisms that are found in milk, e.g., E.Coli convert lactose of milk to lactic acid (by β galactosidase) thus causing souring of milk

Lactase, the specific enzyme which hydrolyses lactose is present in the intestinal brush border

Q . what is sucrose ? write its location in human body

The hydrolysis of sucrose to glucose and fructose is catalyzed by sucrase (also called invertase), which is also present in the intestinal brush border like lactase and maltase

Q. Biomedical Importance of oligosaccharides

- Integral membrane proteins contain covalently attached carbohydrate units, oligosaccharides, on their extracellular face • Many secreted proteins such as antibodies and coagulation factors also contain oligosaccharide units

The oligosaccharides participate in molecular targeting and cell to cell recognition

- They also mark the passage of time and determine when the proteins should be taken out of circulation

The human ABO blood groups illustrate the effects of glycosyl- transferases

- Carbohydrates are attached to glycoproteins and glycolipids on the surfaces of red blood cells
- For one type of blood group, one of the three different structures, termed A, B, and O, may be present • These structures have in common an oligosaccharide foundation called the O (or sometimes H) antigen

The A and B antigens differ from the O antigen by the addition of one extra monosaccharide, either Nacetylgalactosamine (for A) or galactose (for B) through an α 1,3 linkage to a galactose moiety of the O antigen

Q. Properties of Polysaccharides

BIO-202 Biochemistry MCQS and Notes (MID Term)

Most carbohydrates found in nature occur as polysaccharides, polymers of medium to high molecular weight

Polysaccharides also called glycans, differ from each other – in the identity of their recurring monosaccharide units – in the length of their chains – in the types of bonds linking the units – in the degree of branching

Some homopolysaccharides serve as storage forms of monosaccharides that are used as fuels • Other homopolysaccharides (cellulose and chitin) serve as structural elements in plants

The most important storage polysaccharides are starch in plant cells and glycogen in animal cells
polysaccharides occur intracellularly as large clusters or granules

Most plant cells have the ability to form starch and starch storage is especially abundant in tubers (underground stems), such as potatoes and in seeds

Heteropolysaccharides provide extracellular support for organisms of all kingdoms • For example, the rigid layer of the bacterial cell envelope (the peptidoglycan) is composed in part of a heteropolysaccharide built from two alternating monosaccharide units

Starch contains two types of glucose polymers: – Amylose – amylopectin • It is the most important dietary carbohydrate in cereals, potatoes, legumes, and other vegetables

Amylose (13–20%), consists of long, unbranched helical structure of D glucose residues connected by (α 1→4) linkages (as in maltose)

Protein

Q. Define Amino Acids

Proteins are linear polymers built of monomer units called amino acids

Q. On what factor protein function depends

The function of a protein is directly dependent on its three dimensional structure

Q. Biomedical importance of Proteins

BIO-202 Biochemistry MCQS and Notes (MID Term)

Q. What is the remarkability of proteins?

Remarkably, proteins spontaneously fold up into three-dimensional structures that are determined by the sequence of amino acids in the protein polymer

Q. Explain functions of Protein

Proteins contain a wide range of functional groups. These functional groups include • alcohols, • thiols, • thioethers, • carboxylic acids, • carboxamides, • and a variety of basic groups. When combined in various sequences, this array of functional groups accounts for the broad spectrum of protein function. Proteins can interact with one another and with other biological macromolecules to form complex assemblies.

Q. What products can be prepared by the Amino Acids?

enzymes, – hormones, – antibodies, – transporters, – muscle fibers

the lens protein of the eye, – feathers, – spider webs, – rhinoceros horn, – milk proteins, – antibiotics, – mushroom poisons etc

Q. How does protein act as assemblies?

The proteins within these assemblies can act synergistically to generate capabilities not afforded by the individual component proteins

Q. Function of a protein as Assemblies?

These assemblies include macromolecular machines that carry out; • the accurate replication of DNA, • the transmission of signals within cells, and many other essential processes

Q. Function of Rigid protein?

Rigid units can function as structural elements in the cytoskeleton (the internal scaffolding within cells) or in connective tissue

Q. Function of Flexible part of proteins

Parts of proteins with limited flexibility may act as • hinges, • springs, and • levers

Q. How many set of Amino Acids

20 amino acids

Which are covalently linked in characteristic linear sequence. • Each of these amino acids has a side chain with distinctive chemical properties

Q. How does cell can produce enzymes?

BIO-202 Biochemistry MCQS and Notes (MID Term)

Cells can produce proteins with strikingly different properties and activities by joining the same 20 amino acids in many different combinations and sequence

Q. How the light is produced in firefly?

The light produced by fireflies is the result of a reaction involving the protein luciferin and ATP, catalyzed by the enzyme luciferase

Q. Define the composition of protein.

Proteins are polymers of amino acids, with each amino acid residue joined to its neighbor by a specific type of covalent bond termed the peptide bond

Q. what does the term Residue Means?

The term "residue" reflects the loss of the elements of water when one amino acid is joined to another

All of the 20 common amino acids are α amino acids

Q. How many Functional groups a protein contain.

They have a carboxyl group and an amino group bonded to the same carbon atom (the α carbon)

Q. How Amino acids are different from each other's

They differ from each other in their side chains, or R groups, which vary in – structure, – size, – electric charge, – and which influence the solubility of the amino acids in water

Q. Define standard Amino Acids

The 20 amino acids that constitute the monomer units of proteins are the standard amino acids as the genetic code specifies only these 20 L - α -amino acids

Q. List the Amino acids which are produced by modification

– conversion of peptidyl proline and lysine to – 4-hydroxyproline and –

5-hydroxylysine – the conversion of peptidyl glutamate to carboxyglutamate

the methylation, – formylation, – acetylation, – prenylation, and – phosphorylation of certain aminoacyl residues

Q. list uncommon Amino acids.

uncommon amino acids – 4-hydroxyproline, a derivative of proline –

BIO-202 Biochemistry MCQS and Notes (MID Term)

5-hydroxylysine, derived from lysine • The former is found in plant cell wall proteins, and both are found in collagen

6-NMethyllysine is a constituent of myosin, a contractile protein

- γ -carboxyglutamate, found in the blood clotting protein prothrombin and in certain other proteins that bind Ca^{2+} as part of their biological function

Q. List additional Amino Acids found in cell.

Some 300 additional amino acids have been found in cells but not as constituents of proteins • Examples include – Ornithine and citrulline (intermediates in urea cycle)

Taurine (found in bile acids) – δ -Aminolevulinic acid (intermediate in haem synthesis)

Q. What is called D Amino Acids and its examples.

D- AMINO ACIDS • D-amino acids are also nonstandard amino acids that occur naturally and include – free D- serine, and D-aspartate in brain tissue. D-alanine & D-glutamate in the cell walls of gram positive bacteria • D-amino acids are also found in some antibiotics

Q. Selenocysteine, the 21st L- α -Amino Acid?

- Selenocysteine is an L- α -amino acid found in a handful of proteins, including certain peroxidases and reductases where it participates in the catalysis of electron transfer reactions

Q. how modification occurs in Serine

Modification to a serine that occurs while the serine is bound to a unique RNA. The hydroxyl group of serine is replaced by a selenium atom. The selenocysteine is then inserted into a protein as it is being synthesized

- Since selenocysteine is inserted into polypeptides during translation, it is commonly referred to as the "21st amino acid"

selenocysteine is not specified by a simple three-letter codon

Q. Which Amino acid is referred as 22

22nd Amino Acid • Pyrrolysine (abbreviated as Pyl or O) is a naturally occurring, genetically coded amino acid used by some methanogenic archaea.

Q. how many stereoisomers Amino acids contain.

The α -carbon atom is thus a chiral center and thus amino acids have two possible stereoisomers

BIO-202 Biochemistry MCQS and Notes (MID Term)

Q. How many convention are used to identify carbon in Amino acids?

Two conventions are used to identify the carbons in an amino acid The additional carbons in an R group are commonly designated β , γ , δ and so forth, proceeding out from the α carbon

carbon atoms are simply numbered from one end, giving highest priority (C-1) to the carbon with the substituent containing the atom of **highest atomic number**

carboxyl carbon of an amino acid would be C-1 and the α carbon would be C-2

In some cases, such as amino acids with **heterocyclic R groups** (such as **histidine**), the **Greek lettering system** is ambiguous and the numbering convention is therefore used

Leucine thus has $\delta 1$ and $\delta 2$ carbons

Q. Define zwitterion

The form of an amino acid that has both a positive and a negative charge is called a **zwitterion**

Amino acids in solution at **neutral pH** exist **predominantly as dipolar ions** (zwitterions)

Q. Define Acidic and Basic Amino Acids.

In this form, the amino group is protonated ($-\text{NH}_3^+$) and the carboxyl group is deprotonated ($-\text{COO}^-$) • A zwitterion can act either as an acid (proton donor) or as a base (proton acceptor)

Q. Define Amphoteric or ampholytes.

Substances having this dual nature are amphoteric and are often called ampholytes The **ionization state** of an amino acid varies with **pH**

Q. what happens at physiological pH to Amino Acids?

At physiological pH, the carboxyl group is dissociated, forming the negatively charged carboxylate ion ($-\text{COO}^-$) and the amino group is protonated (NH_3^+)

Q. Define Alanine property.

A simple monoamino monocarboxylic - amino acid, such as alanine, is a diprotic acid when fully protonated—it has two groups, the COOH group and the $-\text{NH}_3^+$ group, that can yield protons.

Each **acid** has a characteristic **tendency to lose its proton** in an aqueous solution

The **stronger the acid**, the **greater its tendency to lose** its proton

Q. Define the tendency of an Acid to lose proton

The tendency of any acid (HA) to lose a proton and form its conjugate base (A^-) is defined by the equilibrium constant (K_{eq}) for the reversible reaction •

BIO-202 Biochemistry MCQS and Notes (MID Term)



Q. Define Ionization constant

Equilibrium constants for ionization reactions are usually called ionization constants or acid dissociation constants, often designated pK. The **stronger the tendency to dissociate a proton**, the stronger is the acid and the **lower its pKa**. The stronger the acid, the lower its pKa. At the **midpoint** of the titration, the **concentrations** of the **proton donor and proton acceptor are equal**, and the pH is numerically equal to the pKa.

Q. Define pKa

pKa is the measure of the tendency of a group to give up (donate) a proton with the tendency decreasing ten-fold as the pKa increases by one unit. The **pKa** for the most acidic group (COOH) is pK₁, whereas the **pKa** for the next most acidic group (NH₃⁺) is pK₂. The dipolar form persists until the pH approaches 9, when the protonated amino group loses a proton.

Alanine in acid solution pH less than 2 its net charge is +1

Alanine in neutral solution pH approximately 6 its net charge is zero

alanine in basic solution (pH greater than 10) net charge is -1

Q. Glycine is diprotic acid. Justify ? OR write Characteristics of Glycine

A simple amino acid e.g. glycine is a diprotic acid when fully protonated. • This means that it has two groups, the COOH and the NH₃⁺ group that can yield protons.

The second piece of information is Glycine acid has two regions of buffering power.

glycine is not a good buffer at the pH of intracellular fluid or blood, about 7.4.

Q. Define Isoelectric point or Isoelectric pH

The characteristic pH at which the net electric charge is zero is called the isoelectric point or isoelectric pH, designated pI.

Alanine has only two dissociable hydrogens (one from α carboxyl & one from α amino group).

Q. Define Buffers

A buffer is a solution that resists change in pH following the addition of an acid or base.

Histidine has got 3 dissociable hydrogens

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Q. why Histidine is found in Intra or extra cellular fluids of animals?

Only histidine has an R group ($pK_a = 6.0$) providing significant buffering power near the neutral pH usually found in the intracellular and extracellular fluids of most animals

Q. Define Aromatic Amino Acids with examples

The aromatic amino acids have been grouped together because they all contain ring structures with similar properties, but their polarity differs.

Examples Phenylalanine – Tyrosine – Tryptophan

The aromatic ring is a six-membered carbon–hydrogen ring with three conjugated double bonds (the benzene ring or phenyl group)

Q. Define Benzene Compound.

Benzene is an organic chemical compound with the chemical formula C_6H_6 . Its molecule is composed of 6 carbon atoms joined in a ring, with 1 hydrogen atom attached to each carbon atom. Benzene ring determine whether the amino acid side chain engages in polar or hydrophobic interactions

Q. Enlist of Amino acids that are Aromatic

Phenylalanine – Tyrosine – Tryptophan – with their aromatic side chains, are relatively nonpolar (hydrophobic). – All can participate in hydrophobic interactions.

phenylalanine, the ring contains no substituents, and the electrons are shared equally between the carbons in the ring, resulting in a very nonpolar hydrophobic structure in which the rings can stack on each other. In tyrosine, a hydroxyl group on the phenyl ring engages in hydrogen bonds, and the side chain is therefore more polar and more hydrophilic. • Tryptophan is therefore also more polar than phenylalanine

Tyrosine and tryptophan are significantly more polar than phenylalanine, because of the tyrosine hydroxyl group and the nitrogen of the tryptophan indole ring

Q. write characteristics of Aliphatic polar uncharged R group

The R groups of these amino acids are more soluble in water, or more hydrophilic, than those of the nonpolar amino acids. Because they contain functional groups that form hydrogen bonds with water

Q. Enlist Aliphatic Amino Acids

This class of amino acids includes • serine, threonine, • cysteine, • asparagine, and • glutamine. These Amino acids have zero net charge at neutral pH

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Serine & threonine of this class contain a polar hydroxyl group

side chains of asparagine & glutamine contain a carbonyl group & amide group, both of which can participate in hydrogen bonding

The **polar hydroxyl groups of serine** & threonine serve as a site of **attachment for phosphate groups**

The **amide group of asparagine** & the **hydroxyl group of serine & threonine** serve as a **site of attachment** for oligosaccharide chains in **glycoproteins**

Amino acids with side chains that contain an amide group (asparagine and glutamine) or a hydroxyl group (serine and threonine) can be classified as **aliphatic, polar, uncharged amino acids**

Q. Enlist Positively Charged (Basic) R Groups

Lysine, which has a second primary amino group at the ϵ position on its aliphatic chain – Arginine, which has a positively charged guanidinium group – Histidine, which has an aromatic imidazole group Histidine is therefore **weakly basic** & the free amino acid is mainly **uncharged at physiologic pH**

Q. Define Negatively Charged (Acidic) R Groups

These amino acids are proton donors • At neutral pH, the side chains of these amino acids are fully ionized, containing a negatively charged carboxylate group • ($-\text{COO}^-$)

Humans have no dietary requirement for protein, per se, but, the protein in food does provide essential amino acids.

Nine of the twenty amino acids needed for the synthesis of body proteins are essential-that is, they cannot be synthesized in humans at an adequate rate

Q. Define essential Amino Acids write their names

Essential amino acids cannot be made by the body. As a result, they must come from food. The nine essential amino acids are: histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan, and valine.

Q. Enlist non-essential amino acids

Alanine, Arginine, Asparagine, Cysteine, Glutamate, Glutamine, Glycine, Proline and serine

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Q. How amino Acids are can be classified

Amino acids can be classified as glucogenic or ketogenic based on what intermediates are produced during their catabolism

Q. Define Glucogenic Amino Acid.

Glucogenic amino acids • Amino acids whose catabolism yields pyruvate are termed glucogenic or glycogenic. These intermediates are substrates for gluconeogenesis and, therefore, can give rise to the net formation of glucose or glycogen in the liver and glycogen in the muscle.

Q. Define Ketogenic amino acids

Amino acids whose catabolism yields either acetoacetate or its precursor, (acetyl CoA or acetoacetyl CoA) are termed ketogenic. Examples are.

