

Biochemistry

Midterm EXAM

WATEEN BATCH

2020

إعداد:



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

3- In enzyme chemistry, the active site concept means that? :

- a. There may be a covalent bond between enzyme and substrate
- b. Functional groups on the enzyme participate directly in the reaction
- C. All enzymes are having the flexible model of the active site
- d. For all enzymes, no catalysis in the absence of cofactors
- e. All enzymes are having the rigid model of the active site

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- d. For all enzymes, no catalysis in the absence of cofactors
- e. All enzymes are having the rigid model of the active site

5- 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

6- A plot of enzyme activity (y-axis) versus substrate concentration (x-axis) with other variables constant is a?:

- a. Straight line with an upward slope.
- b. Line parallel to the y-axis
- C. An upward line slope followed by a downward slope.
- d. Straight horizontal line.
- e. Line with an upward slope and a long flat top.

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

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

8- In hemoglobin, alpha chain lacks the..?

- a. B helix
- b. H helix
- C. D helix
- d. F helix
- e. C helix

9- If one continues to increase the temperature in an enzyme-catalysed reaction, the rate of the reaction?

- a. Does not change.
- b. Increases and then levels off.
- c. Decreases and then levels off.
- d. Increases and then decreases rapidly.
- e. Decreases and then increases rapidly.

10- Which of the followings is not true regarding Ninhydrin test?

- a. It is used to detect free amino acid and proteins
- b. All the amino acids give the same results on reaction with Ninhydrin
- C. This reaction provides an extremely sensitive test for amino acids
- d. Amino acids react with ninhydrin at pH-4
- e. It requires Boiling over a water bath for 2-5 minutes

11- LDH1 and LDH2 isoenzymes of lactate dehydrogenase enzyme are elevated in?

- a. Myocardial infarction
- b. Liver disease
- C. Kidney disease
- d. Brain disease
- e. Lung diseases

12- All of the following are not ways of utilizing energy produced by catabolic pathways EXCEPT?:

- a. Cardiac muscle contractility but not in waste disposal
- b. Nervous tissues functions but not in muscles contraction
- c. Synthesizing macromolecules needed for the cellular activities
- d. Removal of catabolites but not in cardiac muscle contractility
- e. Synthesizing the macromolecules but not in neuronal functions

13- 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 non-homogenous mixtures
- d. all buffers are solutions
- e. in solutions, the solvents can be gases

14- Different isoenzymes of an enzyme have the same?

- a. Amino acid sequence
- b. Michaelis constant
- c. Catalytic function
- d. Tissues origin
- e. Effect of activators and inhibitors

15- 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

16- 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

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

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

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

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

19- In hemoglobin, Beta chain is shorter than the Myoglobin chain,because __ segment is shorter?

- a. B helix
- b. H helix
- c. D helix
- d. F helix
- e. C helix

20- For the peptide bond, choose the CORRECT answer?

- a. it is a non-covalent bond
- b. it is a very weak bond
- C.it is shorter than a single bond
- d. it is a Cis bond
- e.it has a double bond character

21- The following biomarkers can be used for early diagnosis, monitoring the recovery of the disease and assessing the response to therapy, RESPECTIVELY?

- a. Creatine kinase, thyroid stimulating hormone and alanine transaminase
- b. Carcinoembryonic antigen, alanine transaminase and thyroid stimulating hormone
- c. Alanine transaminase, thyroid stimulating hormone and creatine kinase
- d. Thyroid stimulating hormone, alanine transaminase and carcinoembryonic antigen
- e. Thyroid stimulating hormone, carcinoembryonic antigen and alanine transaminase

22- If the substrate concentration is much below the K_m of the enzyme, the velocity of the reaction is?

- a. Directly proportional to substrate concentration
- b. Not affected by enzyme concentration
- c. Nearly equal to V_{max}
- d. Inversely proportional to substrate concentration
- e. Nearly equals to $\frac{1}{2} V_{max}$

23- The functional group - NH_2 is a/an

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

24- There is an overlapping between biochemistry and one of the following subjects of science?

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

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

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

26- For the binding behavior of hemoglobin, choose the INCORRECT answer?

