**I M.Sc., BIOCHEMISTRY – MCQ**

**Unit-I : Dr.R.Balasubramanian**

1. An atom of sodium has an atomic number of 11 and a mass number of 23. Which of the following statements is correct?
2. An atom of sodium has 11 protons, 11 electrons, and 11 neutrons.
3. An atom of sodium has 11 protons, 12 electrons, and 11 neutrons.
4. An atom of sodium has 11 protons, 11 electrons, and 12 neutrons.
5. An atom of sodium has 11 protons, 12 electrons, and 12 neutrons.
6. An atom of phosphorus has an atomic number of 15 and a mass number of 31. How many neutrons does it contain?
7. 15
8. 16
9. 31
10. 33
11. What is the chemical symbol for magnesium?
12. Ma
13. Mn
14. M
15. Mg
16. Complete the following sentence: 'Different isotopes of the same element have...'

` a) the same number of protons, but differing numbers of neutrons and electrons

b) the same number of neutrons, but differing numbers of protons and electrons

c) the same number of protons and neutrons, but differing numbers of electrons

d) the same number of protons and electrons, but differing numbers of neutrons

1. Shell three contains how many sub-shells?
2. 1
3. 2
4. 3
5. 4
6. The 3d subshell can hold a maximum of how many electrons?
7. 1
8. 2
9. 6
10. 10
11. Calcium has an atomic number of 20. What is its electronic configuration?
12. 1s2 2s2 2p6
13. 1s2 2s2 2p6 3s2 3p6 3d2
14. 1s2 2s2 2p6 3s2 3p6 4s2
15. 1s2 2s2 2p6 2d2 3s2 3p6
16. Which of the following places the atomic subshells in the correct order of relative energy, starting with the subshell of lowest energy?
17. d, p, s
18. s, d, p
19. s, p, d
20. p, s, d
21. There are how many naturally-occurring isotopes of oxygen?
22. 1
23. 2
24. 3
25. 4
26. Which of the following denotes the mass of a single atom of a particular isotope?
27. Its atomic number
28. Its atomic weight
29. Its atomic mass
30. Its relative atomic mass

