ENZYMES

1. The catalytic activity of an enzyme is restricted to its small portion called:

(A) Intermediate **(B)** Above all

(C) Passive site **(D)** Active site

2. An activated enzyme made of polypeptide chain and a co-factor is:

(A) Co-enzyme **(B)** Substrate

(C) Apoenzyme **(D)** Holoenzyme

3. The rate of reaction of enzyme directly depends upon:

(A) Maximum pH level

(B) Amount of enzyme present at a specific time at unlimited substrate concentration

(C) Nature of substrate

(D) Low temperature

4. Koshland in 1959 proposed the modified form of:

(A) Unit membrane model **(B)** Reflective index model

(C) Fluid mosaic model **(D)** Induce fit model

5. The reversible inhibitors usually constitute:

(A) No linkage with enzyme **(B)** Weak linkage with enzyme

(C) Medium linkage **(D)** Strong linkage with enzyme

6. The detachable co-factor of an enzyme (if it is an inorganic ion) is called as:

(A) Activator **(B)** Catalytic

(C) Aqueous medium **(D)** Apoenzyme

7. If the non-protein part is covalently bonded to the protein part of an enzyme, it is called as:

(A) Prosthetic group **(B)** Catalytic

(C) Activator **(D)** Optimum

8. An enzyme with its coenzyme or prosthetic group, removed is called as:

(A) Apoenzyme **(B)** Aqueous medium

(C) Activator **(D)** Prosthetic group

9. The active site of an enzyme is composed of binding site and:

(A) Apoenzyme **(B)** Catalytic site

(C) Prosthetic site **(D)** Substrate site

10. Medium required for Enzymes vigorous activity:

(A) Colloidal **(B)** Transparent

(C) Aqueous **(D)** Gel

11. Every enzyme functions effectively at:

(A) 9.00 pH **(B)** Optimum pH

(C) 2.00 pH **(D)** 7.00 pH

12. Almost all enzymes are:

(A) Fibrous proteins **(B)** Globular proteins

(C) Triangular proteins **(D)** All of the above

13. The optimum pH value for pancreatic lipase is:

(A) 8.00 **(B)** 10.00

(C) 7.00 **(D)** 9.00

14. The enzymes involved in the cellular respiration in eukaryotes are found in:

(A) Chloroplast **(B)** Aqueous medium

(C) Mitochondria **(D)** Nucleoplasm

15. Even traces of enzymes can bring about change in large amount of:

(A) Catalytic **(B)** Activator

(C) Substrate **(D)** Optimum

16. Co-enzymes:

(A) Globular protein **(B)** Oral cavity

(C) Vitamin **(D)** Co-factors

17. Salivary amylase:

(A) Oral cavity **(B)** Co-factors

(C) Vitamin **(D)** Globular protein

18. Metal ions:

(A) Vitamin **(B)** Oral cavity

(C) Globular protein **(D)** Co-factors

19. Amino acids:

(A) Globular protein **(B)** Oral cavity

(C) Chloroplast **(D)** Vitamin

20. Photosynthesis:

(A) Oral cavity **(B)** Vitamin

(C) Globular protein **(D)** Chloroplast

21. Emil Fischer:

(A) Cyanide **(B)** Lock and key model

(C) Temperature **(D)** Specific in action

22. Inhibitors:

(A) Temperature **(B)** Cyanide

(C) Lock and key model **(D)** Specific in action

23. Activation energy:

(A) Temperature **(B)** Cyanide

(C) Lock and key model **(D)** Specific in action

24. Enzymes:

(A) Temperature **(B)** Specific in action

(C) Reversible inhibitors **(D)** Cyanide

25. Competitive:

(A) Reversible inhibitors **(B)** Lock and key model

(C) Specific in action **(D)** Temperature

26. The catalytic activity of an enzyme is restricted to its small portion called:

(A) Active site **(B)** Passive site

(C) Allosteric site **(D)** All Choices are correct

27. An activated enzyme made of polypeptide chain and a co-factor is:

(A) Coenzyme **(B)** Substrate

(C) Apoenzyme **(D)** Holoenzyme

28. Koshland in 1959 proposed:

(A) Fluid mosaic model **(B)** Induce fit model

(C) Lock and key model **(D)** Reflective index model

29. Chemical nature of enzymes is:

(A) Lipids **(B)** Steroids

(C) Proteinacous **(D)** All (A), (B) and (C)

30. Who proposed "lock and key" model to study enzyme-substrate interaction?

(A) Koshland (1959) **(B)** Wilhelm Kuhne (1878)

