

الطبيب والجراحة



لبننة



1- The precursor amino acid of adrenaline is ____? :

- a. Histidine
- b. Tyrosine
- c. Glutamate
- d. Tryptophan
- e. Alanine

2- The bonding of unit molecules to produce a polysaccharide is called _? :

- a. condensation
- b. translation
- c. cellular respiration
- d. hydrolysis
- e. degradation

3- A solution with pH = 5 is ____ than a solution with pH = 7?

- a. 2 times more basic
- b. 10 times more basic
- C. 10 times more acidic
- d. 100 times more acidic e. 1000 times more basic

4- The amino acid which contains a free sulfhydryl group (-SH) in its side chain "R group" is ___?

- a. Cysteine b. Leucine c. Methionine d. Tyrosine
- e. Cystine

5- For solutions and buffers, choose the WRONG statement?

- a buffer is a solution with a constant pH
- b. solutions made up of solvents and solutes
- C. solutions are non-homogenous mixtures
- d. all buffers are solutions

e. in solutions, the solvents can be gases

6- Which one of the following solutions has stronger acidity?

a. $H = 10^7$

b. $pH = 9$

c. $pH = 6$

d. $pH = 10^4$

e. $pH = 8$

7- In an a helix, choose the CORRECT statement?

a. side chain residues point up and down the axis of the helix

b. the helix is right-handed

c. there are five residues per helical turn

d. the oxygen of the carbonyl carbon in a peptide bond points out toward the exterior of the helix

e. there are usually many proline residues present

8- In an Alpha-turn, the end residues are separated by peptide bonds ?

- a. two b. one C. five d. three e. four

9- Which of the following has high helix-forming propensities?

- a. glycine b. proline c. alanine d. tryptophan
e. tyrosine

10- The functional group - NH₂ is a/an

- a. amino group b. phosphate group
c. hydroxyl group d. carbonyl group
e. carboxyl group

11- There is an overlapping between biochemistry

and one of the following subjects of science?

- a. Pharmacology b. Toxicology c. Physiology
- d. Biology e. Pathology

12- Which one of the following compounds is optically active?

- a. L-glycine
- b. D-methionine
- c. B-alanine
- d. GABA
- e. cystine

13- In an Alpha-turn, the end residues are separated by peptide bonds?

- a. two b. one C. five d. three e. four

14- The bonding of unit molecules to produce a polypeptide is called ?

- a. hydrolysis
- b. translation
- c. cellular respiration
- d. Dehydration synthesis
- e. degradation

15- The amino acids: lysine, alanine, glutamic acid and selenocysteine share one common feature from the following?

- a. Standard amino acids
- b. Non-standard amino acids
- c. Proteinogenic amino acids
- d. Non-proteinogenic amino acids with protein role
- e. Non-proteinogenic amino acids with non-protein role

16- The one-letter code of amino acids sequence: V-N-L-K-Y-W-W-D-A-0 matches one of the following three-letter code of amino acids sequence?

- a. Val-Asn-Leu-Lys-Tyr-Trp-Trp-Asp-Ala-Gln
- b. Val-Asp-Lys-Leu-Tyr-Trp-Trp-Asn Ala-Glu
- c. Pro-Asp-Lys-Leu-Tyr-Trp-Trp-Asn-Ala-Glu
- d. Val-Asn-Leu-Lys-Tyr-Trp-Trp-Asp-Ala-Glu
- e. Val-Asn-Leu-Lys-Tyr-Trp-Trp-Asn-Ala-Gin

17- The molecular formula for glycine is $C_2H_5O_2N$. What would be the molecular formula for a linear oligomer made by linking ten glycine molecules together by condensation synthesis?

- a. $C_{20}H_{50}O_{20}N_{10}$
- b. $C_{20}H_{32}O_{11}N_{10}$
- c. $C_{20}H_{40}O_{10}N_{10}$
- d. $C_{20}H_{68}O_{29}N_{10}$

e. C22 H68 O29 N10

18- One of the followings is a calcium sensor subunit :

a. Tnl

b. TnC

C. myosin head

d. TnT

e. tropomyosin

19- The sugar found in RNA is :

a. Deoxyribose b. Ribose c. Ribulose

d. Erythrose e. Sucrose

20- There are several levels of protein structure, the most complex of which is ?

a. primary b. secondary c. tertiary d. quaternary

e. alpha helix

21- In the formation of a macromolecule, what type of bond would join two monosaccharide's subunits?