11. The identity of a chemical element is determined by which of the following?

1. The number of protons it possesses
2. The number of neutrons it possesses
3. The number of electrons it possesses
4. The sum of the number of protons and neutrons it possesses
5. The sum of the number of protons and electrons it possesses
6. How many gm moles oxygen are there in 88 g carbon di oxide?  
   a) 1  
   b) 2  
   c) 3  
   d) 4
7. What is the percent water in CuSO4.5H2O?  
   a) 12  
   b) 14  
   c) 16  
   d) 18
8. What is the average molecular weight of a gas containing 20% N2 (molecular wt. = 28) and 80% SO2 (molecular wt. = 64)?  
   a) 28.4  
   b) 56.8  
   c) 24.4  
   d) 48.8
9. Two statements are given as  
   (1) When a percentage of fractions is given for gas, it is assumed that it refers to a mole fraction  
   (2) When a percentage of fractions is given for liquid or solid, it is assumed that it refers to the weight fraction  
   True statements are  
   a) 1  
   b) 2  
   c) Both 1 and 2  
   d) Neither 1 nor 2
10. A bucket contains 10 kg of water and 10 kg of NaOH. The respective mass fraction of water and the mole fraction of NaOH are  
    a) 0.5 and 0.31  
    b) 1.0 and 0.62  
    c) 0.5 and 0.69  
    d) 1.0 and 0.50
11. What is the formula for a solid compound that contains 42.11% C, 51.46% O, and 6.43% H and having molecular weight about 341.  
    a) C10 O12H29  
    b) C11O13 H  
    c) C12O11H22  
    d) C12O10H37
12. If in a compound the moles of consisting atoms are doubled then the mole fraction of a particular atom will be  
    a) Double  
    b) Half  
    c) Remain same  
    d) None of the mentioned
13. Select the correct statement  
    a) 1 mole of SO2 and 64 g of Ethyl Chloride have same number of moles  
    b) 1 mole of SO2 and 64 g of Ethyl Chloride don`t have same molecular weights  
    c) Both a and b  
    d) Neither a nor b
14. What is a mole?  
    a) A mole is found in a certain number of cm3 of one substance or another.  
    b) A mole is the sum of atomic weights.  
    c) A mole is the number of molecules in one gram of a substance.  
    d) None of the mentioned
15. The Atoms of solid Ar are held together by
16. Van der Waals forces
17. Hydrogen bonds
18. Ionic bonds
19. Hydrophobic forces
20. Which of the following has the weakest bond?
21. Ice
22. Diamond
23. KCl
24. Neon
25. Which of the following is the weakest bond?
26. Ionic bonds
27. Metallic bonds
28. Covalent bonds
29. Van der Waals forces
30. Which of the following has both covalent and ionic bonds?
31. NaOH
32. KCl
33. CH4
34. SO2
35. In a crystal, covalent molecules are held together by
36. Dipole-dipole attraction
37. Hydrogen bonds
38. Van der Waals attraction
39. Electrostatic attraction
40. Which of the compounds shows the highest lattice energy?
41. CsF
42. KF
43. RbF
44. NaF
45. Metallic bonds do not have
46. Highly directed bonds
47. Mobile valence electrons
48. Delocalised electrons
49. Overlapping valence orbitals
50. Formation of a chemical bond results in
51. Increase in energy
52. Decrease in energy
53. Both
54. None of the above
55. Small discrete molecules are present in which of the substances?
56. Copper
57. CO
58. Dry ice
59. Graphite
60. Particles in an ionic crystal are held together by
61. Nuclear forces
62. Electrons
63. Covalent bonds
64. Electrostatic forces
65. Water is oxidised to oxygen by
66. H2O2
67. KMnO4
68. ClO2
69. fluorine
70. The H-O-H bond angle in a water molecule is about
71. 90o
72. 105o
73. 135o
74. 180o
75. The action of water or dilute mineral acids on metals can give
76. tritium
77. dihydrogen
78. trihydrogen
79. mono hydrogen
80. Reaction of potassium with water is
81. hydrolysis
82. absorption
83. exothermic
84. Endothermic
85. Water softening by Clarke’s process uses
86. potash alum
87. calcium bicarbonate
88. calcium hydroxide
89. sodium bicarbonate
90. A variety of water which contains soluble salts of Ca and Mg is known as
91. soft water
92. heavy water
93. conductivity water
94. hard water
95. Oxygen does not react with
96. Na
97. P
98. Cl
99. S
100. The gas O3 (ozone) cannot oxidise
101. KI
102. FeSo4
103. KMnO4
104. K2MnO4
105. The molarity of pure water at 277K is
106. 1M
107. 5M
108. 55.5M
109. 2.5M
110. Which one of the following substances has the highest proton affinity?
111. NH3
112. H2O
113. PH3
114. H2S
115. Find the pH of a solution containing an equal volume of 0.1 M NaOH and 0.01 M HCl.
116. 7.0
117. 2.0
118. 12.65
119. 1.04
120. Find the solubility product (Ksp) of Ba(OH)2, if the pH of a saturated solution of Ba(OH)2 is 12.
121. 5.0 × 10-7
122. 3.3 × 10-7
123. 5.0 × 10-6
124. 4.0 × 10-6
125. Buffer solutions resist any change in pH. This is because \_\_\_\_\_\_.
126. acids and alkalis in these solutions are shielded from attack by other ions
127. these give unionised acid or base on reaction with added acid or alkali
128. fixed value of pH
129. large excess of H+ or OH– ions
130. Which of the following solutions will act as a buffer?
131. HNO2and NaNO2
132. HCl and KCl
133. HNO3 and NH4NO3
134. NaOH and NaCl
135. Which of the following is the strongest conjugate base?
136. Cl–
137. SO42-
138. CH3COO–
139. NO3–
140. Find the pH of 0.1N NaOH solution.
141. 13
142. 10
143. 12
144. 11
145. Which of the following is the conjugate acid of NH2–?
146. NH4+
147. NH4OH
148. NH3
149. NH2–
150. What will be the concentration [OH–] in the solution, if it is prepared by 20.0 mL of 0.050 M HCl with 30.0 mL of 0.10 M Ba(OH)2?
151. 0.0050 M
152. 0.40 M
153. 0.10 M
154. 0.12 M
155. Which of the following solutions (equimolar) will have the highest pH?
156. AlCl3
157. BaCl2
158. BeCl2
159. LiCl
160. This is not an acidic buffer.
161. H2CO3 and Na2CO3
162. CH3COOH and CH3COONa
163. HClO4 and NaClO4
164. H3PO4 and Na3PO4
165. Which of the following is released when a Hydrogen atom loses an electron?  
     a) Nucleus  
     b) Proton  
     c) Charge  
     d) Ion
166. Which of the following is an example of amphoteric molecule?  
     a) Acetic acid  
     b) Malic acid  
     c) Sugars  
     d) Water
167. What is the full form of pH?  
     a) Positive hydrogen  
     b) Potential Hydrogen  
     c) Positron  
     d) Proton of hydrogen
168. A solution having a pH of 6 has a proton concentration of \_\_\_\_\_\_\_  
     a) 10-6 M  
     b) 106 M  
     c) 6 M  
     d) 0.6 M
169. What is the concentration of pure water?  
     a) 55.51 M  
     b) 25.51 M  
     c) 55 M  
     d) 25 M
170. In presence of an acid, amino group can be \_\_\_\_\_\_\_\_\_\_\_\_  
     a) Polarized  
     b) Washed away  
     c) Protonated  
     d) Replaced
171. Buffers react with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ions.  
     a) hydrogen, hydroxyl  
     b) magnesium, calcium  
     c) potassium  
     d) sodium
172. Buffers usually contain \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with its conjugate \_\_\_\_\_\_\_\_\_\_\_\_  
     a) weak base, base  
     b) strong base, acid  
     c) weak acid, base  
     d) weak acid, acid
173. Carbonic acid and bicarbonate ions buffer which of the following?  
     a) Cytosol  
     b) Cytoplasm  
     c) Blood  
     d) Lymph
174. Which of the following combinations **cannot** produce a buffer solution?