Leucine and lysine are the only exclusively ketogenic amino acids found in proteins

Q. Define Classification of Proteins

Different classifications of proteins are based on their: 1. Shape and Size 2. Biological actions/ Functions 3. Solubility and physical properties 4. Quality

Q. Define catalytic Proteins. Catalytic Proteins: These specialized proteins are called enzymes which catalyze the biochemical reactions

Q. write the function of Protective Proteins

a) Immunoglobins (Igs) • These freely circulating proteins protect the body from invading microbes such as bacteria or viruses by inactivating or killing them through various mechanisms.

b) Fibrinogen • This forms fibrin clot and stops bleeding from wounds

Q. write the function of Regulatory Proteins

Hormones control genetic expression, cellular signalling and biochemical reactions catalyzed by enzymes. Enzymes are either activated or inactivated through modification of their structure.

Examples of protein hormones are – growth hormone – Insulin – Glucagon – Somatostatin

Q. Write the function of Structural Proteins:

These proteins form various body structures e.g. – Collagen – Elastin – Keratin

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Q. Write the function of Transport Protein.

Transport Proteins: • These proteins transport various substances from one part of the body to the other e.g. – Hemoglobin transport O₂ from lungs to tissues and CO₂ from tissues to lungs – Transferrin transports iron

Q. Write the function of contractile proteins.

Contractile Proteins: • These proteins are involved in muscle contraction and relaxation – Myosin of thick filaments – Actin of thin filaments of skeletal muscles

Q. Write function of Respiratory Proteins.

Respiratory Proteins. Heme Containing proteins are involved in the function of respiration e.g Hemoglobin Myoglobin cytochromes

Q. write the functions of Digestive Protein.

Digestive protein. these proteins are digestive enzymes which digest our food material such as carbohydrates, Proteins, lipids examples Amylase , Pepsin Lipases etc

Q. Write the function of Toxin proteins

Toxin proteins , these proteins are hydrolytic enzymes found in the venom of poisonous snakes, sting of bees and insects and hydrolyze the compounds forming the structure of the cell membrane.

Q. Write the function of Storage proteins.

Storage proteins these proteins store some specific elements or compounds with them. This is because of the presence of the many binding sites in them for the particular element Example Ferritin stores iron and ceruloplasmin stores copper

Q. Define Peptide bond

Two amino acid molecules can be covalently joined through an amide linkage, termed a peptide bond. This linkage is formed by removal of the elements of water from the α -carboxyl group of one amino acid and the α -amino group of another Almost all peptide bonds in proteins are trans

Q. Explain the Types/Structure of Proteins

The Primary Structure •

A description of all covalent bonds (mainly peptide bonds and disulfide bonds) linking amino acid residues in a polypeptide chain is its primary structure. The most important element of primary structure is the sequence of amino acid residues.

Secondary structure •

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Secondary structure refers to particularly stable arrangements of amino acid residues giving rise to recurring structural patterns

Tertiary structure •

Tertiary structure describes all aspects of the three-dimensional folding of a polypeptide

Quaternary structure •

When a protein has two or more polypeptide subunits, their arrangement in space is referred to as quaternary structure

Q. Define the sequence of Primary protein.

The primary structure of a protein refers to the **linear sequence** of amino acids in the polypeptide chain

Q. How end of the Polypeptide chain referred?

The two ends of the polypeptide chain are referred to as the carboxyl terminus (C-terminus) and the amino terminus (N-terminus) based on the nature of the free group on each extremity.

Q. Role of Primary structure of Protein?

The primary structure of a protein determines how it folds up into its unique three dimensional structure, and this in turn determines the function of the protein

Q. Sequence of Amino acids are Specified by?

Proteins have unique amino acid sequences, that are specified by **genes**

Proteins are encoded by one or more specific sequences **of three nucleotides** in DNA or RNA.

Q. why it is important to understand the structure of Primary protein?

Understanding of the primary structure of proteins is important because many genetic diseases result in proteins with abnormal amino acid sequences which cause loss or impairment of normal function.

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Q. What happens if there is single Amino Acid changed in sequence of protein?

The defect can range from a single change in the amino acid sequence (as in sickle cell anemia) In Sickle cell anemia a Glutamate residue is replaced by Valine at position 6 of beta chain of Hemoglobin, resulting in decreased functioning and increased fragility of Hb

Q. What if the large portion of polypeptide is removed or deleted? Or Q How Duchenne Muscular Dystrophy is caused?

to deletion of a larger portion of the polypeptide chain (as in most cases of Duchenne muscular dystrophy) Duchenne Muscular dystrophy results from a large segment of gene deletion in X chromosome, resulting in small truncated dystrophin protein

Primary structure is altered, the function of the protein may also be changed

Q. writes the types of Secondary structure of protein.

There are a few types of secondary structure that are particularly stable and occur widely in proteins • The most prominent are the α helix and β conformations.

Q. Define α helix structure of secondary protein.

The simplest arrangement the polypeptide chain can assume, given its rigid peptide bonds (but free rotation around its other, single bonds), is a helical structure, called the α helix. Within the α helix, every peptide bond (except those close to each end of the helix) participates in such hydrogen bonding

Q. Write properties of Amino acids found in α helix

Amino acids most commonly found in alpha helices are non-polar with aliphatic side chains • Alanine shows the greatest tendency to form α helices in most experimental model systems

Q. How the α helix can be disturbed or destabilize?

The bulk and shape of Ser, Thr, and Cys residues can destabilize an α helix if they are close together in the chain.

Amino acids with charged R groups such as Aspartate, Lysine residues can also disrupt the helix

In proline, the nitrogen atom is part of a rigid ring, and rotation about the N-C bond is not possible • Thus, a proline residue introduces a destabilizing kink in an α helix

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Q. give example of group of proteins contain α -helices

A very diverse group of proteins contains α -helices

Example

- keratins are a family of closely related, fibrous proteins whose structure is nearly entirely α helical. • They are a major component of tissues such as hair, nails, hoofs and skin. Hemiacetals and Hemiketals
- myoglobin, whose structure is also highly α -helical, is a globular, flexible molecule
- Nearly all trans membrane proteins contain alpha helices in their membrane spanning domains

Q. Define β Sheets

β Sheets are a second type of regular secondary structure that maximizes hydrogen bonding between the peptide backbones. The zigzag polypeptide chains can be arranged side by side to form a structure resembling a series of pleats. This arrangement called a β sheet.

Clusters of twisted strands of sheet form the core of many globular proteins

Q. Define Beta Bands.

Beta-bands are short regions usually involving four successive amino acid residues. • They often connect strands of antiparallel betasheets. β -Bands were given this name because they often connect successive strands of antiparallel β sheets

β -Bands reverse the direction of a polypeptide chain, helping it form a compact, globular shape.

- The structure is a 180 degree turn involving four amino acid residues

The carbonyl oxygen of the first residue forms a hydrogen bond with the amino-group hydrogen of the fourth residue.

Glycine and Proline residues often occur in β turns • Glycine because it is small and flexible

Q. Define Motif.

A motif also called a super secondary structure is simply a recognizable folding pattern involving two or more elements of secondary structure and the connection(s) between them Structural motifs are intermediate between secondary and tertiary structures

Q. Define Domain and its function

The tertiary structure of large complex proteins is often described in terms of physically independent regions called structural domains

BIO-202 Biochemistry MCQS and Notes (MID Term)

A domain is a section of protein structure sufficient to perform a particular chemical or physical task such as binding of a substrate or other ligand

Q. What Molecular forces responsible of Tertiary structure of proteins

Molecular forces that stabilise three dimensional tertiary structure include: • Electrostatic Interactions • Hydrophobic interactions • Disulphide bridges • Hydrogen bonding

Q. Define Electrostatic Interaction

It's a force between two opposite charges like attraction between negative ion and positive ion it plays an important role in protein folding

Q. Define Disulfide Bridges

Disulfide Bridges • The amino acid cysteine in a protein can form a covalent disulfide bond with another cysteine molecule through spontaneous (nonenzymatic) oxidation of their sulfhydryl groups

Q. Define hydrogen bonds in protein structure.

Hydrogen bonds • Hydrogen bonds in which a hydrogen atom is shared by a nitrogen (or oxygen) in the peptide backbone and an oxygen atom in an amino acid side chain.

Q. Define Quaternary Structure.

The arrangement of protein subunits in three-dimensional complexes constitutes quaternary structure

Q. Difference btw Multimer and Protomer

A multi subunit protein is also referred to as a multimer, with the prefixes “homo” or “hetero” used to describe identical or different subunits, respectively.

The repeating structural unit in such a multimeric protein is protomer.

Q. What are the Advantage of Sub units in Quaternary Structure?

A multisubunit structure has many advantages besides increased stability.

- It may enable the protein to exhibit cooperativity between subunits in binding ligands (illustrated later with hemoglobin)

Or it may form binding sites with a high affinity for large molecules (illustrated with antigen binding to the immunoglobulin molecule IgG).

An additional advantage of a multi-subunit structure is that the different subunits can have different activities and cooperate in a common function

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For example enzymes that have regulatory subunits or exist as multiprotein complex, such as Pyruvate Dehydrogenase

E1 , pyruvate dehydrogenase; E2, dihydrolipoyl transacetylase; and

E3, dihydrolipoyl dehydrogenase

Q. Define Protein Folding or protein structure.

Protein folding is the process by which a protein structure assumes its functional shape or conformation. It is the physical process by which a polypeptide folds into its characteristic and functional three dimensional structure from random coil

Q. What are the Requirements of Protein to enable its function?

It is the physical process by which a polypeptide folds into its characteristic and functional three dimensional structure from random coil. Moreover, The three dimensional structure must have an external surface appropriate for its environment (e.g., plasma proteins contain polar amino acids on the surface to remain soluble in an aqueous environment)

Q. Define Native protein

A protein is called a native protein if its amino acid composition and molecular conformation are unchanged from that found in natural states.

Q. Explain Protein folding

Protein folding in cells takes place in an orderly and guided fashion.

- Protein folding generally occurs via a stepwise process

In the first stage, as the newly synthesized polypeptide emerges from the ribosome, short segments fold into secondary structural units that provide local regions of organized structure. Then, each element of secondary or super-secondary structure facilitates proper folding by directing the folding process toward the native conformation and away from unproductive alternatives. This step-wise folding of the proteins is dictated by thermodynamics resulting in a formation of native form, which is also the most energetically favored form.

Q. What is the change in energy? When pressure is constant write its equations.

The free energy change for a process at constant pressure is: • $\Delta G = \Delta H - T \Delta S$ • $\Delta G = \text{Free Energy}$

- $\Delta H = \text{Enthalpy}$

- $\Delta S = \text{Entropy}$

BIO-202 Biochemistry MCQS and Notes (MID Term)

Q. Define Entropy

Entropy is a measure of the randomness or disorder in a system. Entropy of a system always tend to increase to a maximum value

Difference in energy (free energy) between folded (native) and unfolded (denatured) state is small, 5-15 kcal/mol

Q. on what factors the protein stability is depend on?

The stability of the protein depends on the solvent-solvent, protein-solvent, and protein-protein interactions.

Q. Name factors that influence free energy of protein molecules

- (1) the hydrophobicity, • (2) hydrogen bonds, • (3) electrostatic interactions, and • (4) the conformational entropy due to the restricted motion

Q. Define the second law of thermodynamics

According to Second Law of Thermodynamics: The entropy of a system will tend to increase to a maximum value

Q. Define Kinetic Barriers?

As the protein folds and refolds while it is searching for its native low energy state, it passes through many high-energy conformations that slow the process These high energy conformations are called kinetic barriers

Q. How cells over come to Kinetic Barriers? Or What is chaperones?

Cells employ auxiliary proteins to overcome these kinetic barriers. These auxiliary proteins are called chaperones. • Chaperone use energy provided by ATP hydrolysis to assist in the folding process

Q. Write the function of Chaperones

Chaperones participate in the folding of over half of mammalian proteins. • They prevent immature folding of the nascent polypeptide and help in the final native protein formation.

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Q. What is HSP70 and HSP60

Hsp70 family of chaperones binds short sequences of hydrophobic amino acids in newly synthesized polypeptides

The hsp60 family of chaperones, sometimes called chaperonins, differs in sequence and structure from hsp70 and its homology.

Hsp60 acts later in the folding process, often together with an hsp70 chaperone

Hsp60 chaperonins form a multi-subunit barrel-shaped structure • The unfolded protein fits into the barrel cavity that excludes water and serves as a template for the folding process

Q. Explain misfolding of proteins. Or How misfolding of proteins occur?

Misfolding of proteins may occur spontaneously

- or caused by a mutation in a particular gene, producing an altered protein
- In addition some apparently normal proteins can, after abnormal proteolytic cleavage, take on a unique conformational state • That leads to the formation of long fibrillar protein assemblies consisting of β pleated sheets

Many conditions, including

Q. Disease caused by misfolding of proteins

• Alzheimer's disease • Type 2 diabetes, • Huntington's disease and • Parkinson's disease, arise from a common misfolding mechanism.

In most cases, a soluble protein that is normally secreted from the cell is secreted in a misfolded state • and converted into an insoluble extracellular amyloid fiber. • The diseases are collectively referred to as amyloidoses.

Q. Define Amyloidosis and explain with examples

Amyloidosis is a generic term that refers to the extracellular tissue deposition of fibrils composed of low molecular weight of a variety of proteins misfolded

immunoglobulin light chain

Examples of organspecific amyloidoses include: • Alzheimer's disease due to deposition of amyloid- β protein cleaved from amyloid precursor protein (APP).

Alzheimer's is a type of dementia that causes problems with memory, thinking and behavior.

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Islet amyloid polypeptide (IAPP) is commonly seen in diabetes mellitus type 2 and is caused by deposition of amylin in pancreatic islets.

Q. Define protein denaturation.

A loss of three dimensional structures sufficient to cause loss of function is called denaturation.

Q. Define Denaturing Agent.

Denaturing agents can disrupt the tertiary and secondary structure of a protein and destroy the protein's biological function

Q. How change in pH cause the Denaturation of protein?

Extremes of pH alter the net charge on the protein, causing disruption of electrostatic interactions
• And the disruption of some hydrogen bonding

Q. Give examples of Denaturation of Protein from daily life.

When milk curdles, the acidity increases. • Thermal denaturation by cooking. • Mechanical denaturation when whisking an egg. • Perming hair breaks then reforms the disulphide bonds.

A classic example of denaturing in proteins comes from egg whites

Q. Define the process called Renaturation of Proteins.

Regain their native structure and their biological activity if returned to conditions in which the native conformation is stable this process is called **renaturation**.

A classic example is the denaturation and renaturation of **ribonuclease A**

Q side chain importance of alanine, valine and leucine

The Alanine side chain is very non-reactive, and is thus rarely directly involved in protein function. However it can play a role in substrate recognition or specificity, particularly in interactions with other non-reactive atoms such as carbon.

valine consist of a neutral side chain; hence it can show three possible structures in different mediums. In acidic medium, it exists as positive ion and in basic medium as a negative ion. One structure is overall neutral and contains two opposite charges called as **zwitterio**

Leucine is a branched-chain amino acid (BCAA) since it possesses an aliphatic side-chain that is non-linear.

BIO-202 Biochemistry MCQS and Notes (MID Term)

Q. Give an example of a protein that refolds.

Purified **ribonuclease A** denatures completely in a concentrated urea solution in the presence of a reducing agent. When the urea and the reducing agent are removed, the randomly coiled, denatured ribonuclease spontaneously refolds into its correct tertiary structure, restoring its catalytic activity.