- a. Hb has a lower affinity for O₂ than Mb
- b. The T-state is also known as the "tense" state and it has a high-binding affinity to oxygen
- c. Hb binds O₂ in a positive cooperative manner, which enhances the O₂ transport
- d. Upon oxygenation, the Fe atom is moved into the porphyrin plane
- e. Upon oxygenation, the quaternary structure of Hb changes markedly from (T) to the (R) form

27- Why does pH affect enzyme activity?

- a. Changes in pH affect the concentration of the coenzyme
- b. Changes in pH affect the concentration of enzyme
- c. Changes in pH affect the concentration of substrate
- d. Changes in pH affect the enzyme optimum temperature
- e. Changes in pH affect the shape of the enzyme active site

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

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

29- One of these sets of enzymes can help as biomarkers in diagnosis of myocardial infarction?

- a. LDH1 and CK-BB
- b. LDH2 and CK-MM
- c. LDH3 and CK-MB
- d. LDH5 and CK-MB
- e. LDH2 and CK-MB

30- Regarding anemia, choose the INCORRECT answer?

- a. it is an autosomal recessive disease
- b. The shape of the red cells is very irregular
- c. Patients symptoms include Cough, fever and headache

- d. amino acid sequence is -Val-His-Leu- Thr-Pro-Val-Glu-Lys
- e. it is caused by a point mutation in the hemoglobin alpha gene

31- Regarding the Tumour suppressor protein 53, choose the CORRECT answer?

- a. It can induce growth arrest by holding the cell cycle at the G2/S regulation point
- b. P53 cannot initiate apoptosis
- c. is a tumour suppressor protein that in humans is encoded by the TP53 gene
- d. More than 50 percent of human tumours contain a mutation or deletion of the P53 gene
- e. The P53 gene cannot be damaged by mutagens

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

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

33- 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

34- 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

35- Why does the rate of an enzyme-catalysed reaction increase as temperature is raised from 0 to 37 °C?:

- a. Enzyme and substrate molecules have more kinetic energy to get the transition state
- b. The shape of the active site changes to be suitable for binding substrate
- c. The shape of the substrate binding site changes at high temperature
- d. Enzymes are denatured at high temperature
- e. Enzyme substrate complex will take longer time to be in the transition state

36- 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. $C_{22}H_{68}O_{29}N_{10}$

37- One of the followings is a calcium sensor subunit

- a. Tnl
- b. TnC
- c. myosin head
- d. TnT
- e. tropomyosin

38- Regarding the mad cow disease, choose the CORRECT answer?

- a. Prion is an infectious protein that is similar to bacteria
- b. the disease is caused by beta sheets to be converted into alpha-helices
- c. the infectious agent in BSE is believed to be a specific type of folded protein called P53
- d. the disease is a fatal neurodegenerative disease in cattle
- e. mad cow disease is caused by a spongy degeneration in the skeletal and cardiac muscles

39- The sugar found in RNA is

- a. Deoxyribose
- b. Ribose
- c. Ribulose
- d. Erythrose
- e. Sucrose

40- What is the application of Bradford assay?

- a. Isolation of DNA
- b. Determination of protein concentration
- c. Protein purification
- d. Separation of proteins
- e. Precipitation of proteins

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

- a. primary
- b. secondary
- c. tertiary
- d. quaternary
- e. alpha helix

42- For Ligases enzymes?

- a. They catalyse oxidation/reduction reactions
- b. They transfer a functional group
- c. They catalyse the hydrolysis of various bonds
- d. They catalyse isomerization changes within a single molecule
- e. They join two molecules with covalent bonds

43- 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

44- 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

45- A plot of enzyme activity (y-axis) versus pH (x-axis) with other variables constant is a?

- a. Straight line with an upward slope.
- b. Line with an upward slope and a long flat top
- c. S shaped line
- d. An upward line slope followed by a downward slope
- e. Straight horizontal line

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

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

47- 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

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

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

49- Enantiomers are all of the followings EXCEPT?

- a. pair of stereoisomers
- b. optically active
- c. chiral molecules
- d. mirror images
- e. superimposable

50- The "lock and key" model of enzyme action illustrates that a particular enzyme molecule?