(a) HNO2 and NaNO2

(b) HCN and NaCN

(c) HClO4 and NaClO4

(d) NH3 and (NH4)2SO4

**UNIT II Dr.V. Kavitha**

**1) Which of the following is the most abundant biomolecule on the earth?**

(a) Lipids

(b) Proteins

(c) Carbohydrates

(d) Nucleic acids.

**2) Which of the following Biomolecules simply refers to as “Staff of life”?**

(a) Lipids

(b) Proteins

(c) Vitamins

(d) Carbohydrates

**3) Which of the following is the simplest form of carbohydrates?**

(a) Carboxyl groups

(b) Aldehyde and Ketone groups

(c) Alcohol and Carboxyl groups

(d) Hydroxyl groups and Hydrogen groups

**4) Which of the following monosaccharides is the majority found in the human body?**

(a) D-type

(b) L-type

(c) LD-types

(d) None of the above

**5) Which of the following are the major functions of Carbohydrates?**

(a) Storage

(b) Structural framework

(c) Transport Materials

(d) Both Storage and structural framework

**6) Which of the following is the general formula of Carbohydrates?**

(a) (C4H2O)n

(b) (C6H2O)n

(c) (CH2O)n

(d) (C2H2O)n COOH

**7) Which of the following is the smallest carbohydrate?**

(a) Ribose

(b) Glucose

(c) Glyceraldehyde

(d) Dihydroxyacetone

**8) Which of the following is a reducing sugar?**

(a) Dihydroxyacetone

(b) Erythrulose

(c) Glucose

(d) All of the above

**9) Which of the following is an example of Epimers?**

(a) Glucose and Ribose

(b) Glucose and Galactose

(c) Galactose, Mannose and Glucose

(d) Glucose, Ribose and Mannose

**10) Which of the following does not have sulphuric acid groups?**

(a) Heparin

(b) Kerato sulfate

(c) Hyaluronic acid

(d) Chondroitin sulfate

**11). The general formula of monosaccharides is**(A) CnH2nOn  
(B) C2nH2On  
(C) CnH2O2n  
(D) CnH2nO2n

**12. The general formula of polysaccharides is**(A) (C6H10O5)n  
(B) (C6H12O5)n  
(C) (C6H10O6)n  
(D) (C6H10O6)n

**13. The aldose sugar is**  
(A) Glycerose  
(B) Ribulose  
(C) Erythrulose  
(D) Dihydoxyacetone

**14. A triose sugar is**  
(A) Glycerose  
(B) Ribose  
(C) Erythrose  
(D) Fructose

**15. A pentose sugar is**  
(A) Dihydroxyacetone  
(B) Ribulose  
(C) Erythrose  
(D) Glucose

**16. The pentose sugar present mainly in the heart muscle is**(A) Lyxose(B) Ribose  
(C) Arabinose  
(D) Xylose

**17. Polysaccharides are**(A) Starch

(B) Acids  
(C) Proteins  
(D) Oils

**18. Isomers differing as a result of variations in configuration of the —OH and —H on carbon atoms 2, 3 and 4 of glucose are known as**(A) Epimers  
(B) Anomers  
(C) Optical isomers  
(D) Steroisomers

**19. Name the major storage form of carbohydrates in animals?**a) Cellulose  
b) Chitin  
c) Glycogen  
d) Starch

**20. Which of the following is also known as invert sugar?**a) Sucrose  
b) Fructose  
c) Dextrose  
d) Glucose

**21. Which of the following glycosidic linkage is found in maltose?**a) Glucose (α-1 – 2β) Fructose  
b) Glucose (α1 – 4) Glucose  
c) Galactose (β1 – 4) Glucose  
d) Glucose (β1 – 4) Glucose