- a. peptide bond
- b. glycosidic bond
- C. phosphodiester bond
- d. ionic bond
- e. hydrogen bond

22- One group of these sciences can lead to the understanding of the basis of biochemistry?

- a. Anatomy, physiology, physics and immunology
- b. Chemistry, pharmacology, biology and pathology
- c. Biology, chemistry, physiology and anatomy
- d. Biology, immunology, anatomy and microbiology

e. Chemistry, pathology, anatomy and pharmacology

23- The amino acid which contains a thioether group in its side chain "R group" is :

- a. cysteine b. leucine c. methionine d. tyrosine
- e. cysteine

24- If you are working in the biochemistry laboratory and a chemical gets into your mouth, you should _____?

- a. Spit it out
- b. Rinse your mouth
- C. Visit a doctor
- d. All the statements are true
- e. Tell your demonstrator

25- If you have a 9M solution of $\text{Al}(\text{OH})_3$, then the normality of this solution is equal to_?

a.3 b. 27 C. 4.5 d. 0.33 e. 1.33

26- Enantiomers are all of the followings EXCEPT?

a. pair of stereoisomers

b. optically active

c. chiral molecules

d. mirror images

e. superimposable

27- A process by which a protein structure assumes its functional shape or conformation is?

a. denaturing b. folding C. synthesis

d. hydrolysis e. aggregation

28- Which of the following pairs of amino acids might contribute to protein conformation by

forming electrostatic interactions?

- a. Glycine and leucine
- b. Glutamate and lysine
- C. Phenylalanine and tyrosine
- d. Lysine and arginine
- e. Tyrosine and aspartic

29- The pH value at which the molecule is neutral is called :

- a. zwitterion
- b. isoelectric point
- C. ampholyte
- d. anionic
- e. cationic

30- For 3N solution of H_2SO_4 , the Molarity of this?

- a.6

- b. 1.5
- c. 0.67
- d. 0.75
- e. 3

31- The stronger the acid (choose the correct answer)?

- a. The higher the pKa
- b. The higher the pH
- c. The lower the Ka and pKa
- d. The higher the OH concentration
- e. The higher the Ka

32- Given that $pK_1 = 2.3$, $pK_2 = 9.7$ then the dominant form of leucine at $pH = 6$ is?

- a. Neutral
- b. Positively charged

c. Negatively charged d. Cationic e. Anionic

33- Which one of the followings is the initiation codon?

a. AUG b. GUA c. UAG d. UGA e. UUA 62-

34- The sugar found in DNA is?

a. Deoxyribose b. Ribose C. Ribulose d. Erythrose
e. Sucrose

35- Which of the following pairs of amino acids might contribute to protein conformation by forming disulfide bond?

a. Cysteine and cysteine
b. Glutamate and lysine
C. Phenylalanine and tyrosine
d. Lysine and arginine

e. Glycine and leucine

36- The..... is an essential amino acid and required for the synthesis of tyrosine?

- a. Arginine b. Lysine C. Tryptophan
- d. Phenylalanine e. Tyrosine

37- For 5N solution of H_2SO_4 , the Molarity of this solution is equal to?

- a. 6
- b. 1.5
- c. 0.67
- d. 0.75
- e. 2.5

38- The neutral form of amino acid is called _?

- a. Zwitterion b. Isoelectric point C. Ampholyte

d. Anionic e. Cationic

39- There are several levels of protein structure, the most simple of which is?

- a. Primary b. Secondary C. Tertiary d. Quaternary
- e. Beta sheet

40- The process of returning a denatured protein structure to its original structure and normal level of biological activity is ____?

- a. Denaturing b. Synthesis C. Renaturation
- d. Hydrolysis e. Aggregation

41- The one-letter code of amino acids

sequence: [M-N-L-H-Y-D-K-Q-A-R] matches one of the following three-letter code of

amino acids sequence?