- a. Forms a permanent enzyme- substrate complex
- b. May be destroyed and resynthesized several times
- c. Interacts with a specific type of substrate molecule
- d. Reacts at identical rates under all conditions
- e. Can allow the binding of substrate molecule whatever its shape

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

- a. denaturing
- b. folding
- c. synthesis
- d. hydrolysis
- e. aggregation

52- 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

53- An uncatalysed reaction requires ___?

- a. A higher activation energy
- b. A lower activation energy
- c. A Balanced activation energy
- d. No activation energy
- e. A similar activation energy as the catalyzed reaction

54- Which of the following wavelengths that absorbance is optimum when Coomassie brilliant blue binds protein?

- a. a. 610 nm
- b. 330 nm
- c. 595 nm d. 730 nm e. 465 nm

55- The pH value at which the molecule is neutral is called

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

56- Active site of an enzyme is ___?

- a. A particular gland that secretes a particular enzyme
- b. A portion of the substrate molecule to which the enzyme molecule attaches
- c. A portion of the enzyme in which the substrate molecule fits
- d. An organ in the body where the enzyme works
- e. A portion of the cell in which the enzyme catalysed reaction takes place

57- For 3N solution of H₂SO₄, the Molarity of this? solution is equal to

- a.6
- b. 1.5
- c. 0.67
- d.0.75
- e.3

58- 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

59- If you added 5 drops of 2% ninhydrine solution to 1 ml of unknown amino acid solution, boiled for 5 minutes. Then the solution turned to a yellow color. The unknown amino acid is suggested to be__?

- a. Glutamic acid
- b. Proline c. Glycine d. Histidine e. Serine

60- 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

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

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

62- Regarding Alzheimer Disease, choose the INCORRECT answer?

- a. the disease is associated with plaques in the gray matter of the brain
- b. the disease is caused by mutations in four genes, situated on chromosomes 1,14, 19, and 21
- c. it is the fourth leading cause of death in adults
- d. In Alzheimer Disease, the misfolded proteins are alpha-amyloid
- e. Some observed symptoms of the disease include a progressive inability to remember facts and events

63- The sugar found in DNA is?

- a. Deoxyribose
- b. Ribose
- c. Ribulose
- d. Erythrose
- e. Sucrose

64- According to the induced fit model of enzyme function, which of the following is CORRECT?

- a. The active site is not flexible.
- b. Some enzymes become denatured when activators bind to the substrate.
- c. The binding of the substrate depends on the shape of the active site.

- d. The binding of the substrate changes the shape of the enzyme slightly.
- e. The active site creates an environment ideal for the reaction.

65- 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

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

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

67- The pipette with a bulged-out portion in the middle is the-----?

- a. Mohr pipette
- b. Pasture pipette
- c. Serological pipette
- d. Volumetric pipette
- e. Micro-pipette

68- For 5N solution of H₂SO₄, the Molarity of this solution is equal to?

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

69- The neutral form of amino acid is called ____?

- a. Zwitterion
- b. Isoelectric point
- c. Ampholyte
- d. Anionic
- e. Cationic

70- Regarding Alzheimer Disease, choose the CORRECT answer?

- a. the disease is caused by mutations in four genes, situated on chromosomes 7,14, 19 and 21
- b. it is the second leading cause of death in adults
- C. the disease is associated with plaques in the gray matter of the brain
- d. In Alzheimer Disease, the misfolded proteins are alpha-amyloid
- e. amyloid hypothesis postulated that alpha-amyloid deposits are the fundamental cause of the disease

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

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

72- 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

73- Many techniques can be used for purification of biomolecules; this one is not of them?