**22. Which of the following amino sugar are present in the bacterial cell wall?**  
a) N-acetylmuramic acid  
b) Sialic acid  
c) Aminoglycoside  
d) Azide

**23. Which class of carbohydrates is considered as non-sugar?**  
a) Monosaccharides  
b) Disaccharides  
c) Polysaccharides  
d) Oligosaccharides

**24. Class of carbohydrate which cannot be hydrolyzed further, is known as?**  
a) Disaccharides  
b) Polysaccharides  
c) Proteoglycan  
d) Monosaccharide

**25. Carbohydrates are also known as\_\_\_\_\_\_\_\_\_\_\_**a) Hydrates of carbon  
b) Carbonates  
c) Glycolipids  
d) Polysaccharides

**26. What is the solubility of lipids in water?**a) Soluble  
b) Partially soluble  
c) Insoluble  
d) Partially insoluble

**27. Find the INCORRECT statement about the biological functions of lipids.**a) Storage form of metabolic fuel  
b) Have a protective function in bacteria, plant, and insects  
c) The structural component of membranes  
d) Exhibit increased catalytic activity

**28. Which of the following is an example of unsaturated fatty acids?**a) Lauric or Dodecanoic  
b) Linoleic or octadecatrienoic  
c) Palmitic or hexadecanoic  
d) Myristic or tetradecanoic

**29. Name the two essential fatty acids?**a) Linoleate and linolenate  
b) Oleic and linoleic  
c) Lauric and myristic  
d) Arachidonic and oleic

**30. Which of the following form of lipids are also referred as neutral lipids?**a) Triacylglycerol  
b) Steroid  
c) Phospholipids  
d) Wax

**31. Name the reagent which is used in Saponification?**a) Ammonia  
b) Acetic acid  
c) NaOH/KOH  
d) Butanone

**32. Which of the following is not a component of a phospholipid?**a) Phosphate  
b) Alcohol  
c) Glycerol  
d) Protein

**33. Which of the following phospholipid is considered as a major constituent of nervous tissue?**a) Glycerophospholipid  
b) Plasmalogen  
c) Inositol  
d) Sphingomyelin

**34. This is an example of derived lipids**

(a) Terpenes

(b) Steroids

(c) Carotenoids

(d) All of the above

**35. Which of the following factors is not responsible for the denaturation of proteins?**

(a) Heat

(b) Charge

(c) pH change

(d) Organic solvents

**36. Which of the following is responsible for specifying the 3D structure of a protein?**

(a) The peptide bond

(b) The amino acid sequence

(c) Interaction with other polypeptides

(d) Interaction with molecular chaperons

**37. \_\_\_\_\_\_\_\_are not a classified form of conjugated proteins.**

(a) Lipoproteins

(b) Glycoproteins

(c) Metalloproteins

(d) Complete proteins

**38. What is the average molecular weight of an amino acid residue in a protein?**

(a) 120

(b) 110

(c) 130

(d) 140

**39. Which of the following proteins was first sequenced by Frederick Sanger?**

(a) Myosin

(b) Insulin

(c) Myoglobin

(d) Haemoglobin

**40. Which of the following statements is true about proteins?**

(a) Proteins are made up of amino acids.

(b) Proteins are essential for the development of skin, teeth and bones.

(c) Protein is the only nutrient that can build, repair and maintain body tissues.

(d) All of the above

**41. A Protein molecule made of \_\_\_ amino acids?**

(a) 10

(b) 20

(c) 30

(d) 50

**42. What is a bond between amino acids called?**

(a) Ionic bond

(b) Acidic bond

(c) Peptide bond

(d) Hydrogen bond

**43. Which of the following statements is true about proteins?**

(a) Proteins are polymers of glucose

(b) Proteins are polymers of amino acids

(c) Proteins are polymers of peptide bonds

(d) Proteins are polymers of disulfide bridges

**44. Which of the following food products are high in protein content?**

(a) Tofu and eggs

(b) Grains and legumes

(c) Milk and milk products

(d) All of the above

**45. Which of the following statements is true about the complete proteins?**

(a) High-protein foods that stabilize body weight

(b) Food that has a balanced amount of fat and protein

(c) Foods that provide all the amino acids that the body needs

(d) All of the above

**46. Which of the following techniques is used to determine the protein structures?**

(a) X-ray crystallography

(b) Kryptonics X-ray vision

(c) Magnetic resonance imaging (MRI)