(C) Fischer (1898) **(D)** None of these

31. In human body the optimum temperature for enzymatic activities is:

(A) 37°C **(B)** 40°C

(C) 25°C **(D)** 30°C

32. Optimum pH value for pepsin is:

(A) 5.5 **(B)** 7.4

(C) 4.1 **(D)** 1.4

33. Competitive inhibitors stop an enzyme from working by:

(A) Changing the shape of the enzyme

(B) Merging with the substrate instead

(C) Blocking the active site of the enzyme

(D) Combining with the product of the reaction

34. The enzymes are sensitive to:

(A) Changes in pH **(B)** Changes in temperature

(C) Both (A) and (B) **(D)** None of these

35. Enzyme B requires Zn^{2+} in order to catalyze the conversion of substrate X. The zinc is best identified as:

(A) Coenzyme **(B)** Activator

(C) Substrate **(D)** Product

36. The enzyme minus its coenzyme is referred to as the:

(A) Iso-enzyme **(B)** Metalloenzyme

(C) Apoenzyme **(D)** All of these

37. 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

38. Consider this reaction. A + B ⟶ C + D + energy.

(A) This reaction is exergonic

(B) An enzyme could still speed the reaction

(C) A and B are reactants; C and D are products

(D) All of these are correct

39. An inhibitor that changes the overall shape and chemistry of an enzyme is known as:

(A) Auto-steric inhibitor **(B)** Competitive inhibitor

(C) Steric inhibitor **(D)** Noncompetitive inhibitor

40. Non-protein components of enzymes are known as:

(A) Coenzymes **(B)** Activators

(C) Cofactors **(D)** All (A), (B) and (C)

41. The reaction below occurs within the cells to prevent the accumulation of hydrogen peroxide. In this reaction, catalase functions as an:

$$2H_2O_2 \xrightarrow{\text{Catalase}} 2H_2O + O_2$$

(A) Enzyme in the breakdown of hydrogen peroxide

(B) Enzyme in the synthesis of hydrogen peroxide

(C) Emulsifier in the digestion of hydrogen peroxide

(D) Indicator in the detection of hydrogen peroxide

42. An enzyme is generally named by adding ———— to the end of the name of the ————.

(A) "-ase". coenzyme **(B)** "-ase". cell in which it is found

(C) "-ose". substrate **(D)** "-ase". substrate

43. The minimum amount of energy needed for a process to occur is called the:

(A) Minimal energy theory **(B)** Process energy

(C) Kinetic energy **(D)** Activation energy

44. A student conducts an experiment to test the efficiency of a certain enzyme. Which would probably not result in a change in the enzyme's efficiency?

(A) Adding an acidic solution to the setup

(B) Adding more substrate but not enzyme

(C) Increasing temperature of solution

(D) All (A), (B) and (C) change enzyme's efficiency

45. Enzymes function as:

(A) Organic catalysts **(B)** Inorganic catalysts

(C) Inhibitors **(D)** All of these

46. A catalyst is a chemical involved in, but not ———— by, a chemical reaction.

(A) Supported **(B)** Changed

(C) Controlled **(D)** All of these

47. Many enzymes function by ———— the activation energy of reactions.

(A) Increasing **(B)** Promoting

(C) Lowering **(D)** Both (A) and (B)

48. An uncatalysed reaction requires a:

(A) Higher activation energy **(B)** Lower activation energy

(C) Balanced activation energy **(D)** All of these

49. The binding of the substrate to the enzyme alters the structure of the enzyme:

(A) Lock and key hypothesis **(B)** Induced fit hypothesis

(C) Fischer's hypothesis **(D)** D.D. Wood's hypothesis

50. They are non-protein organic molecules bound to enzymes near the active site:

(A) Activators **(B)** Coenzymes

(C) Holoenzymes **(D)** All of these

51. The first step in any reaction catalysed by an enzyme is the formation of a specific association between the molecules called:

(A) Enzyme-product complex **(B)** Enzyme-intermediate complex

(C) Enzyme-substrate complex **(D)** None of these

52. The function of competitive inhibitors is defined by their ability to interact or bind to:

(A) The active site of an enzyme **(B)** Regulatory sub-units of an enzyme

(C) Non-competitive inhibitor **(D)** Enzyme cofactors

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

(A) Add more of the enzymes **(B)** Add more substrate

(C) Add an allosteric inhibitor **(D)** Add a non-competitive inhibitor

54. When the final product of a metabolic pathway turn off the first step of metabolic pathway it is:

(A) Positive feed back **(B)** Negative feed back

(C) Competitive feed back **(D)** Both (A) and (C)