Q. Define Ligand

A molecule bound reversibly by a protein is called a ligand. • A ligand may be any kind of molecule, including another protein

Examples

- in oxygen transport oxygen is the ligand that binds with hemoglobin,
- antigen is the ligand which binds with the antibody,
- hormone which binds with the receptor

ligand is able to bind to proteins by weak interactions such as ionic bonds, hydrogen bonds, Van der Waals interactions, and hydrophobic effects

A ligand binds at a site on the protein called the binding site, which is complementary to the ligand in – size, – shape, – charge, – hydrophobicity

The structural adaptation that occurs between protein and ligand is called induced fit.

Q. write the importance of reversible binding

Reversible binding of ligands is essential for the function of globular proteins – Specificity of ligands and binding sites – Ligand binding is often coupled to conformational changes, sometimes quite dramatic (Induced Fit)

In multisubunit proteins, conformational changes in one subunit can affect the others (Cooperativity) – Interactions can be regulated 2. Illustrated by: – Hemoglobin, antibodies, and muscle contraction.

Q. Difference between Myoglobin and Hemoglobin

Myoglobin is composed of a single polypeptide chain that has one O₂ binding site. • Hemoglobin is a tetramer in which each subunit has a strong sequence homology to myoglobin and contains an O₂ binding site. Hemoglobin is a tetramer composed of two different types of subunits (2 α and 2 β polypeptide chains, referred to as two $\alpha\beta$ protomers).

Q. Write the Role of Hemoglobin in our body.

The tertiary structure of oxygen binding globins consists of, • Eight α -helices. • The helices create a hydrophobic O₂ binding pocket containing; • tightly bound heme with an iron atom Ferrous (Fe²⁺) in its center. This iron bound heme is an example of prosthetic group.

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Q. Define Prosthetic group.

A prosthetic group is a compound permanently associated with a protein and contributes to the protein's function

The prosthetic group may be organic (vitamin, sugar, or lipid) or inorganic (like metal ion),

Q. Explain Heme and Its structure.

Heme consists of a complex organic ring structure, protoporphyrin IX, to which is bound a single iron atom in its ferrous (Fe^{2+}) state. The iron atom has six bonds, • four to nitrogen atoms that are part of the flat porphyrin ring system • and two perpendicular to the porphyrin. Negatively charged propionate groups on the porphyrin ring interact with; • Arginine and • Histidine side chains from the hemoglobin. The hydrophobic; • methyl and • vinyl groups • interact with hydrophobic amino acid side chains from hemoglobin.

Iron in the Fe^{2+} state binds oxygen reversibly • But in the Fe^{3+} (Ferric) state it does not bind oxygen

Q. What prevent the Fe^{2+} into Fe^{3+}

The coordinated nitrogen atoms (which have an electron donating character) help in preventing the conversion of the heme iron to the ferric (Fe^{3+}) state

Q. How many electrons can Iron donate?

Iron is a transition metal & because its orbitals are so close energy wise they tend to give up either 2 or 3 electrons at time

About 78% of the amino acid residues in the myoglobin are found in α helices with bends in between.

Histidine is a generally considered to be a polar amino acid

Q. How Heme is linked with Myoglobin and hemoglobin?

In myoglobin and hemoglobin, heme is covalently linked with histidine F8(eighth residue of F helix). because of covalent bond this histidine is closer to heme

Q. Explain the structure and Function of Hemoglobin

Hemoglobin is found exclusively in red blood cells, where its main function is to transport oxygen from the lungs to the capillaries of the tissues.

Hemoglobin A, the major hemoglobin in adults, is composed of four polypeptide chains – Two alpha (α) chains – Two beta (β) chains

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Which can be seen as a protein of two identical dimers $(\alpha\beta)_1$ and $(\alpha\beta)_2$ • The two polypeptide chains within each dimer are held tightly together, primarily by hydrophobic interactions

Inter-chain hydrophobic interactions form strong associations between α -subunits and β -subunits in the dimers

Ionic and hydrogen bonds also occur between the members of the dimer • In contrast, the two dimers are able to move with respect to each other, being held together primarily by polar bonds However, the tetrameric hemoglobin molecule is structurally and functionally more complex than myoglobin

hemoglobin can transport CO₂ from the tissues to the lungs, and carry four molecules of O₂ from the lungs to the cells of the body

In infants, made up of 2 alpha chains and 2 gamma chains. HbA₂: ($\alpha_2\delta_2$)

Q. Define Cooperative binding of oxygen

Cooperative binding of oxygen means that the binding of oxygen to one heme group enables an oxygen binding to the second heme group of the same hemoglobin molecule

T= Taut: low oxygen affinity; R=Relaxed: high oxygen affinity

Reversible binding

In the T subunits, the binding sites are hindered • And in the R state the binding sites are open

Q. Comparison of oxygen binding to myoglobin and hemoglobin

Myoglobin can bind only one molecule of oxygen. • Because it contains only one heme group	hemoglobin can bind four oxygen molecules-one at each of its four heme groups
myoglobin has a higher oxygen affinity	Hemoglobin has low oxygen Affinity
P50 is approximately 1 mm Hg for myoglobin	26.6mm Hg for hemoglobin

1 torr= 1mmHg

BIO-202 Biochemistry MCQS and Notes (MID Term)

Q. What is called P50

The partial pressure of oxygen needed to achieve half-saturation of the binding sites is called (P50). Myoglobin can load oxygen readily at the pO₂ of the lung capillary bed (100 mm Hg)

Sigmoidal or sigmoid, literally means S-shaped

The net effect is that the affinity of hemoglobin for the last oxygen bound is approximately 300 times greater than its affinity for the first oxygen bound

Q. what are the Allosteric effects? OR What do you know about Allosteric Amino Acids

Apart from Oxygen, ability of hemoglobin to reversibly bind oxygen is affected by – the pH of the environment – the pCO₂ ; and – the availability of 2,3bisphosphoglycerate

In Greek, Allo means other and Steric means Site.

The binding of oxygen to myoglobin is not influenced by the allosteric effectors of hemoglobin

Q. What is the function of Hemoglobin except O₂ transferring?

In addition to transporting O₂ from the lungs to the peripheral tissues, • hemoglobin transports CO₂, the by product of respiration, • And protons from peripheral tissues to the lungs

Hemoglobin carries CO₂ as carbamates formed with the amino terminal nitrogens of the polypeptide chains

Carbamates change the charge on amino terminals from positive to negative, favoring ionic interaction formation between the α and β chains • Hence, favoring the

Stabilization of taut form of deoxyhemoglobin

Hemoglobin carbamates account for about 15% of the CO₂ in venous blood

The remainder of the CO₂ is transported as dissolved • HCO₃⁻ (80 to 85%) and • dissolved CO₂ (<5%)

Q. what are the modes of CO₂ Transport?

Modes of CO₂ transport

1: Dissolved CO₂; 2: Dissolved bicarbonate 3: carbamate form

Q. how bicarbonate is formed? Write name of its enzyme

Bicarbonate is formed in erythrocytes by the hydration of CO₂ to carbonic acid (H₂CO₃) • This process is catalyzed by carbonic anhydrase

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Q. At the pH of venous blood, H_2CO_3 dissociates into;

- Bicarbonate and • a proton

Deoxyhemoglobin binds **one proton for every two O_2 molecules released**, contributing significantly to the **buffering capacity** of blood

Q. What is called Bohr Effect

Oxygen and H^+ are not bound at the same sites in hemoglobin. • However binding of proton, helps stabilize deoxyhemoglobin in the T state. This reciprocal coupling of proton and O_2 binding is termed the Bohr effect

Hemoglobin transports about **40% of the total H^+** • And **15% to 20% of the CO_2** formed in the tissues to the lungs and the kidneys.

Q Define the Term Affinity and how does it change.

The term "affinity" is used to describe oxygen's attraction to hemoglobin binding sites. Affinity changes with: – variation in pH, – temperature, – CO_2 and, – 2,3-BPG

Traditionally the curve starts with: – **pH at 7.4**, – **temperature at 37 Centigrade**, and – **PaO_2 at 40**. • Changes from these values are **called "shifts"**

Q. what results deprotonation of H^+C_3

• The increase in pH, • exhalation of CO_2 • and oxygenation of Hb; • all result in; deprotonation of His H^+C_3 of Hb.

The **differential pH gradient** (lungs having a **higher pH**, tissues a **lower pH**) favors the **unloading of oxygen in the peripheral** tissues, • And the loading of oxygen in the lung

Q. Difference between Positive Cooperativity and Negative allostery.

Binding of oxygen to facilitate other molecule of oxygen is called **positive cooperativity**.

Whereas, binding of carbon dioxide and proton to release oxygen is **called negative allostery**, in which; increased **CO_2 and H^+ ion** favor **oxygen unloading**

Q. Define the function of BPG

bisphosphoglycerate • The interaction of 2,3 bisphosphoglycerate (BPG) with hemoglobin further refines the function of hemoglobin. • 2, 3 BPG is an alternate product of glycolysis and its concentration increases in RBCs in states of low oxygen delivery to the tissues. • It is a negatively charged molecule which increases the stability of taut form of hemoglobin

BIO-202 Biochemistry MCQS and Notes (MID Term)

Q. at sea level the binding of oxygen percentage will be?

At sea level, the binding of oxygen to hemoglobin is regulated such that the amount of oxygen delivered to the tissues is nearly 40% of the maximum that could be carried by the blood.

Q. Which place the BPG binds to Hb

The site of BPG binding to Hb is the cavity between the beta subunits. This cavity is lined with positively charged amino acid residues that interact with the negatively charged groups of BPG.

Q. Explain the disease Sickle cell Anemia? How does it occur?

Sickle Cell Anemia is a molecular disease of hemoglobin. • It demonstrates the importance of amino acid sequence in hierarchical structure of globular proteins, and thus their biological functions. Sickle cell anemia is a genetic disorder caused by a single nucleotide alteration (a point mutation) in the β -globin gene. • This results in the production of altered hemoglobin. The point mutation in the DNA sequence results in the replacement of, • Glutamate residue with Valine residue • At position 6 of the β chain of hemoglobin. Sickle-cell anemia occurs in individuals who inherit the allele for sickle-cell hemoglobin from both parents. • The resulting hemoglobin $\alpha_2\beta_2$, is referred to as HbS. The RBCs of these individuals are fewer and also abnormal. • In addition to an unusually large number of immature cells, the blood contains many long, thin, sickle shaped RBCs.

Q. What is called sickle cell trait?

Individuals who receive the HbS allele from only one parent (i.e. heterozygous) experience a milder condition called sickle-cell trait.

Bio202

1) write characteristics of enantiomers?

Stereoisomers that are mirror images of each other are called **enantiomers**. **Enantiomers** have nearly identical chemical properties but differ in a characteristic physical property: their interaction with plane-polarized light. Since they are nonsuperposable mirror images of each other, the two forms represent a class of stereoisomers called **enantiomers**.

2) name two diseases caused by misfolding of proteins?

Misfolding of proteins may occur spontaneously or caused by a mutation in a particular gene, producing an altered protein. In addition, some apparently normal proteins can, after abnormal proteolytic cleavage, take on a unique conformational state that leads to the formation of long fibrillar protein assemblies consisting of β -pleated sheets.

3) what are digestive proteins. Explain with examples?

Digestive Proteins: These proteins are digestive enzymes which digest our food materials such as carbohydrates, proteins, lipids and include Amylase, Pepsin, Lipases etc. (**Pepsin** is one of three principal protein-degrading, or proteolytic, enzymes in the digestive system, the other two being chymotrypsin and trypsin).

4) what are ketogenic amino acids?

Ketogenic amino acids Amino acids whose catabolism yields either **acetoacetate or its precursor, (acetyl CoA or acetoacetyl CoA)** are termed **ketogenic**. Acetoacetate is one of the ketone bodies which also include 3-hydroxybutyrate and acetone. **Leucine and lysine** are the only exclusively ketogenic amino acids found in proteins. Their carbon skeletons are not substrates for gluconeogenesis and, therefore, cannot give rise to the net formation of glucose or glycogen in the liver, or glycogen in the muscles.

5) give characteristics of furfural compounds?

Furfural is an important renewable, non-petroleum based, chemical feedstock.) The furfural products thus formed can condense with certain organic phenols (α -naphthol) to form compounds having characteristic colours. This forms the basis of certain tests used for detection of sugars.

6) Name factors that influence free energy of protein molecules?

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The free energy of a protein molecule is influenced by (1) the hydrophobicity, hydrogen bonds, electrostatic interactions, and (4) the conformational entropy due to the restricted motion

7) what do you know about allosteric amino acid?

In [biochemistry](#), **allosteric regulation** (or **allosteric control**) is the regulation of an [enzyme](#) by binding an [effector molecule](#) at a site other than the enzyme's [active site](#). The site to which the effector binds is termed the *allosteric site* or *regulatory site*. Allosteric sites allow effectors to bind to the protein, often resulting in a [conformational change](#) involving [protein dynamics](#). Effectors that enhance the protein's activity are referred to as *allosteric activators*, whereas those that decrease the protein's activity are called *allosteric inhibitors*.

8) define allotropy?

the existence of two or more different physical forms of a chemical element

9) what is HSP60?

Heat shock protein 60 (**HSP60**) is a mitochondrial chaperonin that is typically held responsible for the transportation and refolding of proteins from the cytoplasm into the mitochondrial matrix.

10) What are characteristics of furfural compounds?

Infobox references. **Furfural** is an organic compound produced from a variety of agricultural byproducts, including corncobs, oat, wheat bran, and sawdust. The name **furfural** comes from the Latin word *furfur*, meaning bran, referring to its usual source. **Furfural** is an almond-scented, oily, colorless liquid that turns yellow to dark brown when exposed to air. It is **used as** a solvent for refining lubricating oils, as a fungicide and weed killer and in the production of tetrahydrofuran, an important industrial solvent.

11) How Duchenne Muscular Dystrophy is caused?

DMD is a genetic disease. Those who inherit it have a defective gene related to a **muscular** protein called dystrophin. This protein keeps **muscle** cells intact. Its absence **causes** rapid **muscular** deterioration as a child with **DMD** grows.

12) Difference between Hemiacetals and Hemiketals?

The formation of these ring structures is the result of a general reaction between alcohols and aldehydes or ketones to form derivatives called **hemiacetals** or **hemiketals**. Which contain an additional **asymmetric carbon atom** and thus can exist in two stereoisomeric forms

13) How misfolding of proteins occur?

Protein misfolding: aggregation and amyloid formation. **Protein misfolding** is a common and intrinsic propensity of **proteins** that **occurs** continuously. **Misfolding** is influenced by the amino acid composition, and certain mutations are known to accelerate the process.

14) What are monosaccharides? write two examples.

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Monosaccharides (simple sugars) are those which cannot be hydrolyzed further into simpler forms. The backbones of common monosaccharides are *unbranched* carbon chains in which all the carbon atoms are linked by single bonds.

15) What are Chaperones and write its main function?

molecular chaperones are **proteins** that assist the covalent folding or unfolding and the assembly or disassembly of other macromolecular structures. The reason for this behaviour is that protein folding is severely affected by heat and, therefore, some **chaperones** act to prevent or correct damage caused by misfolding. Other **chaperones** are involved in folding newly made proteins as they are extruded from the ribosome.

16) What are anomers and anomeric carbon?

The **anomeric carbon** is a stereocenter. An important feature is the direction of the OH group attached to the **anomeric carbon**. When the hydrogen is still attached, and the oxygen is not bonded C-O-C, this is called a hemiacetal functional group.

17) What is starch and its structure?

Starch molecules arrange themselves in the plant in semi-crystalline granules. Each plant species has a unique starch granular size: rice starch is relatively small (about 2 μm) while potato starches have larger granules (up to **100 μm**). Starch becomes soluble in water when heated.