(d) None of the above

**47. Which of the following disorders is caused by the deficiency of proteins?**

(a) Weight loss

(b) Muscle fatigue

(c) Loss in muscle strength

(d) All of the above

**48. Which of the following cell organelles is involved in the process of protein synthesis?**

(a) Vesicles

(b) Ribosomes

(c) Synchrotrons

(d) Mitochondria

**49. Which of the following is not the function of proteins?**

(a) Helps in digesting food

(b) Carries genetic information

(c) Fights against the invading pathogens

(d) Helps in transporting oxygen in the blood

**50. Which of the following is true about enzymes?**

(a) Proteins

(b) Nucleic acids

(c) Carbohydrates

(d) DNA molecule

**51. Which of the following statements is true about the (primary) 1° structure of proteins?**

(a) The helical structure of the protein

(b) Subunit structure of the protein

(c) Three-dimensional structure of the protein

(d) The sequence of amino acids are joined by a peptide bond

**52. Which of the following diseases is caused by protein deficiency?**

(a) Anaemia

(b) Kwashiorkor

(c) Hypothyroidism

(d) All of the above

**53. Peptide bond is a \_\_\_\_\_\_\_\_\_**a) Covalent bond  
b) Ionic bond  
c) Metallic bond  
d) Hydrogen bond

**54.  A tripeptide has \_\_\_\_\_\_\_\_\_**  
a) 3 amino acids and 1 peptide bond  
b) 3 amino acids and 2 peptide bonds  
c) 3 amino acids and 3 peptide bonds  
d) 3 amino acids and 4 peptide bonds

**55. Which part of the amino acid gives it uniqueness?**a) Amino group  
b) Carboxyl group  
c) Side chain  
d) None of the mentioned

**56. Haemoglobin has**

a) primary structure  
b) secondary structure

c) tertiary structure

d) quaternary structure

**57. Tertiary structure is maintained by**a) peptide bond  
b) disulphide bond

c) hydrogen bond

d) all of the above

**58. Fibrous protein such as fibroin consist of polypeptide chains arranged in**

a) α- helix

b) β pleated sheet

c) β- helix

d) none of these

**59. Myoglobin is a**

a) protein with primary structure  
b) protein with secondary structure

c) protein with tertiary structure

d) protein with quaternary structure

**60. Which of the following molecules is a typical fatty acid?**

a) A molecule that has an even number of carbon atoms in a branched chain.

b) An amphipathic dicarboxylic acid with unconjugated double bonds.

c) A molecule that has one cis double bond in a linear carbon chain.

d) A polar hydrocarbon with that reacts with NaOH to form a salt

**UNIT - III Dr.V.Kavitha**

|  |  |
| --- | --- |
| 1.The released energy obtained by oxidation of glucose is stored as | |
| |  |  | | --- | --- | | [a.](javascript:%20void%200;) | a concentration gradient across a membrane | | [b.](javascript:%20void%200;) | ADP | | [c.](javascript:%20void%200;) | ATP | | [d.](javascript:%20void%200;) | NAD+ | | |
| 2.Every one molecule of sugar glucose which is oxidized, \_\_\_\_\_\_\_\_\_\_ molecule of pyruvic acid are produced. | |
| |  |  | | --- | --- | | [a.](javascript:%20void%200;) | 1 | | [b.](javascript:%20void%200;) | 2 | | [c.](javascript:%20void%200;) | 3 | | [d.](javascript:%20void%200;) | 4 | | |
| 3.The amount of energy received from one ATP is | |
| |  |  | | --- | --- | | [a.](javascript:%20void%200;) | 76 kcal | | [b.](javascript:%20void%200;) | 7.3 kcal | | [c.](javascript:%20void%200;) | 760 kcal | | [d.](javascript:%20void%200;) | 1000 kcal | | |
| 4.The enzymes of glycolysis in a eukaryotic cell are located in the | |
| |  |  | | --- | --- | | [a.](javascript:%20void%200;) | intermembrane space | | [b.](javascript:%20void%200;) | plasma membrane | | [c.](javascript:%20void%200;) | Cytosol | | [d.](javascript:%20void%200;) | mitochondrial matrix | | |
| 5. ATP is a | |
| |  |  | | --- | --- | | [a.](javascript:%20void%200;) | Polysaccharide | | [b.](javascript:%20void%200;) | Protein | | [c.](javascript:%20void%200;) | Nucleotide | | [d.](javascript:%20void%200;) | Amino acid | | |
| 6. | The glycolytic pathway (glucose → 2 pyruvate) is found |
| |  |  | | --- | --- | | [a.](javascript:%20void%200;) | in all living organisms | | [b.](javascript:%20void%200;) | primarily in animals excluding particles | | [c.](javascript:%20void%200;) | only in eukaryotes | | [d.](javascript:%20void%200;) | only in yeast | |
| 7. Which of the following regulates glycolysis steps? | |
| |  |  | | --- | --- | | [a.](javascript:%20void%200;) | Phosphofructokinase | | [b.](javascript:%20void%200;) | Hexose kinase | | [c.](javascript:%20void%200;) | Pyruvate kinase | | [d.](javascript:%20void%200;) | All of these | | |
| 8. Glucose from the breakdown of glycogen is obtained in | |
| |  |  | | --- | --- | | [a.](javascript:%20void%200;) | the liver by phosphorolysis | | [b.](javascript:%20void%200;) | the muscles by phosphorolysis | | [c.](javascript:%20void%200;) | the muscles by hydrolysis | | [d.](javascript:%20void%200;) | both (a) and (b) | | |