55. When the inhibitory chemical, which does not have to resemble the substrate, binds to the enzyme other than at the active site is called:

(A) Noncompetitive Inhibition **(B)** Competitive Inhibition

(C) Uncatalysed reaction **(D)** All (A), (B) and (C)

56. Which one is not attribute of enzyme?

(A) Specific in nature **(B)** Protein in chemistry

(C) Consumed in reaction **(D)** Increases rate of reaction

57. Which one inactivates an enzyme by indirectly changing the shape of the active site of an enzyme?

(A) Non-competitive inhibitor **(B)** Competitive inhibitor

(C) Coenzyme **(D)** Activator

58. The enzymes are classified into:

(A) Five groups **(B)** Three groups

(C) Six groups **(D)** Four groups

59. Non-proteinaceous part of holoenzyme is:

(A) Prosthetic group **(B)** Apoenzyme

(C) Tubulin **(D)** None of these

60. Enzymes are highly specific for a given substrate which is due to the shape of their:

(A) Active site **(B)** Allosteric site

(C) Non-competitive site **(D)** None of these

61. The name enzyme was suggested in 1878 by the German physiologist:

(A) Wilhelm Kuhne **(B)** Koshland

(C) Fischer **(D)** Paul Filder

62. Proteinaceous part of holoenzyme is:

(A) Prosthetic group **(B)** Apoenzyme

(C) Lecithin **(D)** None of these

63. The "lock and key hypothesis" attempts to explain the mechanism of:

(A) Vacuole formation **(B)** Pinocytosis

(C) Sharing of electrons **(D)** Enzyme specificity

64. An enzyme that hydrolyzes protein will not act upon starch. This fact is an indication that enzymes are:

(A) Hydrolytic **(B)** Specific

(C) Catalytic **(D)** Synthetic

65. The site where enzyme catalyzed reaction takes place is called:

(A) Active site **(B)** Allosteric site

(C) Denatures site **(D)** Dead site

66. What is a cofactor?

(A) Inorganic ions **(B)** Organic molecules

(C) Both (A) and (B) **(D)** None of the above

67. Mg^{+2} is an inorganic activator for the enzyme:

(A) Phosophatase **(B)** Carbonic anhydrase

(C) Enterokinase **(D)** Amylase

68. Zn^{+2} is an inorganic activator for enzyme:

(A) Carbonic anhydrase **(B)** Phosophatase

(C) Chymotrypsin **(D)** Maltase

69. Which antibiotic blocks the active site of an enzyme that many bacteria used to make cell-walls?

(A) Amphotericin **(B)** Gentamicin

(C) Penicillin **(D)** Cephalosporin

70. DDT and Parathion are inhibitors of key enzymes in:

(A) Nervous system **(B)** Respiratory system

(C) Digestive system **(D)** Circulatory system

71. At high temperature the rate of enzyme action decreases because the increased heat:

(A) Changes the pH of the system

(B) Alters the active site of the enzyme

(C) Neutralize acids and bases in the system

(D) Increases the concentration of enzymes

72. Which of the following enzymes would digest a fat?

(A) Sucrase **(B)** Protease

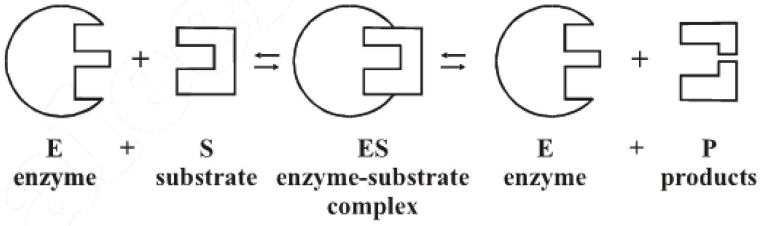
(C) Ligase **(D)** Lipase

73. In the lock and key model of enzyme action, (part of the enzyme that recognizes the substrate is known as the:

(A) Enzyme-substrate complex **(B)** Product

(C) Enzyme-product compl(**(D)** Active site

74. Which model of enzyme action is represented in this diagram?



(A) Fluid mosaic model **(B)** Induce fit model

(C) Lock and key model **(D)** Reflective index model

75. A certain enzyme will hydrolyze egg white but not starch. Which statement best explains this observation?

(A) Starch molecules are too large to be hydrolyzed

(B) Enzyme molecules are specific in their actions

(C) Egg white acts as a coenzyme for hydrolysis

(D) Starch is composed of amino acids

76. At about 0°C, most enzymes are:

(A) Inactive **(B)** Active

(C) Destroyed **(D)** Replicated

77. Vitamins are essential for the survival of organisms because vitamins usually function as:

(A) Substrates **(B)** Nucleic acids

(C) Co-enzymes **(D)** Nucleosides

78. When a molecule binds to an area of an enzyme that is not the active site, and changes the shape of the enzyme so that it no longer can work, this is called:

(A) Denaturation **(B)** Competitive inhibition

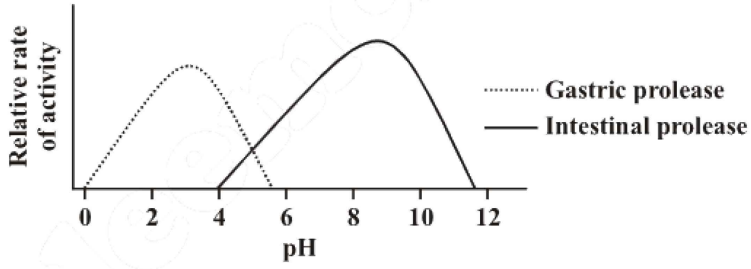
(C) Noncompetitive inhibition **(D)** Substrate delocation

79. What is a coenzyme?

(A) Inorganic ion **(B)** Organic molecule

(C) Both (A) and (B) **(D)** None of these

80. Which statement best expresses the information represented in the graph shown?



(A) The action of enzymes varies with pH

(B) A pH of 7 provides the optimum environment for digestive enzymes

(C) Gastric juice is active at a pH extending from 0 to 12

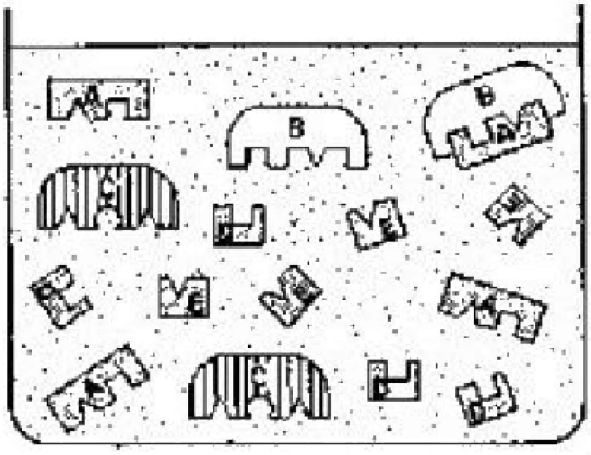
(D) Acids have a pH greater than 7

81. Which type of inhibitor is shown in this diagram?

(A) Competitive **(B)** Non-competitive

(C) Allosteric **(D)** Both (B) and (C)

82. Which enzyme represents an enzyme functioning in this reaction?



(A) E **(B)** C

(C) B **(D)** A

Answers

Sr.	Ans.	Sr.	Ans.	Sr.	Ans.	Sr.	Ans.	Sr.	Ans.
1.	(D)	**2.**	(D)	**3.**	(B)	**4.**	(D)	**5.**	(B)
6.	(A)	**7.**	(A)	**8.**	(A)	**9.**	(B)	**10.**	(C)
11.	(B)	**12.**	(B)	**13.**	(D)	**14.**	(C)	**15.**	(C)
16.	(C)	**17.**	(A)	**18.**	(D)	**19.**	(A)	**20.**	(D)
21.	(B)	**22.**	(B)	**23.**	(A)	**24.**	(B)	**25.**	(A)
26.	(A)	**27.**	(D)	**28.**	(B)	**29.**	(C)	**30.**	(C)
31.	(A)	**32.**	(D)	**33.**	(C)	**34.**	(C)	**35.**	(B)
36.	(C)	**37.**	(C)	**38.**	(D)	**39.**	(D)	**40.**	(D)
41.	(A)	**42.**	(D)	**43.**	(D)	**44.**	(D)	**45.**	(A)
46.	(B)	**47.**	(C)	**48.**	(A)	**49.**	(B)	**50.**	(B)
51.	(C)	**52.**	(A)	**53.**	(A)	**54.**	(B)	**55.**	(A)
56.	(C)	**57.**	(A)	**58.**	(C)	**59.**	(A)	**60.**	(A)
61.	(A)	**62.**	(B)	**63.**	(D)	**64.**	(B)	**65.**	(A)
66.	(C)	**67.**	(A)	**68.**	(A)	**69.**	(C)	**70.**	(A)
71.	(B)	**72.**	(D)	**73.**	(D)	**74.**	(C)	**75.**	(B)
76.	(A)	**77.**	(C)	**78.**	(C)	**79.**	(B)	**80.**	(A)
81.	(D)	**82.**	(C)						