18) What are beta bonds?

1,4 glycosidic bond. ... There are two types of glycosidic **bonds** - 1,4 α and 1,4 **beta** glycosidic **bonds**. 1,4 α glycosidic **bonds** are formed when the OH on the carbon-1 is below the glucose ring; while 1,4 **beta** glycosidic **bonds** are formed when the OH is above the plane.

19) What side chain importance of alanine, valine, leucine?

Role in structure: **Alanine** is arguably the most boring **amino acid**. It is not particularly hydrophobic and is non-polar. ... **Role in function:** The **Alanine side chain** is very non-reactive, and is thus rarely directly involved in protein **function**. Valine is a **branched-chain amino acid (BCAA)** that works with the other two **BCAAs**, isoleucine and leucine, to promote normal growth, repair tissues, regulate blood sugar, and provide the body with energy. Valine helps stimulate the **central nervous system**, and is needed for proper mental functioning.

Previous studies with Substance P (SP) antagonists (GR 71251, [DPro9, Pro10, Trp11]SP and [DPro9, MeLeu10, Trp11]SP) have suggested the existence in the guinea-pig ileum (GPI) of two distinct tachykinin receptors associated with the contractile responses of [Pro9]SP and septide.

20) What are domains in protein?

A **protein domain** is a conserved part of a given **protein** sequence and (tertiary) structure that can evolve, function, and exist independently of the rest of

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the **protein** chain. Each **domain** forms a compact three-dimensional structure and often can be independently stable and folded.

21) What are protein structures?

The primary **structure** of a **protein** refers to the sequence of amino acids in the polypeptide chain. The primary **structure** is held together by peptide bonds that are made during the process of **protein biosynthesis**.

22) What are basics of classification of proteins ?

Protein Classification. **Proteins** are the macromolecules responsible for the biological processes in the cell. They consist at their most basic level of a chain of amino acids, determined by the sequence of nucleotides in a gene. ... A polypeptide is a chain of amino acids.

23) Write a note on transcription?

Transcription is the process of producing an **RNA transcript** that is complementary to a **DNA** template. It can be thought of as *DNA-dependent RNA synthesis*.

24) what is disaccharide give two examples

A disaccharide (also called a double **sugar** or biose) is the **sugar** formed when two monosaccharides (simple sugars) are joined by glycosidic linkage. Like monosaccharides, disaccharides are soluble in **water**. Three common examples are sucrose, **lactose**, and **maltose**.

25) What is quaternary structure of protein?

Many **proteins** are actually assemblies of multiple polypeptide chains. The **quaternary structure** refers to the number and arrangement of the **protein** subunits with respect to one another. Examples of **proteins** with **quaternary structure** include hemoglobin, DNA polymerase, and ion channels.

26) how alpha helix stabilize?

The alpha helix is a rod like structure. A tightly coiled backbone forms the inner part of the rod and the side chain extends outwards in a helical manner. The alpha helix is stabilized by hydrogen bonds between the NH and CO groups of the main chain i.e the CO group of each amino acid forms a H-bond with the NH group of the amino acid i.e situated four residues ahead in the sequence.

27) What is biological importance of carbohydrates?

Carbohydrates provide energy to the body, particularly through glucose, a simple sugar that is found in many basic foods. ... As an immediate source of energy, glucose is broken down during the process of cellular respiration, which produces ATP, the energy currency of the cell.

28) what is role of iron in binding with heme group in tissues and lung?

29) Biomedical importance of protein Which force helps to stability of 3-d structure of protein

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Protein structure is the three-dimensional arrangement of atoms in an amino acid-chain molecule. Proteins are polymers – specifically polypeptides – formed from sequences of amino acids, the monomers of the polymer. A single amino acid monomer may also be called a residue indicating a repeating unit of a polymer. Proteins form by amino acids undergoing condensation reactions, in which the amino acids lose one water molecule per reaction in order to attach to one another with a peptide bond. By convention, a chain under 30 amino acids is often identified as a peptide, rather than a protein. ,

30) Example of protein denaturation in our daily life?

Examples of Denatured Proteins. Though **protein denaturation** is detrimental for cell survival, it is often encountered in **daily life**. ... Similarly, altering the pH of milk by adding acids such as citric acid from lemon juice denatures milk **proteins** and curdles the milk.

31) what are ketogenic amino acid?

Ketogenic amino acid. A **ketogenic amino acid** is an **amino acid** that can be degraded directly into acetyl-CoA, which is the precursor of ketone bodies. This is in contrast to the glucogenic **amino acids**, which are converted into glucose.

32) describe alpha helix or disulphide bridge?

It is a sequence of amino acids. 2. It is a linear polymer: linking the alpha-carboxyl group of one amino acid to the alpha amino group of another amino acid => PEPTIDE BOND (covalent bond). 3. In some proteins, the linear polypeptide chain is cross-linked: Disulfide bonds. The primary structure is a polypeptide, in which:

- + each amino acid in the peptide is a residue.
- + there is a regularly repeating segment called the main chain or backbone, and a variable part, comprised of the side chain.

33) What are allosteric form of hemoglobin ?

Allotery in **haemoglobin**. **Haemoglobin** is an **allosteric** protein. ... In fact the binding of oxygen to one **haemoglobin** subunit induces conformational changes (discussed before) that are relayed to the other subunits, making them more able to bind oxygen by raising their affinity for this molecule.

34) What is titration curve of glycine?

The end point of a **titration curve** represents the observed end of the **titration**. ... In this experiment we are finding out the **titration curve** of the amino acid **Glycine**. **Glycine** is a diprotic amino acid which means that it has two dissociable Protons, one on the α amino group and the other on the carboxyl group.

35) What are Motif of protein?

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In a chain-like biological molecule, such as a protein or nucleic acid, a structural motif is a **supersecondary** structure, which also appears in a variety of other molecules. Motifs do not allow us to predict the biological functions: they are found in proteins and enzymes with dissimilar **functions**.

36) What is Equilibrium constant of reversible reaction?

There is a simple relationship between the **equilibrium constant** for a **reversible reaction** and the rate **constants** for the forward and reverse **reactions** if the mechanism for the **reaction** involves only a single step. ... This equation can be rearranged to give the **equilibrium constant** expression for the **reaction**.

37) Difference btw secondary and tertiary structure of proteins

Explain the **differences between** primary, **secondary and tertiary protein structure**. Primary **structure** is the order in which what amino acid is bound the other **with a peptide bond**. This is coded for by the order of codons **in a gene**. ... This **structure** is determined by hydrogen bonds **between the different** amino acids

38) Define electrostatic forces in protein interactions?

Protein electrostatic properties stem from the proportion and distribution of polar and charged residues. Polar and charged residues regulate the electrostatic properties by forming **short-range interactions**, like **salt-bridges** and **hydrogen-bonds**, and by defining the over-all electrostatic environment in the protein. Electrostatics play a **major role** in defining the mechanisms of protein-protein complex formation, **molecular recognitions**, **thermal stabilities**, **conformational adaptabilities** and **protein movement**

39) Write the side properties of Glutamate and Alanine ?

40) Domain in Protein and their function?

A **protein domain** is a **conserved part** of given **protein** sequence and (tertiary) structure that can **evolve**, **function**, and exist independently of the rest of the **protein** chain. ... Many **proteins** consist of several structural **domains**.

One **domain** may appear in a variety of **different proteins**.

41) Explain the single letter naming symbol in Amino acids?

SHORTHAND SYMBOLS FOR AMINO ACIDS

[1-letter symbols are commonly used in sequence data]

One letter	Three letter	Amino Acid
A	Ala	Alanine
R	Arg	Arginine

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N	Asn	Asparagine
D	Asp	Aspartic acid
B	Asx	Asn or Asp

42) Hsp60 importance of protein structure forces responsible for 3 d structure of protein why a helix disturb due 2 peresenceovseline what are ketogenic amino acid

43) Write the name of Essential amino acids?

here are 10 essential amino acids: arginine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine.

44) What are propertise of proteins?

Proteins are compounds found in all living cells, in animals and plants. They play a variety of important roles and are essential to maintain the structure and function of all lifeforms. The word 'protein' is derived from the Greek word protos, meaning "primary" or "first". Proteins are vital for the growth and repair, and their functions are endless. Each and every property that characterizes a living organism is affected by proteins, whether it is a bacteria or a human body

Proteins $\xrightarrow{\text{hydrolysis}}$ Peptides $\xrightarrow{\text{hydrolysis}}$ Amino acids.

45) discuss the steps of protien folding?

There are four **stages of protein folding**, primary, secondary, tertiary and quarternary. The secondary structure is the **protein** beginning to **fold** up. It can have two types of structure: the alpha helix, a coil shape held by hydrogen bonds in the same direction as the coil.

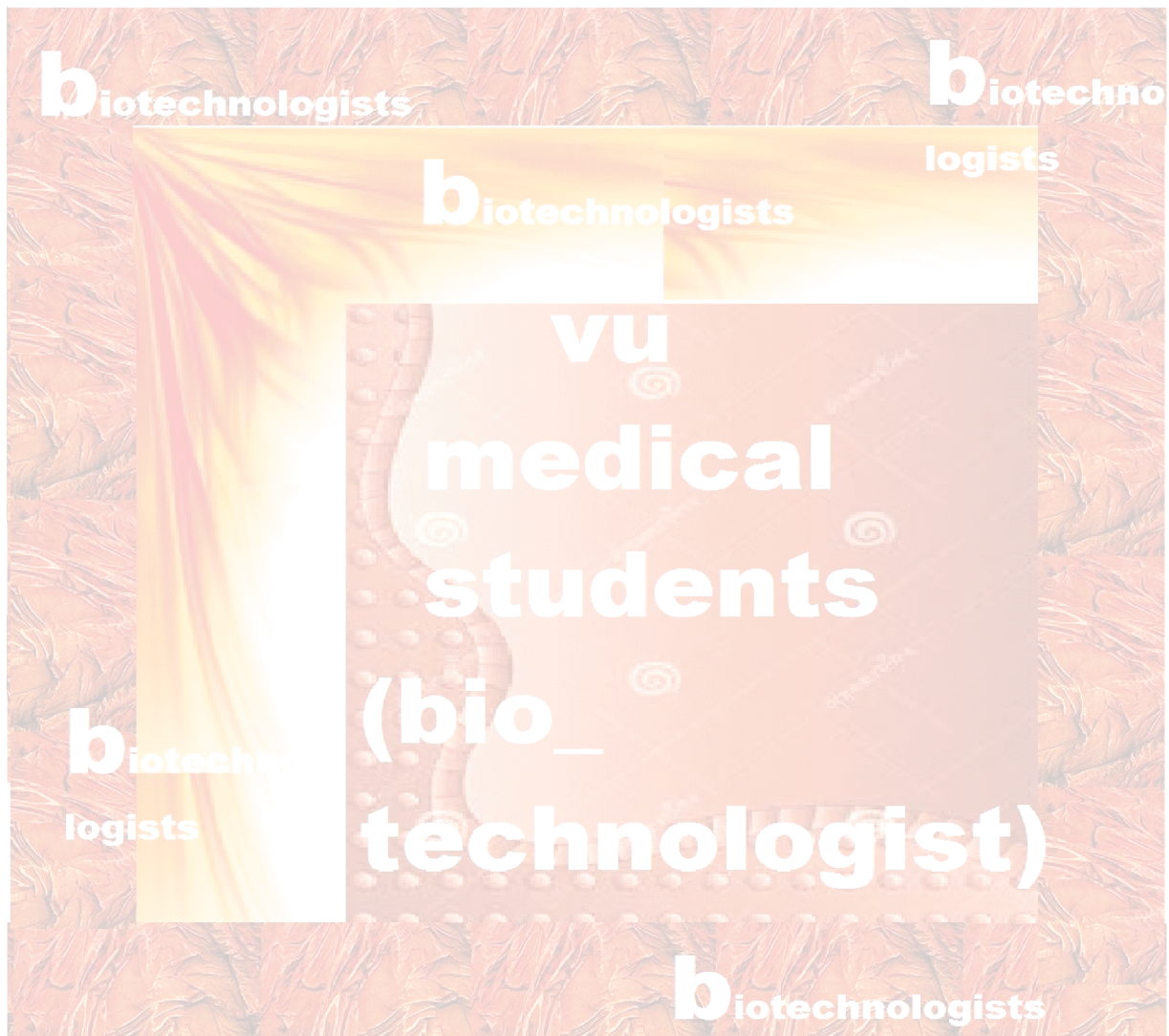
46) what are osazone?

Osazones are a class of carbohydrate derivatives found in organic chemistry formed when sugars are reacted with excess of phenylhydrazine. The famous German chemist Emil Fischer developed and used the reaction to identify sugars whose stereochemistry differed by only one chiral carbon

47) What are monosaccharides equation reaction?

48) What are allosteric form of hemoglobin ?

Allostery in **haemoglobin**. **Haemoglobin** is an **allosteric** protein. ... In fact the binding of oxygen to one **haemoglobin** subunit induces conformational changes (discussed before) that are relayed to the other subunits, making them more able to bind oxygen by raising their affinity for this molecule.



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BIO 202 Final terms Subjective

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1) Name two second messenger of nucleotides? (2marks)

1. Cyclic AMP (cAMP)
2. Cyclic GMP (cGMP)

2) What are simple lipids? Give two types of simple lipids. (2 marks)

Esters of fatty acids with various alcohols. There are two types of simple lipids Fats and waxes.

3) Define buffer? Write its composition. (2 marks)

A buffer is a solution that resists change in pH following the addition of an acid or base.

Histidine has got 3 dissociable hydrogens – one from carboxyl, $pK_1=1.8$, – one from imidazole group, $pK_2=6.0$ – one from amino group, $pK_3=9.2$.

4) Define saponification Number? (3marks)

The number of mgs of NaOH/KOH required to saponify the free and combined FA in one gram of a given fat is called its saponification number.

5) Define enzyme kinetics? (3 marks)

The oldest approach to understanding enzyme mechanisms that remains the most important, is to determine the rate of the reaction and how it changes in response to changes in experimental parameters, a discipline known as enzyme kinetics.

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6) Medical applications of Nucleotides and nucleic acid. (3 marks)

Medical applications specifically medical applications include the:

Use of synthetic purine and pyrimidine analogs that contain halogens, thiols, or additional nitrogen atoms:

There use includes chemotherapy for cancer.

As suppressors of the immune response during organ transplantation.

As anti-viral drugs such as in the treatment of AIDS.

7) Properties of waxes (5 marks)

Properties of waxes:

Waxes are insoluble in water, but soluble in fat solvents and are negative for acrolein test and very resistant to rancidity.

8) Nucleotides as 'energy currency' of the cell? (5 marks)

Nucleotides play an important role as "energy currency" in the cell. Nucleoside tri- and diphosphates such as ATP and ADP are the principal donors and acceptors of phosphoryl group in metabolism. By doing this, they play a key role in the energy transduction. This energy is used in almost every energy requiring process in the body, such as; Muscle contraction, Transmission of nerve impulse, Transports of nutrients across cell membrane. Motility of spermatozoa. And many more energy dependent processes.

9) Classification of enzymes? (5 marks)

Oxidoreductases: Transfer of electrons (hydride ions or H atoms).

Transferases: Group transfer reactions.

Hydrolases: Hydrolysis reactions (transfer of functional groups to water).

Lyases: Addition of groups to double bonds, or formation of double bonds by removal of groups.

Isomerases: Transfer of groups within molecules to yield isomeric forms.

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Ligases: Formation of COC, COS, COO, and CON bonds by condensation reactions coupled to ATP cleavage.