**9. what is glycolysis?**  
a. utilization of glucose

b. synthesis of glucose

c. synthesis of glycogen

d. breakdown of glycogen

**10. Where does glycolysis occur?**  
a. cytosol

b. mitochondria matrix

c. nucleus

d. ribosomes

**11. Which of the following is the first enzyme of glycolysis?**  
a. pyruvate dehydrogenase

b. phosphofructokinase

c. hexokinase

d. None of the above

**12. which enzyme converts pyruvate to lactate?**  
a. pyruvate kinase

b. pyruvate dehydrogenase

c. pyruvate carboxylase

d. Enolase

**13. which hormone stimulates glycolysis?**  
a. insulin

b. glucagon

c. growth hormone

d. all of the above

**14. Which hormone inhibits glycolysis?**  
a. insulin

b. glucagon

c. growth hormone

d. All of the above

**15. Glycolysis is also known as?**

a. Kreb’s cycle

b. respiratory cycle

c. EmbdenMeyerh of pathway

d. HMP-shunt

**16. Which process shares the same pathway as glycolysis but in opposite direction?**  
a. glycogenesis

b. gluconeogenesis

c. glycogenolysis

d. HMP-shunt

**17. TCA cycle is also known as?**  
a. citric acid cycle

b. Kreb’s cycle

c. both

d. none of the above

**18. Which is the first compound formed in the TCA cycle?**  
a. oxaloacetate

b. citrate

c. isocitrate

d. None of the above

**19. The TCA cycle occurs in?**  
a. mitochondrial matrix

b. cytosol

c. nucleus

d. Ribosomes

**20. Which compound generates acetyl-CoA?**  
a. lactate

b. pyruvate

c. glucose

d. fructose

**21. Which enzyme catalyzes the conversion of isocitrate to alpha-ketoglutarate?**  
a. isocitrate dehydrogenase

b. isocitrate carboxylase

c. alpha-ketoglutarate dehydrogenase

d. aldolase

**22. Which hormone stimulates TCA cycle?**  
a. glucagon

b. insulin

c. growth hormone

d. all of the above

**23. Which hormone inhibits TCA cycle?**  
a. glucagon

b. insulin

c. growth hormone

d. all of the above

**24. Which compound is considered to play the catalytic role in TCA cycle?**

a. citrate

b. isocitrate

c. oxaloacetate

d. alpha-ketoglutarate

**25. The TCA is the final common oxidative pathway for which bio-molecule?**

a. carbohydrates

b. fats

c. amino acids

d. all of the above

**26. TCA cycle generates how many ATP molecules?**  
a. 10 ATP

b. 12 ATP

c. 20 ATP

d. 24 ATP

**27. Which of the following enzyme requires FAD as energy molecule?**  
a. citrate synthase

b. succinate thiokinase

c. fumerase

d. none of the above

**28. Glycogen metabolism is a part of**

a. carbohydrate metabolism

b. fat metabolism

c. lipid metabolism

d. amino acid metabolism

**29. Which enzyme is considered as the principal enzyme for the regulation of glycogenesis?**  
a. phosphoglucomutase

b. glycogen phosphorylase

c. glucose-6-phosphatase

d. Glycogen synthase

**30. Where does glycogenesis takes place?**  
a. cytosol

b. mitochondria

c. ribosomes

d. Endoplasmic reticulum

**31. What is the main function of hexokinase?**  
a. glucose to glucose-6-phosphate in muscle  
b. glucose to glucose-6-phosphate in liver  
c. both  
d. None of the above

