Enzymes

1. True statement regarding active site is ( )

1) Active sites are surface areas on enzymes

2) These are grooves and pockets in the enzymes

3) Active sites are large areas on the enzymes

4) Many active sites are present on the enzymes

2. Enzymes that use ATP for their activity is ( )

1) Kinases 2) Synthetases

3) Transferases . 4) Hydrolases

3. Enzyme required in the reaction NO_3 ------> NO_2 ( )

1) Dehydrogenase 2) Reductase 3) Oxidases 4) Deoxygenases

4. An enzymatic reaction proceeded forward and reached equilibrium status. Substances that can be seen at this stage is/are ( )

1) Only product 2) Product and enzyme.

3) Product, Enzyme and substrate 4) Only enzyme.

5. Third number in the enzyme nomenclature indicates ( )

1) Sub- Sub class 2) Sub Classes 3) Major Classes 4) Serial number

6. Phosphatase enzymes are ( )

1) Addition of phosphate by transfer

2) Removal of phosphate in the absence of H_2O

3) Removal of phosphate in the presence of H_2O

4) Changing the position of phosphate in a molecule.

7. The reaction $CO_2 + H_2O \leftrightarrow H_2CO_3$ requires ( )

1) No enzyme 2) An enzyme

3) Very high temperatures 4) Very low temperatures

8. **Assertion (A):In thermophilic organisms metabolic activities take place even at 80^o C – 90^o C of temperatures** ( )

Reason(R): Enzymes in thermophilic are stable and retain their catalytic power at these temperatures

1) Both A and R are correct and R is the correct explanation of A.

2) Both A and R are correct but R is not the correct explanation of A.

3) A is true, R is false

4) A is false, R is true.

9. **True statement regarding enzyme** ( )

I: All proteins are enzymes

II: Only some enzymes are proteins

III: Enzymes are active only in their tertiary structure

IV: Enzymes are organic catalysts

1) I, II 2) II, III 3) Only III 4) III, IV

10. **Metallic co-factor in carboxypeptidase is** ( )

1) Fe 2) Mn 3) Zn 4) Mg

11. **Isocitrate + $NAD^+ \leftrightarrow$ α ketoglutaric acid + NADH + H^+ + CO_2. The main class number of enzyme that catalyzes this reaction is** ( )

1. 2 **2. 3** **3. 4** **4. 1**

12. **Rate of the enzymatic reaction is** ( )

1) Difference between initial velocity and final velocity

2) Amount of product formed per unit time

3) Amount of product formed at any time

4) The ratio between subject and product at any time

13. **Protein part in a holo enzyme is** ( )

1) Apoenzyme 2) Simple enzyme

3) Conjugated enzyme 4) Inducive enzyme

14. **Assertion A: All enzymes are proteins and all proteins are not enzymes.** ( )

Reason R: Many proteins are structural proteins.

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3) A is true, R is false

4) A is false, R is true.

15. **Co-enzymes nature is** ( )

1) Organic 2) In organic 3) Proteins 4) Organic or Inorganic

16. **True statement regarding enzymes** ( )

I: They are thermo stable.

II: Enzymes can start the reaction.

III: Enzymes can be inhibited.

IV. Hydrogen - Ion concentration controls enzymatic activity.

1) I & II 2) II, III & IV 3) III & IV 4) Only III

17. A multistep chemical reaction, each step catalyzed by an enzyme, is referred as ( )

1) Serial catalysis 2) Multistep catalysis

3) Feedback inhibition 4) Metabolic pathway

18. Heam moiety of peroxidase can be regarded as ( )

1) Prosthetic group 2) Co-enzyme 3) Metallic cofactor 4) Simple enzyme

19. Assertion (A): Enzymes are highly specific in reaction. ( )

Reason (R): Active sites are specific for a substrate.

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2) Both A and R are correct but R is not the correct explanation of A.

3) A is true, R is false

4) A is false, R is true.