10) Define enzymes? Write classification of enzymes? (10 marks)

A substance produced by a living organism which acts as a catalyst to bring about a specific biochemical reaction.

Oxidoreductases: Transfer of electrons (hydride ions or H atoms).

Transferases: Group transfer reactions.

Hydrolases: Hydrolysis reactions (transfer of functional groups to water).

Lyases: Addition of groups to double bonds, or formation of double bonds by removal of groups.

Isomerases: Transfer of groups within molecules to yield isomeric forms.

Ligases: Formation of COC, COS, COO, and CON bonds by condensation reactions coupled to ATP cleavage.

11) Difference between nucleoside and nucleotide. 2

The addition of a pentose sugar to a base produces a nucleoside.

Nucleotides are monophosphate, diphosphate, or triphosphate esters of nucleosides.

12) What are lipoproteins? 2

Combinations of lipid and protein (lipoproteins) serve as the means of transporting lipids in the blood.

13) Enzyme kinetics 2

The oldest approach to understanding enzyme mechanisms that remains the most important, is to determine the rate of the reaction and how it changes in response to changes in experimental parameters, a discipline known as enzyme kinetics.

14) Components of nucleotide. 3

A phosphate group

Nitrogenous base

Pentose sugar

15) What are sterols? 3

Steroids with eight to ten carbon atoms in the side chain at C17 and a hydroxyl group at C-3 are classified as sterols. Phospholipids and sterols are major structural elements of biological membranes.

17) Five functions of cyclic AMP. 5

Functions of c-AMP:

Acts as second messenger in the cell.

It has role in glycogen metabolism.

↑cAMP, ↑glycogenolysis.

↑cAMP ↑TAG metabolism

↑cAMP ↑ lipolysis

It decreases cholesterol synthesis. It causes activation of protein kinases which in turn; Activate or deactivate other enzymes.

It regulates the cell membrane permeability, by increasing permeability of cell membrane to H₂O, Na⁺, K⁺ & Ca²⁺.

Moreover, it regulates insulin secretion, catecholamine biosynthesis & Melatonin synthesis.

18) Characteristics of VLDL. 5

VLDLs are assembled in the liver.

It is composed predominantly of TAGs synthesized in liver.

It contains some cholesterol and cholesteryl esters.

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19) Bees wax and spermaceti. 3 marks

Bees-wax is secreted by the honeybees that use it to form the combs. It is a mixture of waxes. Its chief constituent is myricyl palmitate (30C) (16C).

Spermaceti is a wax that is most often found in the head cavities of the sperm whale. Fatty esters are formed essentially of cetyl palmitate and cetyl myristate.

20) Halogenation with respect to fat. 5 marks

Halogenation is similar to hydrogenation. Halogens such as chlorine, bromine and iodine can also be added to double bonds in unsaturated fatty acids. Degree of halogenation is a good index of degree of unsaturation of Fatty Acids. The number of grams of iodine which will be absorbed by 100 grams of a fat is termed its iodine number.

21) Define function of lipoxin. 2 marks

Lipoxins induce chemotaxis and stimulate superoxide radicals for killing of microorganisms.

22) Define glycerol. 3 marks

Glycerol:

It is a simple poly hydroxy alcohol (also called polyol or sugar alcohol and part of a class of lipids: glycolipids). It contains 3 carbons and 3 hydroxyl (OH) groups. Glycerol is synthesized from Dihydroxyacetone Phosphate (an intermediate of the glycolytic pathway). Glycerol is a precursor for synthesis of triacylglycerols and of phospholipids in the liver and adipose tissue.

23) Properties of glycerol trinitrate?

Glycerol combines with three molecules of nitric acid to form Glycerol trinitrate:

That is used as explosive

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Vasodilator.

24) Nucleotide serves as single transduction pathway. 3 marks

Nucleotides, such as cyclic AMP (cAMP) and cyclic GMP (cGMP), serve as second messengers in signal transduction pathways.

Signal Transduction: GTP and GDP play key roles in activating or inhibiting proteins in various cellular signaling cascades.

25) Example of condensation reaction. 2 marks

N-glycosidic bond

O-glycosidic bond

26) Note on nitrogenous bases. 5 marks

The nitrogen containing bases belong to two families of compounds:

- Purines
- Pyrimidines

By the attachment of different groups to the rings, different types of pyrimidine and purine are generated. The utility of these nitrogen-containing ring structures lies in the ability of the nitrogen to form hydrogen bonds and to accept and donate electrons while still part of the ring.

27) Iodine number. 2 marks

The number of grams of iodine which will be absorbed by 100 grams of a fat is termed its iodine number.

28) Explain numbering of carbon atoms in nitrogenous bases. 2 marks

Numbering of Carbon and Nitrogen Atoms

The carbon and nitrogen atoms in the rings of the base and the sugar are numbered separately.

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The atoms in the rings of the bases are numbered:

1 to 6 in pyrimidines & 1 to 9 in purines.

29) Name of Three pyrimidine bases. 3 marks.

1. Cytosine
2. Thymine
3. Uracil

30) What is Rancidity? Name and factors. 5 marks

It is a physicochemical change in the natural properties of the fat leading to the development of unpleasant odor or taste or abnormal color

On aging after exposure to atmospheric oxygen, light, moisture, bacterial or fungal contamination and or heat.

31) What are waxes? Write detail Classification with examples. 10 marks

A second group of neutral lipids that are of physiological importance. Although they are a minor component of biological systems.

Properties of waxes:

Waxes are insoluble in water, but soluble in fat solvents and are negative for acrolein test and very resistant to rancidity.

Waxes are of two types: True waxes and Other Waxes or Non true waxes or Wax-like compounds.

True Waxes: Waxes are solid simple lipids containing a monohydric alcohol (with a higher molecular weight than glycerol) esterified to long chain fatty acids.

1. True Waxes: Bees-wax is secreted by the honeybees that use it to form the combs. It is a mixture of waxes. Its chief constituent is myricyl palmitate (30C) (16C).
2. Spermaceti: is a wax that is most often found in the head cavities of the sperm whale. Fatty esters are formed essentially of cetyl palmitate and cetyl myristate.
2. Other Waxes or Non true waxes include esters of: Cholesterol, Vitamin A, and Vitamin D.

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32) Primary structure of DNA? 5marks

DNA Primary Structure: The primary structure of a nucleic acid is its covalent structure and nucleotide sequence. The back bone of the primary structure is the linear strand made by sugar phosphate residues, linked together, while the bases project laterally. This way a long, unbranched chain is formed.

The resulting long, unbranched chain has polarity. Both 5'-end and 3'-end are free at 5'-end there is a free phosphate at 3'-end there is a free OH that are not attached to other nucleotides. Purines and pyrimidines project laterally from the backbone and form a variable part. The variable part is concerned with the expression of genetic information.

33) Where is Keratin present? 2 marks

Hoof, hair and nails.

34) Palmitic acid main carbons. 2 marks

16

35) Types of Polysaccharide. 2 marks

Homopolysaccharides(homoglycans): Polymers of same monosaccharide units e.g. starch, glycogen, inulin, cellulose, dextrans, dextrans.

Heteropolysaccharides(heteroglycans): Polymer of different monosaccharide units or their derivatives e.g. Mucopolysaccharides (glycosaminoglycans).

BIO-202 BIOCHEMISTRY (FINAL TERM)

- Eicosanoids are derived from _____ fatty acids
a) Omega 3 b) Omega 6 c) Omega 8 **D) Omega 3 and 6**
- Eicosanoids that cause the inflammation or called pro inflammatory.
a) Omega 3 **b) Omega 6** c) omega 9 d) All of these
- What is the correct ratio of omega 3 and 6 in the diet.
a) 1:3 **b) 1:4** c) 1:5 d) 1:8
- Omega-3 fatty acids such as alpha-linolenic acid and its derivatives has effects on human health is
a) Inflammatory **b) anti inflammatory** c) no effects d) all of these
- Docahexonic Acid (DHA) is selectively incorporated into ____
a) Cell membrane b) Retinal membrane c) postsynaptic neuronal membrane **d) B and C**
- Omega-3 fatty acids are beneficial particularly for ____ diseases
a) Cardiovascular b) Alzheimer's c) Cancer **d) All of these**
- Monoenoic Acids (Oleic Acid) are possibly the most common fatty acids present in
a) Olive Oil b) Corn c) soy bean d) peanut

topic 114

- Polyunsaturated fatty acids contain _____ Double bonds
a) Single b) Double **c) More than one** d) tripple
- Example of Polyunsaturated fatty acids are ____
a) Linoleic Acid b) alpha Linolenic Acid c) Arachidonic Acid **d) All of these**
- how many double bonds are present in Arachidonic Acid
a) Single b) Double c) Triple **d) Tetrad**
- Arachidonic Acid is synthesized from _____ Acid
a) Linoleic Acid b) Alpha-Linolenic Acid c) Palmitic Acid d) None of these
- _____ is the precursor of paracrine hormones called Eicosanoids
a) Linoleic Acid b) Alpha-Linolenic Acid **c) Arachidonic Acid** d) All of these
- Eicosanoids exert complex control over many bodily systems in ____
a) inflammation b) immunity c) messengers **d) All of these**

Topic 115

- Palmitoleic Acid belongs to which family?

BIO-202 BIOCHEMISTRY (FINAL TERM)

- a) Omega 3 b) Omega 6 **c) Omega 7** d) omega 8
15. Fatty acids commonly found in body which are
a) Palmitic Acid b) Stearic Acid c) Oleic Acid **d) All of these**
16. the no of carbon atoms in stearic Acid are
a) 15 b) 16 c) 17 **d) 18**
17. most common saturated fatty acid found in Animals , plants and microorganisms
a) Palmitic Acid b) Stearic Acid c) Oleic Acid d) None of these
18. Excess carbohydrates in the body are converted into
a) Palmitic Acid b) Stearic Acid c) Oleic Acid d) None of these
19. _____ is the first fatty acid produced during fatty acid synthesis
a) Palmitic Acid b) Stearic Acid c) Oleic Acid d) None of these
20. stearic acid are most abundant in animal fat up to
a) 25% **b) 30%** c) 35% d) 40%
21. which is the monounsaturated Fatty acid (MUFA) found naturally
a) Palmitic Acid b) Stearic Acid **c) Oleic Acid** d) None of these
22. which fatty acid is highly abundant in membrane lipids
a) Palmitic Acid b) Stearic Acid **c) Oleic Acid** d) None of these
23. Glycerol and sphingosine are the type of _____ most commonly found in lipids
a) Esters **b) Alcohols** c) Fatty Acids d) Amides
24. glycerol contains _____ Carbon and _____ hydroxyl OH groups
a) 3 and 3 b) 3 and 4 c) 2 and 3 d) 2 and 2
25. _____ is synthesized from Dihydroxyacetone phosphate
a) Alcohols b) Fatty Acids **c) Glycerol** d) sphingosine
26. Dihydroxyacetone phosphate is acted upon by _____ enzymes to form glycerol
a) one enzyme **b) two enzymes** c) three enzymes d) four enzymes
27. which enzyme remove the phosphate group from glycerol phosphate to become glycerol
a) Glycerol phosphate dehydrogenase **b) glycerol kinase**
c) phosphatase d) All of these

BIO-202 BIOCHEMISTRY (FINAL TERM)

28. Glycerol is a precursor for synthesis of _____ and _____ in the liver and adipose tissue
a) Triacylglycerols and phospholipids b) diacylglycerols and glycolipids
c) monoacylglycerols and phospholipids d) tryacylglycerols and glycolipids
29. when the body uses stored fat as a source of energy glycerol and _____ are released into blood stream
a) Amino Acids b) Glucose c) Fatty acids d) Triacylglycerols
30. sphingosine is an _____
a) Poly Alcohol b) Amino Alcohol c) glyco Alcohol d) Non of these
31. sphingosine is synthesized in the body in the form of _____
a) Amide b) Ceramide c) newmide d) glyride
32. serine and palmitoyl CoA condense to form a product ketosphinganine that is _____ to sphinganine
a) Oxidised b) Reduced c) Hydrolysed d) Condensed
33. sphingosine is formed via degradation of sphingolipid in the _____
a) Lysosomes b) Golgyapptratus c) Neuchlues d) Cytoplasm
34. In Acrolein test we used _____ acid for dehydration to detect glycerol
a) Nitric Acid b) Phosphoric Acid c) sulphuric Acid d) Hydrochloric Acid
35. glycerol combines with three molecules of _____ to form glycerol trinitrate
a) Nitric Acid b) Phosphoric Acid c) Sulphuric Acid d) Hydrochloric Acid
36. which enzyme is used to hydrolyzed the Triacylglycerols
a) Protease b) glycerol kinase c) phosphatease d) lipase
37. There are _____ significant advantages to using triacylglycerol as stored fuels.
a) One b) two c) three d) four
38. The carbon atoms of fatty acids are more _____ than those of sugars.
a) Oxidized b) reduced c) condensed d) All of these
39. Triacylglycerol yields more than _____ as much energy as the oxidation of carbohydrates.
a) Twice b) thrice c) four times d) 5 times

BIO-202 BIOCHEMISTRY (FINAL TERM)

40. Triacylglycerol are _____ and therefore _____
- a) Hydrophilic – Hydrated b) Hydrophilic –Dehydrated
c) Hydrophobic –Dehydrated d) Hydrophobic –Hydrated
41. the organism that carries fat as fuel doesn't have to carry the extra weight of ____
- a) Proteins b) water c) carbohydrates d) none of these
42. One gram of polysaccharide has ____ gram of water
- a) One b) Two c) three d) four
43. Moderately obese people with _____ kg of triacylglycerols deposited in their adipocytes could meet their energy needs for months.
- a) 5 to 10 kg b) 10 to 15kg c) 15 to 20 kg d) 20 to 25 kg
44. the human body can store less than _____ energy supply in the form of glycogen
- a) A day b) 2 days c) 3 Days d) 4 Days
45. In some animals triacylglycerol stored under the skin serve as insulation against _____
- a) Low temperature b) High temperature c) Moderate temperature d) All of these
46. Physical properties of Neutral fats are
- a) colourless b) odorless c) tasteless d) All of these
47. the specific gravity of all fats is less than
- a) one b) two c) three d) Four
48. The emulsification of dietary fats in intestinal canal brought about by
- a) Bile pigments b) Bile juice c) Bile salts d) All of these
49. During the hydrolysis of Fats it yields _____
- a) fatty acids b) Glycerol c) Fatty acids and glycerol d) can't be hydrolyzed
50. During the hydrolysis of Triolein is converted into

BIO-202 BIOCHEMISTRY (FINAL TERM)

- a) Palmitic Acid b) Stearic Acid **c) Oleic Acid** d) None of these

51. hydrolysis of a fat by an _____ is called saponification

- a) Acid b) Base **c) Alkali** d) All of these

52. the alkali salts of the fatty acids which are called

- a) soaps** b) toothpaste c) Detergents d) All of these

53. which Alkali is used to form sodium palmitate soap formation

- a) NaOH** b) CaOH c) KOH d) NH₄ OH

54. the amount of alkali needed to saponify a given quantity of fat will depend upon the number of _____ group present

- a) Amino group b) alkyl group **c) carboxyl group** d) ester group

55. Fats containing _____ chain fatty acids will have _____ COOH groups per gram than long chain fatty acids.

- a) Short –more** b) long –more c) short – less d) long -less

56. saponification number of butter is

- a) 220 to 230** b) 245 to 262 c) 194 to 200 d) 210 to 233

57. Additive reactions consist of

- a) Hydrogenation b) Halogenation **c) A and B** d) Decomposition

58. During the hydrogenation of a lipids the melting point _____ and fat becomes more _____ at room temperature.

- a) decrease – liquid **b) Increase –Solid** c) Decrease –Solid d) increase –liquid