**32. Which enzyme catalyzes the reaction of glycogenesis**?  
a. hexokinase

b. glycogen synthase

c. glucokinase

d. all of the above

**33. which enzyme is considered as the principal enzyme for the regulation of glycogenolysis?**  
a. phosphoglucomutase

b. glycogen phosphorylase  
c. glucose-6-phosphatase

d. glucan transferase

**34. Where does glycogenolysis take place?**  
**a**. cytosol

b. mitochondria  
c. ribosomes

d. endoplasmic reticulum

**35. Which enzyme catalyzes the reaction which is utilized in both glycogenesis and glycogenolysis?**  
a. phosphoglucomutase

b. glycogen phosphorylase  
c. glucose-6-phosphatase

d. glucan transferase

36. **Where is glucose-6-phosphate mainly used?**  
a. glycolysis

b. TCA cycle  
c. HMP shunt

d. A and B

37. Which enzyme catalyzes the conversion of pyruvate to oxaloacetate?  
a) Pyruvate carboxylase  
b) Pyruvate dehydrogenase  
c) Pyruvate kinase  
d) Phosphofructokinase-1

38. Oxaloacetate is reduced to malate by \_\_\_\_\_\_\_\_\_\_\_\_  
a) Pyruvate carboxylase  
b) Malate dehydrogenase  
c) Pyruvate kinase  
d) Phosphofructokinase

39. Gluconeogenesis involves the conversion of \_\_\_\_\_\_\_\_\_\_\_\_  
a) Glucose to pyruvate  
b) Pyruvate to glucose  
c) Phosphoenolpyruvate to glucose  
d) Pyruvate to fructose

40. Formation of one molecule of glucose from pyruvate requires \_\_\_\_\_\_\_\_\_\_\_\_  
a) 4 ATP, 2 GTP and 2 NADH  
b) 3 ATP, 2 GTP and 2 NADH  
c) 4 ATP, 1 GTP and 2 NADH  
d) 2 ATP, 2 GTP and 2 NADH

41.What is the main source of glucose carbons for gluconeogenesis?  
a) Guanine  
b) Alanine  
c) Cysteine  
d) Threonine

**42. Gluconeogenesis is used for which type of metabolism?**  
a. lipid metabolism

b. nucleic acid metabolism

c. carbohydrate metabolism

d. all of the above  
**43. Where does gluconeogenesis mainly occur?**  
a. mitochondria

b. cytosol

c. ribosomes

d. plasma membrane  
**44.Which of the following is a tricarboxylic acid?**  
a. Acetic acid

b. Succinic acid

c. Oxaloacetic acid

d. Citric acid

**45. Which of the following is the precursor of gluconeogenesis?**  
a. lactate

b. glycerol

c. intermediates of TCA cycle

d. all of the above

**46. What is the main function of gluconeogenesis?**  
a. maintains blood calcium level

b. maintains blood glucose level

c. hydrolysis

d. All of the above

**47. Which hormone inhibit the gluconeogenesis?**  
a. insulin

b. glucagon

c. growth hormone

d. none of the above

**48. HMP shunt is required for which kind of metabolism?**  
a. carbohydrate metabolism

b. fat metabolism  
c. lipid metabolism

d. amino acid metabolism

**49. What is the product generated after the completion of 1st phase of -----?**  
a. ribulose-5-phosphate

b. CO2  
c. NADPH

d. all of the above

**50. What is the location of pentose phosphate pathway to take place?**  
a. cell membrane

b. cytosol  
c. ribosomes

d. mitochondria

**51. What stimulates the pentose phosphate pathway?**  
a. high concentration of insulin

b. low level of NADPH  
c. high level of NADPH

d. both A and B

**52. Which enzyme belongs to the 2nd phase of HMP shunt?**  
a. glucose-6-phosphate dehydrogenase

b. 6-phosphogluconate  
c. 6-phosphogluconate dehydrogenase

d. none of the above

**53. What type of reactions occurs in the 1st phase of pentose phosphate pathway?**  
a. oxidative reversible

b. non-oxidative reversible  
c. non-oxidative irreversible

d. oxidative irreversible

**54. Krebs cycle occurs in aerobic respiration due to**

(a) Electron transport chain requires aerobic conditions to operate

(b) Oxygen is a reactant

(c) Oxygen has a catalytic function

(d) All of the above

55. The Cori cycle also known as

1. lactic acid cycle
2. TCA cycle
3. Glycolysis
4. Kreb cycle

56. Cori cycle was discovered by

a. Carl Ferdinand Cori and Gerty Cori

b. Carl Ferdin

c. Gerty Cori

d. None of the above

57. Cori cycle is a metabolic pathway in which ------- is produced by anaerobic glycolysis in muscles

a. lactate

b. acetate

c. pyruvate

d. None of the above

58. In Cori cycle, lactate is transported from muscles to

a. kidney

b. liver

c. lungs

d. all of the above

59. In Cori cycle, lactate is transported from muscles to liver and converted to -----

a. glucose

b. glycogen

c. lactate

d. all of the above

60. In Cori cycle glucose from liver, which then returns to the muscles and is cyclically metabolized back to

a. lactate

b. malate

c. oxalate

d. lipid

**Unit – IV Dr.R.Balasubramanian**

1**. Which of the following factors is not responsible for the denaturation of proteins?**