- a. Gas chromatography
- b. Agarose electrophoresis
- C. Thin layer chromatography
- d. SDS-polyacrylamide gel electrophoresis
- e. Mass spectrometry

74- 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

75- Suppose that the acid (CH₃COOH) has a pKa = 7.76 was placed in a solution that has a pH=4.25, the dominant form of this acid in the solution will be?

a. CH₃COOH

b. CH₃COOH₂

c. CH₃CH⁺

d. CH₃COO⁻

e. CH₃CO⁻

76- 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

77- 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

78- The molecular formula for glycine is C₂H₅O₂N. 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

79- The dye used for the colorimetric detection and quantitation of total protein in Bradford method?:

- a. Benedict's reagent
- b. Methylene blue
- c. Coomassie brilliant blue
- d. Ethidium bromide
- e. Gentian violet

80- 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

81- 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. 2

82- For the Tumor suppressor protein 53, choose the INCORRECT answer?

- a. More than 50 percent of human tumor's contain a mutation or deletion of the P53 gene
- b. The P53 gene cannot be damaged by mutagens
- c. It can induce growth arrest by holding the cell cycle at the G2/S regulation point
- d. P53 can initiate apoptosis
- e. is a tumor suppressor protein that in humans is encoded by the TP53 gene

83- 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

84- For Myoglobin, choose the WRONG statement?

- a. Myoglobin Can't carry CO₂
- 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

85- 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

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

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

87- For the binding behavior of hemoglobin, choose the CORRECT answer?

- a. Hb has a higher affinity for O₂ than Mb
- b. The T-state is also known as the "tense" state and it has a high-binding affinity to oxygen
- c. Hb binds O₂ in a positive cooperative manner, which enhances the O₂ transport
- d. Upon oxygenation, the Fe atom is moved out of the porphyrin plane
- e. Upon oxygenation, the quaternary structure of Hb changes markedly from (R) to the (T) form

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

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

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

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

90- 75% of Myoglobin structure is a-helix in ____ regions?

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

91- Which amino acids residues does the Bradford protein assay primarily identify?

- a. All amino acids are identified
- b. Arginine, lysine, and histidine
- c. Basic amino acids
- d. Acidic amino acids
- e. Neutral amino acids

92- 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

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

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

94- 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

95- 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

96- Which of the following is not a way in which enzymes stabilize a transition state?

- a. Covalent catalysis
- b. Metal ion catalysis
- c. General acid-base catalysis
- d. Environmental temperature increase
- e. Catalysis by approximation

97- Regarding anemia, choose the CORRECT answer?

- a. The abnormal HbS clusters together, distorting the RBCs into sickled shapes
- b. It is caused by a point mutation found on chromosome 12p15.5
- C. It is an autosomal dominant disease
- d. The shape of the red cells are very regular
- e. Amino acid sequence is -Val-His-Leu-Thr-Pro-Ala-Glu-Lys-

98- Enantiomers are one of the followings?

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

99- Energy of activation?

- a. Increases enzymatic activity
- b. Decreases enzymatic activity
- C. Minimum amount of energy for the reaction to occur
- d. Maximum amount of energy for the reaction to occur
- e. Not needed for the reaction to occur

100- The precursor amino acid of adrenaline is _____?

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

101- The bonding of unit molecules to produce a polysaccharide is called ____?

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

102- In enzyme chemistry, the active site concept means that?

- a. There may be a covalent bond between enzyme and substrate
- b. Functional groups on the enzyme participate directly in the reaction
- c. All enzymes are having the flexible model of the active site
- d. For all enzymes, no catalysis in the absence of cofactors
- e. All enzymes are having the rigid model of the active site

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

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- d. 100 times more acidic
- e. 1000 times more basic

104- If one continues to increase the temperature in an enzyme-catalysed reaction, the rate of the reaction?:

- a. Does not change.
- b. Increases and then levels off.
- c. Decreases and then levels off.
- d. Increases and then decreases rapidly.
- e. Decreases and then increases rapidly.

105- Which of the followings is not true regarding Ninhydrin test?

- a. It is used to detect free amino acid and proteins
- b. All the amino acids give the same results on reaction with Ninhydrin
- c. This reaction provides an extremely sensitive test for amino acids
- d. Amino acids react with ninhydrin at pH-4
- e. It requires Boiling over a water bath for 2-5 minutes

106- LDH1 and LDH2 isoenzymes of lactate dehydrogenase enzyme are elevated in?

- a. Myocardial infarction
- b. Liver disease
- c. Kidney disease
- d. Brain disease
- e. Lung diseases