59. During the hydrogenation of fatty acids catalyst is used

- a) nickel b) copper **c) Nickel and copper** d) Zinc

60. Margarine manufacturing means.....

- a) changing liquid to solid** b) Solid to liquid c) Liquid to liquid d) All of these

61. addition of halogens in unsaturated fatty acids is called

- a) Hydrogenation **b) halogenation** c) hydrohalogenation d) All of these

BIO-202 BIOCHEMISTRY (FINAL TERM)

62. the degree of unsaturation is reflected by

- a) Iodine number b) saponification number c) A and B d) Sodium Number

63. Iodine number is defined as the number of grams of iodine absorbed by ____ of fat

- a) 50gm b) 100gm c) 75gm d) 85gm

64. during the conversion of Linoleic acid at room temperature into Tetraiodostearic acid which catalysts are/ is used

- a) Acetic Acid b) Methanol c) Acetic Acid and Methanol d) None of these

65. fats rich in unsaturated fatty acids have _____

- a) High Iodine number b) Low iodine number c) Moderate iodine no d) all of these

66. the higher is the iodine number the _____ reactive and _____ stable

- a) More –less b) Less – more c) More –More d) Less –Less

67. Rancidity occurs particularly when expose to

- a) Light b) Heat c) Atmospheric Oxygen d) All of these

68. _____ fats resist rancidity more than _____ fats that have unsaturated double bonds

- a) saturated –unsaturated b) Unsaturated –Saturated c) less saturated- More Unsaturated

69. Rancidity is occurs due to

- a) Oxidation b) Hydrolysis c) Hydration d) Oxidation and Hydrolysis

70. oxidation of the fat molecules give rise to some short chains of

- a) Aldehydes b) ketones c) dicarboxylic acids d) All of these

71. The Rancidity can be prevented in the food by adding

- a) Vitamin E b) Vitamin D c) Vitamin A d) All of these

72. Second type of neutral lipids that are of physiological importance.

- a) Glycerol b) alcohol c) waxes d) aldehydes

73. waxes are _____ in water and _____ in fat

- a) Soluble – insoluble b) insoluble –soluble c) soluble-soluble d) insoluble-insoluble

BIO-202 BIOCHEMISTRY (FINAL TERM)

74. waxes are _____ by lipases
a) Digestible **b) indigestible** c) semi digestible d) no effect
75. there _____ types of waxes
a) One **b) two** c) Three d) Four
76. True waxes are solid simple lipids containing a
a) Monohydric Alcohol b) Dihydric alcohol c) trihydric alcohol d) polyhydric alcohol
77. Which alcohol compound is found in plant cuticle waxes and in beeswax
a) Myricyl Alohol b) Cetyl Alohol c) Polyhydric Alocohol d) A and B
78. Example of true waxes is/are
a) Bee wax b) spermaceti wax c) Cholesterol **d) A and B**
79. Bees was is a mixture of waxes its chief constituent is
a) Myricyl and Palmitate b) Myrical and Aceatic Acid c) Palmitate and Oleic Acid
80. sperm whale contains _____ wax in his head
a) 330Kg b) 300Kg c) 350Kg **d) 336kg**
81. the wax obtained by Brazilian palm tree is
a) Bees was **b) Carnauba wax** c) jojoba wax d) All of these
82. waxes used for candles, soaps and cosmetics is
a) Bees was b) Carnauba wax **c) jojoba wax** d) All of these
83. LDL cholesterol and HDL cholesterol stands for? no options
a) Low density Lipoprotein b) High density lipoprotein
84. which type of cholesterol have been associated with decreased risk for heart diseases
a) LDL cholesterol **b) HDL cholesterol** c) TAG d) Total cholesterol
85. lipoprotein particles are spherical aggregates with _____ lipids at the core and _____ protein side chains and lipid head groups at the surface
a) **Hydrophobic –Hydrophilic** b) Hydrophilic –hydrophobic

BIO-202 BIOCHEMISTRY (FINAL TERM)

c) Hydrophobic –Hydrophobic d) Hydrophilic –Hydrophilic

86. Lipoproteins function is to keep their components lipids as

a) Soluble b) Insoluble c) Semisoluble d) None of these

87. Different types of lipoproteins are different in

a) Size b) Density c) Site of origin d) All of these

88. The maximum concentration of TAG (Triacylglycerol) present in

a) chylomicrons b) VLDL c) LDL d) HDL

89. the maximum concentration of cholesterol is present in

a) Chylomicron b) LDL c) VLDL d) HDL

90. the Chylomicron remnant is removed from the circulation by the

a) Liver b) Kidney c) Intestine d) Intestinal Mucosa

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91. _____ are assembled in the liver

a) Chylomicron b) VLDL c) LDL d) HDL

92. LDL contain _____ as their major apolipoprotein that carry cholesterol to _____

a) apoB-100 and Extra Hepatic Tissue b) apoB-200 and Liver
c) ApoB-100 and liver c) ApoB-200 and Extra hepatic Tissue

93. _____ can also accumulate in the _____ lining the arteries resulting in the formation of atherosclerosis.

a) Reduced LDL and Macrophage cells b) Oxidized LDL and Macrophage cells
c) Oxidized HDL and macrophage cells d) Reduced HDL and Macrophage cells

94. which type of lipoproteins originates in the liver and small intestine

a) Chylomicron b) VLDL c) LDL d) HDL

95. which type of lipoprotein take up cholesterol from peripheral tissues and return it to the liver as cholesterol esters

BIO-202 BIOCHEMISTRY (FINAL TERM)

- a) Chylomicron b) VLDL c) LDL **d) HDL**

96. when cholesterol is taken up by the HDL, it is immediately _____ and becomes _____

- a) Esterified - Hydrophobic** b) Oxidized - Hydrophobic
c) Esterified - Hydrophilic d) Oxidized -Hydrophilic

97. when cholesterol is taken up by the HDL it is called _____

- a) Nascent HDL **b) Mature HDL** c) Pre Mature HDL d) All of these

98. which lipoprotein is called good cholesterol carrier

- a) Chylomicron b) VLDL c) LDL **d) HDL**

99. Healthy Fats contain.....

- a) Monounsaturated fats b) polyunsaturated fats c) omega-3 polyunsaturated fats **d) All of these**

100. unhealthy fat contains

- a) Trans-fat b) Saturated fat c) increased Cholesterol Content **d) All of these**

101. elevate serum LDL but not HDL therefore they increase the risk of CHD

- a) **Trans fat** b) Saturated fat c) Increased Cholesterol Content d) None of these

102. fatty acids of trans configuration in our food come from _____ different sources

- a) one **b) two** c) three d) Four

103. The concentration of IP-TFA in partially hydrogenated fat may be as high as

- a) 60%** b) 70% c) 80% d) 90%

104. in milk, RP-TFA is _____ of the fat

- a) 4-6 %** b) 4-7% c) 3-4% d) 6-7%

105. _____ is more harmful than _____ when compared on a gram-to-gram basis

- a) RP-TFA and IP-TFA **b) IP-TFA and RP-TFA**

106. the deleterious effect of trans fats occur at intakes of _____ g/day

- a) 3 to 7 b) 4 to 7 **c) 2 to 7** d) 5 to 7

107. saturated fats is associated with _____ levels of Total cholesterol and LDL cholesterol

BIO-202 BIOCHEMISTRY (FINAL TERM)

- a) Low **b) High** c) Medium d) Very low
108. saturated fats are found in
- a) Butter and cheeses b) milk and palm oil c) Animal fat and coconut oil **d) all of these**
109. Among the SFAs stearic acid appears to have _____ effect on LDL-C
- a) Negative **b) Neutral** c) Positive d) Polar
110. Saturated Fatty Acids (SFAs) are considered to Hypercholesterolemic
- a) Luaric Acid b) Myristic c) palmitic d) **All of these**
111. Deitary cholesterol has _____ on plasma cholesterol
- a) Little effect** b) Hight Effect c) Medium Effect d) Very low effect
112. There are _____ classes of phospholipids
- a) one **b) two** c) three d) Four
113. membrane lipids are _____ i.e one end of the molecule is hydrophobic and the other is hydrophilic
- a) Amphoteric **b) amphipathic** c) amphophatic d) none of these
114. Phospholipids is not synthesized by
- a) Liver b) adipose tissues c) mammary glands **d) mature erythrocytes**
115. Phosphoglyceride is a diacylglycerol with a _____ group on the _____ carbon of glycerol
- a) phosphate – 3 carbon** b) Amide – 3 carbon c) sulphate – 3 carbon d) phosphate – 5
116. in general glycerophospholipids contain _____ at Carbon no 1(C-1)
- a) Saturated** b) Unsaturated c) Phosphate d) All of these
117. the phosphate group on phophatidic acid PA can be esterified to another compound containing _____
- a) Amide group b) Alkyl Group **c) Hydroxyl group** d) Ester group
118. the most abundant phospholipids of the cell membrane is
- a) Lecithins** b) Phospholipidcholine c) phospholipidaccetaline

BIO-202 BIOCHEMISTRY (FINAL TERM)

119. the gaseous exchange occurs _____ in lungs

- a) Alveoli b) brochioles c) alviolus d) All of these

120. Adenosine 3'-phosphate-5'-phosphosulfate is the sulfate donor for :

- A) sulfated proteoglycans B) Conjugate of drugs C) Phosphosulfate D) Both a and b

121. Which of the following methyl group donor:

- A) S-adenosylmethionine B) Adenosine c) Phosphate-5 d) All of these

122. _____ and _____ play key roles in activating or inhibiting proteins:

- a) GTP, GMP b) GDP, AMP c) GTP, GDP d) AMP, GMP

123. cAMP and cGMP serve as _____ messengers in signal transduction pathways:

- a) 1st b) 2nd c) 3rd d) 4th

124. synthetic purine and pyrimidine analogs contains which group?

- a) Halogens b) Thiols c) additional of nitrogen atoms d) All of these

125. Pyrimidine are used for:

- a) Chemotherapy b) Treatment of AIDS c) Organ transplantation d) All of these

126. suffix "ine" in bases denotes the presence of _____ in the ring.

- a) Nitrogen b) Amine c) Hydroxyl d) Both a and b

127. The nitrogen-containing bases belong to _____ families of compounds:

- a) 2 b) 3 c) 4 d) 5

128. By the attachment of different groups to the _____ different types of pyrimidine and purine are generated.

- a) Rings b) Compound c) Nucleotide d) Both a and b

129. which nucleotide contains AG:

- a) DNA b) RNA c) Both d) None of these

130. Adenine when combines with _____ the structure is known as Adenosine

- a) Hexose b) Pentose c) Tetrose d) All of these

131. Deoxyguanosine refers to which base?

- A) Adinine+ pentose b) Guanine+pentose c) Guanine+ribose d) Guanine+sucrose

132. Which of the following is Minor Purine Bases:

- a) Inosine b) methyl guanine c) Both a and b d) Guanine

133. Mercaptopurine, Allopurinol & 8-Azaguanine are referred to which type of bases?

- a) Natural b) Unnatural c) Doubles d) Both a and b

134. Uric acid is the catabolic end product of _____ in human beings:

- a) Guanine b) Purine c) thymine d) Cytosine

Topics 153 to 162

1. Prostaglandins are fatty acids containing _____ atoms, including an internal _____

- a) 10 C – 5 carbon ring b) 15C – 8 carbon ring c) 20 C – 5 Carbon Ring d) 20 C – 8 carbon ring

2. Prostaglandins have double bond between

- a) C13 and C 14 b) C5 and C6 c) C17 and C18 d) All of these

BIO-202 BIOCHEMISTRY (FINAL TERM)

3. Nomenclature of prostaglandins (PGs) involves assignment of
a) Capital letter b) Numeral subscript c) Greek letter subscript **d) All of these**
4. Nomenclature of (PGs) the capital letter refers
a) Ring OH group b) Ring Double Bond **c) Ring substituents** d) All of these
5. Which prostaglandins contain 2 rings
a) PGA b) PGD **c) PGI** d) All of these
6. The no of unsaturated bonds in Prostaglandins is determined by
a) Capital letter **b) Numeral subscript** c) Greek letter subscript d) All of these
7. If there are 2 double bonds present in prostaglandins it will belongs to series
a) Series one **b) Series two** c) Series three d) Series four
8. the Greek letter subscript found only in ___ series it refresh ___ group at carbon 9
a) F – OH group b) A – OH group c) F – COOH group d) A – COOH group
9. in the prostaglandins the Hydroxyl group OH primarily exists in ___ Position
a) Alpha b) Beta c) Gamma d) Omega
10. Act as substrate for the lipooxygenase
a) Arachidonic Acid b) 20 C Fatty Acids
c) Arachidonic Acid and 20 C Fatty Acids d) Arachidonic Acid and 15 C FAs
11. Products of Lipxygenase pathway are ____
a) Cyclic **b) Linear** c) Cyclic or linear d) double ringed
12. nomenclature rules are followed for Leukatrienes and lipoxins starts from
a) from series 1 b) from series 2 **c) from series 3** d) All of these
13. ETA , and EPA stands for no options
Eicosa tri enoic Acid Eicosa Pentaenoic Acid
14. Arachidonic acid have ___ double bonds
a) one b) two c) three **d) four**

BIO-202 BIOCHEMISTRY (FINAL TERM)

15. lipoxygenase enzymes incorporation of _ molecule in arachidonic acid and forms __
a) Oxygen – OOH b) Oxygen – COOH c) Oxygen – OH d) Hydrogen – OH
16. when oxygen is added it isomerizes at ____ away from the hydro-peroxy
a) One carbon b) Two carbon c) Three carbon d) Four carbon
17. addition of oxygen during synthesis of leukotrienes and lipoxins configuration changes to
a) Cis to trans b) Trans to Cis c) Cis to double trans d) Trans to Double Cis
18. during the isomerization of double bond becomes ____ in Lipoxygenase pathway
a) one step forward b) one step backward c) two step forward d) two step backward
19. The Hydro-Perxy group is
a) Stable b) Unstable c) Very stable d) low stable
20. which of the following molecules act as messenger molecules
a) HETEs b) Arachidonic Acid c) Heme d) All of these
21. LTs and LXs are stands for no options
Leukotrienes and Lipoxins

HETEs: Hydroxy-eicosa-tetra-enoic acid HPETEs: Hydro-peroxy-eicosa-tetra-enoic acid
22. LTs and LXs have ____ double bonds as compared to Prostaglandins have ____ double bonds
a) 1 to 3 and 3 to 5 b) 3 to 5 and 1 to 3 c) 2 to 5 and 3 to 5 d) 2 to 4 and 2 to 5
23. HPETEs are the precursors of
a) leukotrienes b) lipoxins c) leukotrienes and lipoxins d) HETEs
24. 5-HPETE is converted to
a) LTA4 b) LTA5 c) LTA6 d) LTA7
25. Functional leukotrienes are formed from LTA4 examples are
a) LTB4 b) LTC4 c) LTD4 d) A and B
26. Removal of ____ residue from LTC4 forms LTD4
a) Glycine b) Glutamine c) Glutamate d) B and C

BIO-202 BIOCHEMISTRY (FINAL TERM)