- a. Met-Asp-Leu-His-Tyr-Asp-Lys-Gin-Ala-Arg

- b. Met-Asn-Leu-His-Tyr-Asn-Lys-Gln-Ala-Arg
- c. Met-Asn-Lys-His-Tyr-Asp-Leu-Gln-Ala-Arg
- d. Met-Asn-Leu-His-Tyr-Asp-Lys-Gln-Ala-Arg
- e. Met-Asn-Leu-His-Trp-Asp-Lys-Gln-Ala-Arg

42- Suppose that the acid (CH_3COOH) has a $\text{pK}_a = 7.76$ was placed in a solution that has a $\text{pH} = 4.25$, the dominant form of this acid in the solution will be?

- a. CH_3COOH
- b. CH_3COOH_2
- c. CH_3CH^+
- d. CH_3COO^-
- e. CH_3CO^-

43- What should you maintain in your lab work

area?

- a. A messy work space
- b. A clean and tidy work space
- c. Chemicals spread all around you
- d. Lots of food and drink
- e. Use cell and head phones

44- Regarding pH, pKa and Ka, choose the correct answer?

- a. The higher the pH the stronger the acid
- b. The higher the pKa the stronger the acid
- c. For acids, at pH higher than pKa more base than acid
- d. At pH lower than pKa more dissociation to acids
- e. No relation between strength of acid and Ka

45- The molecular formula for glycine is $C_2H_5O_2N$.

What would be the molecular formula for a linear oligomer made by linking five glycine molecules together by condensation synthesis?

a. C₁₀ H₂₅ O₁₀ N₅

b. C₁₀ H₁₇ O₈ N₅

c. C₁₀ H₁₈ O₁₀ N₅

d. C₁₀ H₂₉ O₁₉ N₅

e. C₁₀ H₁₇ O₆ N₅

46- The amino acids: pyrrolysine, n-formyl methionine and selenocysteine share one common feature from the followings?

a. Standard amino acids and proteinogenic

b. Non-standard amino acids and non-proteinogenic

c. Non-proteinogenic amino acids with protein role

d. Non-proteinogenic amino acids with non-protein role.

e. Proteinogenic amino acids added to polypeptide chain by unique mechanism

47- If you have 8M solution of $\text{Ca}(\text{OH})_2$, the Normality of this solution is equal to...?

a. 4 b. 16 c. 0.25 d. 1.25 e.

48- For the peptide bond, choose the INCORRECT answer?

a. It is a Trans bond

b. It is a Cis bond

c. It is rigid and planar

d. It is a covalent bond

e. It has a partial double bond character

49- For Myoglobin, choose the WRONG statement?

a. Myoglobin Can't carry CO_2

- b. Myoglobin O₂ affinity is higher than hemoglobin O₂ affinity
- C. Myoglobin has cooperativity of O₂ binding
- d. Myoglobin has No quaternary structure
- e. Myoglobin is found in muscles

50- In an alpha helix, choose the CORRECT statement?

- a. There are usually many Glycine residues present
- b. Side chain residues point up and down the axis of the helix
- C. The helix is always left-handed
- d. There are 3.6 residues per helical turn
- e. The oxygen of the carbonyl carbon in a peptide bond points out toward the exterior of the helix

51- One of the followings is a tropomyosin binding subunit?

- a. Elastin b. TnC C. Myosin head d. TnT
- b. kl e. Collagen

52- Which one of the followings prefers to adopt B-strand conformations?

- a. Leucine b. Proline C. Alanine d. Methionine
- e. Tyrosine

53- In a delta-turn, the end residues are separated by ___ peptide bonds?

- a. Two b. One c. Five d. Three e. Four

54- 75% of Myoglobin structure is a-helix in ____ regions?

- a. Seven b. Five c. Six d. Nine e. Eight

55- Given that $pK_1 = 2.3$, $pK_2 = 9.7$ then the dominant form of leucine at $pH = 1$ is?

- a. Zwitterion
- b. Neutral
- c. Negatively charged
- d. Cationic
- e. Anionic

56- The functional group - OH is a/an?

- a. amino group
- b. phosphate group
- c. hydroxyl group
- d. carbonyl group
- e. carboxyl group

57 - In the formation of a macromolecule, what type of bond would join two amino acids subunits?

- a. Peptide bond
- b. Glycosidic bond
- c. Phosphodiester bond
- d. Ionic bond
- e. Hydrogen bond

58- For solutions and buffers, choose the **WRONG** statement?