20. An enzyme with IUB number EC 4.1.2.1 belongs to ( )

1) Hydrolases 2) Isomerases 3) Lyases 4) Oxidoreductases

21. Enzymes which breaks bonds with addition of water ( )

1) Kinases 2) Synthetases 3) Transferases. 4) Hydrolases

22. X + Y + ATP↔ X—Y + ADP +Pi . This reaction is catalyzed by enzymes that belong to ( )

1. Kinases 2. Hydolases 3. Ligases 4. Isomerases

23. False statement regarding enzymatic reaction ( )

1) In all enzymatic reactions an intermediate 'ES' complex is formed

2) Substrate is bound to the enzyme active site before forming into product

3) Product can be unstable after formation

4) Chemical bonds may form or break down in the substrate during 'ES' complex.

24. The approximate inverse measures of the affinity of the enzyme for a given substrate is called as ( )

1. Activation energy of an enzyme 2. Rate of the enzymatic reaction

3. Michaelis-Menton constant 4.Feedback inhibition

25. K_m value is a measure of ( )

1) Rate of the reaction 2) Substrate concentration

3) [ES] complex formation 4) Decrease in enzyme activity

26. Substrate for Transaminase enzyme is ( )

1) Glucose 2) Aspartic acid 3) Protein 4) Lipids

27. In the Enzyme reactions when the free enzyme molecules are not available, thenthe rate of the reaction is ( )

1) Half of maximal value 2) Maximum 3) At equilibrium 4) Forward reaction is fast

28. Assertion (A): At low temperatures fruits can be preserved ( )

Reason(R): At low temperatures enzymes denatured

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3) A is true, R is false

4) A is false, R is true.

29. False statement regarding enzymes is ( )

1. Enzymes never changes the equilibrium of a reaction
2. Rate of reaction varies from enzyme to enzyme
3. Rate of the reaction of an enzyme varies from time to time
4. Enzyme cannot start the reaction

30. When the rate of the reaction is half of its maximal value ( )

1. Substrate concentration equal to Km value 2. [ES] Complex is maximum
3. Enzyme concentration is insufficient 4. Product is not formed yet

31. In a reaction in the presence of an enzyme ( )

1. Energy for the reaction is reduced 2. Free energy of the substrates increase
3. Activation energy decreases 4. Energy of products decrease

32. Lock and key hypothesis is proposed by ( )

1. Daniel E.Koshland 2. Emil Fischer
3. Michaelis -Menten 4. Louis Pasteur

33. Substances structurally similar to substrates act as ( )

1. Non- competitive inhibitor 2. Allosteric modulators
3. Isoenzymes 4. Competitive inhibitors

34. Activity of Succinic dehydrogenase can be inhibited in the presence of ( )

1. Malonic acid 2. Succinic acid
3. Fumaric acid 4. Citric acid

35. In an enzymatic reaction toxins similar to substrates attaches to ( )

1. Substrates
2. Active sites of enzymes
3. Products
4. Sites other than active sites on enzymes

36. Glucose-6- phosphor tranferase enzyme code is ( )

1. (EC) 2.7.1.2
2. . (EC) 2.5.1.6
3. . (EC) 2.1.7.2
4. . (EC) 4.7.1.2

37. Assertion (A): In the presence of an enzyme rate of the reaction increases ( )

Reason: (R): Enzymes decreases energy of activation

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3) A is true, R is false
4) A is false, R is true

38. Lock & Key hypothesis explains ( )

1. Rate of the enzymatic reactions
2. Saturation of enzymatic reactions
3. Formation of [ES] complex
4. All the above

39. Drugs in curing bacterial infections act as ( )

1. Competitive inhibitors
2. Allosteric modulators
3. Non-competitive inhibitors
4. Enzymes

40. Enzymes that help in addition or removal of groups to form double bonds can be grouped in ( )

1. Lyases
2. Hydrolases
3. Isomerases
4. Synthetases

Enzymes --Key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
2	**2**	**2**	**3**	**1**	**3**	**1**	**1**	**4**	**3**	**4**	**2**	**1**	**1**	**1**	**3**	**4**	**1**	**1**	**3**
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
4	**3**	**3**	**3**	**2**	**2**	**2**	**3**	**3**	**1**	**3**	**2**	**4**	**1**	**2**	**1**	**1**	**4**	**1**	**1**