27. Leukotrienes were so named because they were first discovered in
a) Red blood cells b) White blood cells c) Platelets d) All blood cells
28. The lipoxins are formed through the action of ___ and ___ on Arachidonic Acid
a) 15 and 5 lipoxygenase b) 10 and 5 lipoxygenase
c) 5 and 5 lipoxygenase d) All of these
29. Chemotaxis is migration of ___ to the tissue site of injury or inflammation
a) RBCs b) WBCs c) Platelets d) All of these
30. Lipoxins induce chemotaxis and stimulate ____ radicals for killing microorganisms
a) Oxide b) Super oxide c) Trioxide d) All of these
31. which of the followings have very short half lives
a) Prostaglandins b) Thromboxanes c) leukatrienes and lipoxins d) All of these
32. Nucleotides are the building blocks of _____. No options
Ans is Nucleic Acid
33. Nucleic acids, which include DNA and RNA, are made from monomers known as ____
a) Nucleoside b) Nucleotides c) Poly nucleotides d) All of these
34. Protein synthesis dependent on
a) Nucleoside b) Nucleotides c) Poly nucleotides d) All of these
35. Principal donors and acceptors of phosphoryl group in metabolism
a) ATP b) ADP c) AMP d) ATP and ADP
36. in ATP molecules the removal of ___ Group release energy
a) Sugar group b) Ribose group c) Phosphate d) All of these
37. Examples of Co- Enzymes are
a) coenzyme A, b) FAD c) NAD^+ and NADP^+ d) All of these
- 1) Ether lipids compounds constitute as much as _____ of the phospholipids of brain and muscle
a) 5% b) 10% c) 15% d) 20%
- 2) Ether lipids with an unsaturated group (alkenyl) at the 1st position on the glycerol chain are called :

BIO-202 BIOCHEMISTRY (FINAL TERM)

A) Plasmalogens

b) Glycerophospholipids

c) (PAF) Platelet-activating factor

- 3) PAF is synthesized and released by a variety of cell ____:
- a) Size b) Types c) Length by numbers d) Both a and b
- 4) About ____ of the heart phospholipids are plasmalogens
- a) All
b) Half
c) One fourth
d) Some
- 5) How many subclasses are There of sphingolipids:
- a) 2
b) 3
c) 4
d) 5
- 6) Sphingoglycolipids molecules contain ____ and ____ components:
- a) Carbohydrate
b) Lipid
c) Both a and b
d) None of these
- 7) Sphingolipids, like other membrane lipids, are composed of:
- a) hydrophobic portion
b) polar head group
c) Plasmalogens
d) Both a and b
- 8) Sphingomyelins are present in the ____ of animal cells:
- a) plasma membranes
b) Nucleus
c) Cytoplasm
d) All body
- 9) Cerebroside have ____ sugar linked to ceramide:
- a) Single
b) Double
c) Triple
d) Both a and d
- 10) Galactosylceramide is a major glycosphingolipid of ____:
- a) Nucleus
b) Digestive system
c) Brain
d) Both a and b
- 11) Globosides are ____:
- a) Glycosphingolipids
b) Galactosylceramide
c) Cerebrosides
d) Both a and b

BIO-202 BIOCHEMISTRY (FINAL TERM)

- 12) Globosides are highly abundant in
a) RBCs
b) Wbc
c) Platelets
d) All of these
- 13) Sialic acids are acidic sugars with a ___ carbon backbone:
a) Six
b) Seven
c) Eight
d) Nine
- 14) Sialic acid gives gangliosides the _____ charge at pH 7
a) Neutral
b) Positive
c) Negative
d) Both b and c
- 15) About _____ of brain lipids are gangliosides and were first isolated from the ganglion of brain cells
a) 4%
b) 5%
c) 6%
d) 7%
- 16) Gangliosides have a significant role in
a) Growth
b) differentiation of tissues
c) carcinogenesis
d) All of these
- 17) The basis of blood groups depend on expression of different antigens on ____
a) RBCs
b) Wbc
c) Platelets
d) All of these
- 18) Modification of O antigen results in _____ blood groups respectively:
a) A
b) B
c) AB
d) All of these
- 19) Sulfatides are found predominantly in _____ ?
a) nerve tissue
b) Kidney
c) Stomach
d) Both a and b
- 20) Gangliosides have oligosaccharides as their _____ head groups:
a) Non_polar
b) Polar
c) Neutral

BIO-202 BIOCHEMISTRY (FINAL TERM)

- d) Both a and b
- 21) Glyceroglycolipids are the predominant membrane lipids of ?
- a) Animals
 - b) Plants
 - c) Prokaryotes
 - d) Eukaryotes
- 22) Galactolipids constitute about _____ of plant membrane lipids:
- a) 50% to 60%
 - b) 60% to 70%
 - c) 70% to 80 %
 - d) 80% to 90%
- 23) abundant lipids in the biosphere are?
- a) Sulfolipids
 - b) Galactolipids
 - c) Glycolipids
 - d) Glyceroglycolipids
- 24) Sulfonated glucose is joined to the ____ of diacylglycerol in glycosidic linkage:
- a) C2
 - b) C3
 - c) C4
 - d) C5
- 25) Galactolipids and Sulfolipids are included in?
- a) Glyceroglycolipids
 - b) Glycolipids
 - c) Glycerolipids
 - d) None of these
- 26) O antigen also referred to as _____ antigen:
- a) A
 - b) B
 - c) C
 - d) H

27)

1. Nucleotides that includes in pyrimidines are/is

- a) Cytosine
- b) thymine
- c) Uracil
- d) All of these

2. Cytosine when combine with pentose it be

- a) deoxycytidine
- b) cytidine
- c) monoxycytidine
- d) A&B

- [illegible]

BIO-202 BIOCHEMISTRY (FINAL TERM)

c) Aromatic – Double

d) Aliphatic – Tripple

19. structure that contain other atoms in addition to carbon in ring structure called

a) Homocyclic

b) Hetrocyclic

c) Isocyclic

d) polycyclic

20. Nucleotides have nature

A) Aromatic

b) Hetrocyclic

c) Aromatic and Hetrocyclic

d) Homocyclic

21. the six atoms rings of Purine and pyrimidines are numbered in

a) Same direction

b) Opposite direction

b) Linear Direction

d) Cyclic Direction

22. which of the nucleoside contain double ring

a) Purine

b) Pyrimidine

c) Cycline

d) Hexocycline

23. Purines or pyrimidines with and _____ are weak bases

a) Amino Group

b) Hydroxyl Group

c) Methyl group

d) easter group

24. the most important functional groups of pyrimidines and purinse are _____ no options

Ans Nitrogens Rings Cybonyl groups Exocycli Amino Group

25. Purine and Pyrimidine bases are _____

a) Hydrophilic

b) Hydrophobic

c) Neutral

d) All of these

26. The conjugated double bonds of purine and pyrimidine derivatives absorb

a) Infra red Light

b) Heat Waves

BIO-202 BIOCHEMISTRY (FINAL TERM)

c) UV Light

d) all of these

27. The mutagen property is utilized in ____ analysis of nucleotides and nucleic Acids

a) Qualitative Analysis

b) Quantitative Analysis

c) Qualitative and Quantitative Analysis

c) Numeric Analysis

28. purine and pyrimidine bases can exist in ____ form at physiologic pH

a) keto-enol

b) amine-imine

c) A&B

d) Aminol

29. Smaller pyrimidine molecule has the ____ and the larger purine molecule have ____

a) Longer name – shorter name

b) Shorter name – Larger name

c) Longer name – longer name

c) Shorter name – Shorter name

30. Sugars are linked to the heterocycle by a ____

a) Glycosidic Bond

b) N- Glycosidic Bond

c) B-N-Glycosidic Bond

d) All of these

31. B-N-Glycosidic Bond in Pyrimidine forms at ____ and Purine at ____

a) N-1 and N-9

b) N-3 and N-9

c) N-1 and N-3

d) At any position

32. glycosidic bond is formed when ____ removed from pentose and ____ removed from Base

a) OH and H

b) H and OH

c) OH and O

c) O and H

33. the difference between glycosidic linkage and O-glycosidic bond is

a) Nitrogen and Oxygen

b) Carbon and Nitrogen

c) oxygen and Hydroxyl

d) Amino and Carboxyl

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34. The atoms in the rings of the bases are numbered ___ in pyrimidines & ___ in purines
- a) 1 to 5 and 1 to 6 b) 1 to 6 and 1 to 9
- c) 1 to 9 and 1 to 6 c) 1 to 7 and 1 to 9
35. In the structure of Nucleotides the prime no is given to
- a) Nitrogen Base Carbons b) Sugar carbons
- c) Phosphate d) All of these
36. If we say 5' - carbon in a nucleoside or nucleotide is referred to
- a) Nitrogen Base Carbons b) Sugar carbons
- c) Phosphate d) All of these
37. When two or more nucleotides combine together a ___ bond is formed.
- a) Glycosidic Bond b) Peptide Bond
- c) phosphodiester Bond d) Hydrogen Bond
38. phosphodiester bond is formed between ___ group of sugar and ___ group of other base
- a) 3' OH and 5' PO₄ b) 2' OH and 5' PO₄
- c) 5' OH and 3' PO₄ d) 5' OH and 5' PO₄
39. The backbones of both DNA and RNA ____
- a) Hydrophobic b) Hydrophilic
- c) Neutral d) None of these
40. The formation of Hydrogen bonding in nucleotides is because
- a) OH group of Sugar b) Amino Group of Bases
- c) Phosphate negative charge d) All of these
41. The phosphate group completely ionized at ____ pH
- a) Acidic pH b) Basic pH

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c) Neutral pH

d) All of these

42. The negative charges on phosphate are generally neutralized by ___ with positive charges

a) ionic interactions

b) Covalent Interaction

c) Polar interactions

d) Non polar interactions

43. Cyclic GMP serves as second messenger in response to

a) Super oxide

b) Nitric oxide

c) Super Hydroxide

d) All of these

44. DNA is Present is

a) Chromosomes of Eukaryotes

b) Mitochondria

c) chloroplast and plasmids

d) All of these

45. DNA is a polymer of

a) Deoxyribonucleoside monophosphate

b) Deoxyribonucleoside diphosphate

c) Deoxyribonucleoside Triphosphate

d) All of these

46. The protein-DNA complex is present in a non membrane bound region known as

a) Plasmid

b) Nucloside

c) Nucleoid

d) Nucleolus

47. In DNA double helix, the two strands of DNA are held together by.

a) glycosidic linkage

b) Phosphodiester linkage

c) Hydrogen bonding

c) other interactions

48. The complex folding of large chromosomes within eukaryotic chromatin and bacterial nucleoids is generally considered

a) Primary structure

b) Secondary structure

c) tertiary structure

d) All of these

49. The stacking also involves a combination of ___ interactions between the bases.

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- a) Van der Waals
b) Dipole – Dipole
c) Hydrogen bondings
d) A & B

50. Base stacking helps to contact of the bases with water

- a) Minimize b) Maximize
- c) no effect d) All of these

51.

- 1) A key factor affecting the rate of a reaction catalyzed by an enzyme is the concentration of;
a) Enzyme
b) substrate,
c) pH
d) Temperature
- 2) because of reversibility of reactions, conversion of product _____ substrate:
a) Forward
b) Back
c) Stop at
d) Both a and b in some cases
- 3) One simplifying approach in kinetics experiments is to measure the :
a) Initial rate
b) designated V_0
c) [S] greater _____ concentration of, [E]
d) All of these.
- 4) V_0 is the _____?
a) initial velocity
b) Final velocity
- 5) Increase in substrate concentration _____ V_0 ;
a) Increase
b) Decrease
c) Stop
d) Both b and c
- 6) When initial velocity (V_0) is plotted against [S] a hyperbolic curve results, which represent the _____:
a) Minimum velocity
b) Maximum velocity
c) Substrate concentration
d) Initial velocity
- 7) At relatively low concentrations of substrate, V_0 _____ almost linearly:
a) Increases
b) Decreases
c) Go forward

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- d) Go reverse
- 8) At this point in the reaction, if $[S] \gg E$, all available enzyme is
- Unsaturated
 - Saturated**
 - Polymerase enzyme
 - Helicase enzyme
- 9) finite limit of ____ is called saturation kinetics
- $[S]$
 - V_{min}
 - E
 - V_{max}**
- 10) Michaelis constant is represented by?
- M_c
 - M_k
 - K_m**
 - M_{hc}
- 11) Low concentration of substrate is needed to half-saturate the enzyme i.e. to reach a velocity that is ____?
- $1V_{max}$
 - $1/2V_{max}$**
 - $2V_{max}$
 - $2/3V_{max}$
- 12) A numerically ____ K_m reflects a ____ affinity of enzyme;
- High, high
 - High, low
 - Low, low.
 - Low, high.**
- 13) K_m glucose of approximately
- 0.5mM
 - 0.05 mM**
 - 0.005mM
 - 5mM
- 14) Write Michaelis-Menten equation, the rate equation with its symbols detail;.....no option
- Ans is
- $$V_o = \frac{v_{max}[S]}{K_m + [S]}$$
- $$V_o = V_{max} \frac{[S]}{K_m + [S]}$$
- $K_m + [S]$ Where;
- V_o = initial reaction velocity
 - V_{max} = maximal velocity
 - K_m = Michaelis constant
 - $= \frac{K_1 + K_2}{K_1}$
 - $[S]$ = substrate concentration
- 15) Leonor Michaelis and Maud Menten in _____, proposed a simple model that accounts for most of the features of enzyme-catalyzed reactions:
- 1919

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- b) 1911
- c) 1939
- d) 1913

16) What is abbreviation of ES?

- a) Enzyme study
- b) Enzyme starting
- c) Energy substrate
- d) Enzymes substrate

1. ___ is the most abundant substance in living systems, making up ___% or more of the weight of most organisms

- a) Water – 80%
- b) Protein – 70%
- c) Water – 70%
- d) Carbohydrate - 70%

2. _____ are of crucial importance to the structure and function of biomolecules

- a) Hydrogen bonding
- b) Polarity
- c) Tendency of water to ionize
- d) A and C

3. What gives water to its unusual properties like higher MP, BP and Heat of Vaporization

- a) Covalent bonding
- b) Hydrogen bonding
- c) Dipole forces
- d) Intermolecular forces

4. The water molecules have ___ partial charges

- a) positive
- b) Negative
- c) One negative and 2 positive
- d) All of these

5. Attraction between Oxygen atom of one water molecule and hydrogen of another molecule this bonding is called

- a) Covalent bonding
- b) Electrostatic forces
- c) Hydrogen bonding
- d) All of these

6. oxygen atom allows each water molecule to form hydrogen bonds with as many as ___ neighboring water molecules

- a) One
- b) Two
- c) Three
- d) Four

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7. The degree of ionization of water into H⁺ and OH⁻ ions is

- a) Higher
- b) Smaller
- c) Mediator
- d) None

8. During ionization of water the hydrogen ions hydrated to

- a) Amonium Ion
- b) Hydronium Ion
- c) Hydroxyl Ion
- d) Hydrogenium Ion

9. The ionization of water can be measure by its

- a) Head conductivity
- b) Hydrogen conductivity
- c) protonation
- d) Electrical Conductivity