- a. A buffer is a solution with a constant pH

- b. Solutions made up of solvents and solutes
- C. Solutions are homogenous mixtures
- d. All solutions are buffers
- e. In solutions, the solvents can be gases

59- Enantiomers are one of the followings?

- a. Pair of constitutional isomers
- b. Optically active
- C. Achiral molecules
- d. Not always mirror images
- e. Superimposable

60- The precursor amino acid of adrenaline is ___?

- a. Histidine b. Tyrosine C. Glutamate d. Tryptophan
- e. Alanine

61- The bonding of unit molecules to produce a polysaccharide is called _?

- a. condensation
- b. translation
- C. cellular respiration
- d. hydrolysis
- e. degradation

62- Choose the correct statement Select one:

- a. myosin is a tetramer protein
- b. tropomyosin protein binds head to tail with actin thin filament
- C. troponin complex contains five subunits
- d. myoglobin protein has the quaternary structure level
- e. the heavy chain of myosin contains four

domains

63-The glucose is the main energy substrate in?

Select one:

- a. Brain cells
- b. Skeletal muscles
- c. Liver cells
- d. Heart cells
- e. Kidney cells

64-If the OH group at ONLY one chiral carbon in the linear structure of monosaccharides is located on the right or the left, then the resulting stereoisomer is assigned as? Select one:

- a. L-sugar
- b. D-sugar

- c. Epimer
- d. α -sugar
- e. β -sugar

65 - $C_6H_{12}O_6$ is the molecular formula of all of the following sugars EXCEPT? Select one:

- a. Glucose
- b. Fructose
- c. Galactose
- d. Mannose
- e. Ribose

66- After the cyclic sugar formation, the carbonyl carbon will be converted to? Select one:

- a. anomeric carbon
- b. achiral carbon
- c. alcoholic carbon

d. carboxylic acid

e. ketonic group

67- One of the following is not correct regarding cellobiose? Select one

a. It is a reducing sugar

b. This disaccharide results from degradation of cellulose

c. It consists of two β -glucose units

d. The monomers in cellobiose are found in the α -configuration and as cyclic pyranose rings

e. The glucose units are joined together by α -1,4 glycosidic bond

68-Many factors affect calcium absorption, Which of the following carbohydrate is effective in promoting the calcium absorption? Select one:

a. Sucrose

b. Maltose

C. Lactose

d. Xylose

e. Galactose

69- One of the following compounds is not considered as modified sugar?

Select one:

a. glucuronic acid

b.glycerol

C. deoxyribose

d. glyceraldehyde

e. glucosamine

70-This polysaccharide is hetero, natural, linear and mainly found in mast cells?

Select one:

- a. Glycogen
- b. Hyaluronic acid
- c. Dermatan sulphate
- d. Heparin
- e. Chitin

71- Regarding Lactose Intolerance, one of the following is correct?

Select one:

- a. It is caused by deficiency of the sugar lactose in milk
- b. It has symptoms like constipation and fever
- c. due to deficiency of lactase enzyme, the lactose found in milk will be absorbed from the wall of small intestine intact
- d. GIT disturbances are resulted from undegraded lactose reaching the colon intact

e. Small babies are given the milk formula AR

72-Enantiomers are all of the followings EXCEPT?

a. pair of stereoisomers

b. optically active

c. chiral molecules

d. mirror images

e, superimposable

73- The bonding of unit molecules to produce a polysaccharide is called

a a, condensation

b. b. translation

c. cellular respiration

d. hydrolysis

e. degradation

1	B	11	A	21	B
2	A	12	E	22	
3	D	13	E	23	A
4	A	14	D	24	D
5		15	C	25	
6		16	A	26	E
7	B	17		27	B
8	E	18	B	28	
9	C	19	B	29	B
10	9	20	D	30	

31	E	42		53	B
32	A	43	B	54	E
33	A	44		55	D
34	A	45		56	C
35	A	46	E	57	A
36	A	47		58	
37		48	B	59	B
38	A	49	B	60	B
39	A	50	D	61	A
40	C	51	D	62	B
41	D	52	E	63	A

64	C
65	E
66	A
67	E
68	C
69	D
70	D
71	D
72	E
73	A5