10. At 25°C only about ___ out of every 10⁹ molecules in pure water are ionized at any instant

- a) one
- b) Two
- c) Three
- d) Four

11. Write the equilibrium constant for the reversible ionization of water NO option

K_{eq} =

$$\frac{[H^+][OH^-]}{[H_2O]}$$

12. One mole of water weighs is\\

- a) 18g
- b) 18 amu
- c) 21g
- d) 21 amu

13. The product in water equilibrium is designated as

- a) K_e
- b) K_{eq}

BIO-202 BIOCHEMISTRY (FINAL TERM)

c) K_w

d) K_{eq}

14. The value for K_{eq} , determined by electrical conductivity measurements of pure water, is ____ at 25°C

a) 1.8×10^{-16}

b) $1.9 \times 10^{+16}$

c) 1.8×10^{-18}

d) 1.9×10^{-1}

15. When there are exactly equal concentrations of H^+ and OH^- , as in pure water, the solution is said to be at _

a) Acidic pH

b) Basic pH

c) Alkali pH

d) Neutral pH

16. pH means

a) Negative logarithm

b) Negative logarithm of Hydrogen ions

c) Negative logarithm of H^+ ions

d) positive logarithm of Hydrogen ions

17. For each pH unit less than 7.0, the $[H^+]$ is ____ tenfold and for each pH unit above 7.0, it is ____ tenfold

a) increased and decreased

b) Decreased and increased

c) less and decreased

d) more and increased

18. $pH + pOH =$ ____

a) 11

b) 12

c) 13

d) 14

19. What will be the pH of 0.1 M HCl?

a) 1

b) -1

c) +1

d) 2

20. The stronger the acid, the greater its tendency ionizes that means...

a) to gain electrons

b) to gain proton

c) to lose its proton

d) to gain electrons

21. Which of the following acids are strong acids?

a) sulphuric Acid

b) Hydrochloric Acid

c) Nitric Acid

d) All of these

22. Strong bases are/is

a) NaOH

b) CaOH

c) NH_4OH

d) All of these

23. The stronger the tendency to dissociate a proton, the stronger is the acid and the ____ its pK_a

a) stronger

b) higher

c) neutral

d) lower

BIO-202 BIOCHEMISTRY (FINAL TERM)

24. _____ is used to determine the amount of an acid in a given solution

- a) Molarity b) pH c) Titration d) normality

25. A measured volume of the acid is titrated with a solution ____ of known concentration

- a) weak Base b) Strong Base c) neutral solution d) All of these

26. The pH of the equimolar solution of acetic acid and acetate is exactly equal to the pKa of acetic acid pKa = _____

- a) 4.32 b) 4.75 c) 4.76 d) 9

27. The Henderson Hasselbalch HH equation relates

- a) pH b) pKa c) buffer concentration d) All of these

Join VU_MSc_Zoo_1st_Semester

MCQ BIO202 Current paper2021

1. The native state of protein has smaller **giibs** free energy than denatured protein
2. $\text{H}_2\text{PO}_4/\text{HPO}_4$ PAIR CAN serve as an effective buffer between **pH 5.9 to 7.9**
3. Histones are positive due to high content of **lysin and arginine**
4. Glactolipids constituents of plants mambrane lipid **70 to 80%**
5. The deleterious effects of trans fat occurs at intake of **2 to 7g/day**
6. When initial velocity is plotted against S the curve obtained is called **hyperbolic curve**
7. Palmitic acid is **16Carbon**
8. Charge on alanine in acidic solution when pH is less than **2 +1**
9. Monoamino, monocarboxylic acid is **alanine**
10. Gluconic acid is formed by the oxidation of glucose at carbon number **1**
11. Intermediate in glycolysis is **D-glyceraldehyde**
12. The number of stereoisomer for a molecule containing only one chiral carbon is **2**
13. 3' 5' strand is called **template strand**
14. pKa value of alanine Ans.: **(2-3)**
15. purine include Ans. **cytosine and guanine**
16. Thy (Bio 202 mcq) (1) DNA helix the two strand of DNA hold together by Ans: **hydrogen bond.**
17. Thymine and uracil d/f by only one - group Ans: **methyl**
18. Triacylglycerols the fatty acid are joined together to glycerol by Ans: **ester linkage**
19. which are following of halogen Ans: **hydrogen**
20. HDL contain-%protein Ans: **55%**
21. About -percent of CO_2 is carried in blood as bicarbonate Ans; **25/30**
22. number of palmitic acid Ans: **16**
23. bile is a fluid that is made and released by - and stored Ans: **liver and gallbladder**
24. RNA is referred Ans: **copy of DNA**
25. KW for water at 25°C Ans: **10-14**
26. The d/f b/t the energy level of ground state is the Ans: **activation energy**
27. Aromatic of Amino group Ans: **phenylalanine**
28. carbohydrates and lipids form together form Ans: **glycosphingolipids**
29. polysaturated fatty acid contain_number double bond Ans: more than one
30. optimum pH of pepsin **ANS 1.5-1.6**



HelPers

HELPING MATERIAL

QUIZ NO. 01 of BIO-202

(BIOCHEMISTRY 1)

ADMIN;

FAKAT BALOCH & ANGRY BIRD

1) are polyhydroxy aldehyde or ketones or a substance that give aldehyde or ketones on hydrolysis

Carbohydrates

2) Carbohydrates are made up of and some amount of N,S,P are also present.

C,H,O

3) Empirical formula of carbohydrates is.....

$(CH_2O)_n$

4) How many type of carbohydrates?

Four

5) Name four types of carbohydrates.

Monosaccharides

Oligosaccharides/ Diasaccharides

Polysaccharides

6) are simple sugar which cannot be hydrolyzed further into simple sugar.

Monosaccharides

7) In the open chain form one of the carbon atoms is double-bonded to an oxygen atom to form a

Carbonylgroup

8) Each of the other carbon atom has a.....

Hydroxylgroup

9) If the carbonyl group is at the end of the carbon chain then the monosaccharide is called

Aldose

10) If the carbonyl group is at any other position then the monosaccharide is called.....

Ketose

11) All common monosaccharides and diasaccharides have names ending with the suffix of

"ose"

12) Two monosaccharides are combine together to form a.....

Diasaccharides

13) Name three diasaccharides

Lactose

Maltose

Sucrose

14) Maltose give which carbohydrate on hydrolysis?

Maltose give 2 molecules of glucose on hydrolysis

15) Lactose give which molecules on hydrolysis?

Lactose give 1 glucose and 1 fructose on hydrolysis

16) Sucrose give which molecules on hydrolysis?

Sucrose give 1 glucose and 1 fructose on hydrolysis

17) Two molecules of diasaccharides are join together through bond

Glycosidic bond

18) When many monosaccharides are join together through glycosidic bond they form.....

Polysaccharides

19)give more than 10 molecules of monosaccharides on hydrolysis.

Polysaccharides

20) Name one linear chain molecule of polysaccharides

Cellulose

21) Name one branched chain molecule of polysaccharides.

Glycogen

22) How many types of polysaccharides?

Two

23) Name two types of polysaccharides.

Homopolysaccharides

Heteropolysaccharides

24) Polymers of same monosaccharides units are called.....

Homopolysaccharides

25) Write some examples of homopolysaccharides.

Starch, Glycogen, Insulin, Cellulose, Dextrins etc

26) Polymers with different monosaccharides unit are called?

Heteropolysaccharides

27) Write example of heteropolysaccharides

For example Mucopolysaccharides

28) Constituent of Mucopolysaccharides form the ground substance of.....tissue

Mesenchymal tissue

29) Which derivative of carbohydrate is used as drug?

Cardiac glycosides

30) Which carbohydrates can cause diseases?

Galactosemia

Glycogen storage disease

Intolerance

31) Derangement of glucose metabolism is seen in

Diabetes mellitus

32) The existence of two or more compounds having same molecular formula but different arrangement of atoms within molecules are called.....

Isomerism

33) How many types of isomerisms

Two

34) Name two types of isomerism.

Constitutional isomer

Stereoisomer

35) Name further division of stereoisomers

Diastereomer

Enantiomer

36) Compound which are identical in composition and differ only in configuration are called.....

Stereoisomer

37) Stereoisomer which are mirror image of each other are called.....

Enantiomer

38) Stereoisomer which are not mirror image of each other are called.....

Diastereomer

39) A carbon atom to which two different atoms or group of atoms are attached is said to be

Asymmetric or chiral

40) The center around which substituent groups are arranged in a specific orientation are called.....

Chiral center

41) The center around which there is no freedom of rotation is called

Double center

42) Those isomer which are differ in the arrangement of their substituent group which respect to the non-rotating double bond is called.....

Geometric isomer

43) Those isomer which cannot be interconverted without temporarily breaking one or more covalent bond are called.....

Configurational isomer

44) Write some example of geometric isomer.....

The configuration of maleic acid and its isomer, fumaric acid

45) Molecules with same chemical properties and different physical properties are called.....

Enantiomers

46) When equal amount of dextrorotatory levorotatory isomers represent the resulting mixture have no optical activity, such a mixture is said to be.....

Racemic

47) Separation of optically active isomers from a racemic mixture is called

Resolution

48) All monosaccharides except..... contain one or more asymmetric(chiral) carbon atoms.

Dihydroxyacetone

49) In aqueous solution aldotetroses and all monosaccharides with five or

more carbon atoms in the backbone occur predominantly as.....

Cyclic (ring) structure

50) The formation of ring structures is the result of a general reaction b/w alcohols and aldehyde or ketones to form derivatives called.....

Hemiacetals and hemiketals

51) Hemiacetals contain an additional asymmetric carbon atom and thus can exist in two form

Stereoisomeric

52) Asymmetric produce two stereoisomers which is designated as and

Alfa and Beta

53) The designation indicates that hydroxyl group at the C-1 is trans to the CH₂O

Alfa

54) The designation indicates that hydroxyl group at the C-1 is cis to the CH₂O

Beta

55) Isomeric form of monosaccharides that differ only in their configuration about the hemiacetal or hemiacetal carbon atoms are called

Anomers

56) The carbonyl carbon atom is called.....

Anomeric carbon

57) The ring structure of monosaccharides are similar to the ring structures of either pyran (six membered ring) are called.....

Pyranoses

58) The ring structure of monosaccharides are similar to the ring structure of either furan (five membered ring) are called.....

Furanoses

59) Pyran means.....

Six membered ring

60) Furan means.....

Five membered ring

61) Which ring structure is stable Aldopyranoses ring or Aldofuranoses?

Aldopyranoses

62) The alfa and beta anomers of D- glucose are interconvert in aqueous solution by a process called

Mutarotation

63) Two sugars which differ from one another only in configuration around a single carbon atoms are termed

Epimers

64) Glucose and galactose are an example of an epimeric pair which differ only with respect to

C4

65) Glucose and mannose are the epimers with respect to

C2

66) occurs as an intermediate in the Hexose Monophosphate shunt which is an alternative pathway for glucose oxidation

Erythrose

67) D-2-Deoxyribose is a constituent of.....

DNA

68) D- ribose is a constituent of.....

Nucleic acid RNA and also certain co-enzymes like FAD, NAD and co-enzyme A

69) Glucose is the major metabolic fuel of

Mammals

70) D-glucose occurs as the constituent of

Milk sugar lactose

71) D-glucose is the epimer of.....

Glucose

72) D- glucose is synthesized in the gland

Mammary gland

73) What is the common name of D-fructose?

Fruit sugar

74) D-Fructose is a constituent of

Sucrose

75) D-fructose is a disaccharide and also called.....

Ketohexose

76) is rich in fructose and sperm utilize fructose for energy.

Seminal fluid

77) lead to fructose accumulation.

Hereditary fructose intolerance

78) In body D-Glucuronic acid is formed from.....

Glucose in liver

79) D-Glucuronic acid is the constituent of

Polysaccharides

80) Monosaccharides can be oxidized by relatively mild oxidizing agent such as.....

Cupric Cu^{2+} ions

81) Glucose and other sugar are capable of reducing cupric ion are called.....

Reducing sugars

82) The cuprous ion produced

Red cuprous oxide precipitate

83) Glucose level in the blood and urine is the diagnosis of.....

Diabetes mellitus.

84) Creation of reactive intermediates for the formation of O- and Nglycosidic linkage is the function of.....

Phosphorelation

85) D-glucosamine is a constituent of

Hyaluronic acid

86) D-galactosamine is a constituent of

Chondroitin

87) 2-Deoxy-D-ribose is derived from and is an important constituent of

D-Ribose , DNA

88) L-Fucose is found in the complex.....

Oligosaccharides

89) L-Rhamnose is found in plant

Polysaccharides

90) are formed by condensation between the hydroxyl group of the anomeric carbon of a monosaccharide and the second compound that may or may not be another monosaccharide.

Glycoside

91) If the hemiacetal portion is a glucose then the resulting compound is a.....

Glucoside

92) Sorbitol are used as.....

Artificial sweetner

93) is accumulates in tissues such as the eye lens in diabetes mellitus.

Sorbitol

94) The process of shifting a hydrogen atom from one carbon atom to another to produce enediol is known as.....

Tautomerization

95) When glucose is kept in alkaline solution for several hours, it undergoes isomerization to form.....

D-fructose and D-mannose

96) It is the useful mean of preparing crystalline derivative of sugars called.....

Osazones

97) Osazone are obtained by adding mixture of.....and to a sugar solution and heating in water bath for 45 mins.

Phenylhydrazine hydrochloride, sodium acetate

98)are formed after the solution is cooled slowly.

Crystals

99) First phenyl hydrazone is formed and then reacts with an additional molecule of phenylhydrazine to form the

Osazones

100) When the anomeric carbon is involved in a, that sugar residue is not capable of reducing cupric ions and therefore becomes a non-reducing agent.

Glycosidic bond

101) In describing the disaccharides and polysaccharides, the end of the chain with a free anomeric carbon is commonly called the.....

Reducing end

102) Maltose comes from hydrolysis of starch by

Amylase

103) Maltose is in turn hydrolysed to glucose by

Maltase

104) Maltase is located at intestinal.....

Brush border

105) From nutritional point of view, is easily digestible.

Maltose

106) Various food preparation such as baby and invalid foods, are produced by hydrolysis of grains and contain large amount of

Maltose

107) The lactating mammary gland, the lactose synthesized from glucose by the

Duct epithelium

108) is a specific enzyme which hydrolyses lactose is present in the intestinal brush border.

Lactase

109) In a person, lactase accumulates in the lumen of the small intestine after ingestion of milk.

Lactase deficient

110) The large effect of unabsorbed lactose leads to an influx of fluid into a small intestine

Osmotic

111) What are the clinical symptoms of lactose intolerance?

Abdominal distention

Nausea

Cramping

Pain

A watery diarrhea

112) Sucrose is a

Ordinary table sugar

113) Sucrose is obtained commercially from.....

Cane and beet

114) The configuration of glycosidic linkage is alpha for and beta for

Glucose and Fructose respectively

115) Sucrose lacks a group in contrast with most other sugar.

Reducing group

116) Sucrose is a non reducing sugar and does not exhibit

Mutarotation

117) Sucrose is dextrorotatory but its hydrolytic products are

Levorotatory

118) Fructose has a levorotation greater than the dextrorotation of

Glucose

119) As the hydrolytic products invert the rotation, the resulting mixture is called as and the process is called

Invert sugar , Inversion

120) is present in intestinal brush border like lactase and maltase.

Sucrase

121) is largely invert sugar.

Honey

122) is present for the greater sweetness of honey.

Fructose

123) Two or more monosaccharides are joined together to form

Oligosaccharides

124) Monosaccharides are joined together through

Glycosidic bond

125) most are not digested by human enzymes.

Oligosaccharides

126) Integral membrane proteins contain covalently attached carbohydrates and oligosaccharides unit on their face

Extracellular

127) Many secreted proteins such as and coagulation factors contain oligosaccharide units.

Antibodies

128) The oligosaccharides participate in and

Molecular targeting

Cell to cell recognition

129) mark the passage of time and determine when the proteins should be taken out of circulation.

Oligosaccharides

130) The human ABO blood groups illustrate the effect of

Glycosyl transferases

131) Carbohydrates are attached to glycoproteins and glycolipids on the surfaces of

Red blood cells

132) For one type of blood group three different structures such as , and should be present.

A,B,O

133) These structures (A,B,O) have in common an oligosaccharide foundation called the

O antigen (Sometime H antigen)

134) The A and B antigen are different from O antigen by the addition of one extra

Monosaccharides