a) Heat

b) Charge

c) pH change

d) Organic solvents

**2. Which of the following is responsible for specifying the 3D shape of a protein?**

a) The peptide bond

b) The amino acid sequence

c) Interaction with other polypeptides

d) Interaction with molecular chaperons

**3. \_\_\_\_\_\_\_\_is not a classified form of conjugated proteins.**

a) Lipoproteins

b) Glycoproteins

c) Metalloproteins

d) Complete proteins

**4. What is the average molecular weight of an amino acid residue in a protein?**

a) 120

b) 110

c) 130

d) 140

**5. Which of the following proteins was first sequenced by Frederick Sanger?**

a) Myosin

b) Insulin

c) Myoglobin

d) Haemoglobin

**6. Which of the following statements is true about proteins?**

a) Proteins are made up of amino acids.

b) Proteins are essential for the development of skin, teeth and bones.

c) Protein is the only nutrient that can build, repair and maintain body tissues.

d) All of the above

**7. How many amino acids make up a protein?**

a) 10

b) 20

c) 30

d) 50

**8. What is the bond between amino acids called?**

a) Ionic bond

b) Acidic bond

c) Peptide bond

d) Hydrogen bond

**9. Which of the following statements is true about proteins?**

a) Proteins are polymers of glucose

b) Proteins are polymers of amino acids

c) Proteins are polymers of peptide bonds

d) Proteins are polymers of disulfide bridges

**10. Which of the following food products are high in protein content?**

a) Tofu and eggs

b) Grains and legumes

c) Milk and milk products

d) All of the above

**11. Which of the following statements is true about the protein containing foods?**

a) High-protein foods that stabilize body weight

b) Balanced amount of fat and protein

c) Foods that provide all the amino acids that the body needs

d) All of the above

**12. Which of the following techniques is used to determine the protein structures?**

a) X-ray crystallography

b) Kryptonics X-ray vision

c) Magnetic resonance imaging (MRI)

d) None of the above

**13. Which of the following disorders is caused by the deficiency of proteins?**

a) Weight loss

b) Muscle fatigue

c) Loss in muscle strength

d) All of the above

**14. Which of the following cell organelles is involved in the process of protein synthesis?**

a) Vesicles

b) Ribosomes

c) Synchrotrons

d) Mitochondria

**15. Which of the following is not the function of proteins?**

a) Helps in digesting food

b) Carries genetic information

c) Fights against the invading pathogens

d) Helps in transporting oxygen in the blood

**16. The 3-D structure of proteins can be determined by\_\_\_\_\_\_\_\_.**

a) Spectroscopy

b) X-ray crystallography

c) Nuclear magnetic resonance

d) Both (b) and (c)

**17. Which of the following is true about enzymes?**

a) Proteins

b) Nucleic acids

c) Carbohydrates

d) DNA molecule

**18. Which of the following statements is true about the (primary) 1° structure of proteins?**

a) The helical structure of the protein

b) Subunit structure of the protein

c) Three-dimensional structure of the protein

d) The sequence of amino acids joined by peptide bonds

**19. Which of the following diseases is caused by protein deficiency?**

a) Anemia

b) Kwashiorkor

c) Hypothyroidism

d) All of the above

**20. Which of the following property is a common compound shared by the TCA cycle and the urea cycle?**

a) **α**– ketoglutarate

b) Succinyl co A

c) Oxalo acetate

d) Fumerate

|  |
| --- |
| 21. Histidine is degraded to α-ketoglutarate and is described as a |
| |  |  | | --- | --- | | [a)](javascript:%20void%200;) | gluco amino acid | | [b](javascript:%20void%200;)) | glucogenic amino acid | | [c)](javascript:%20void%200;) | ketogenic amino acid | | [d)](javascript:%20void%200;) | keto-gluco amino acid | |

|  |  |
| --- | --- |
| 22. | Which of the following amino acids is considered as both ketogenic and glucogenic? |
| |  |  | | --- | --- | | [a)](javascript:%20void%200;) | Valine | | [b)](javascript:%20void%200;) | Tryptophan | | [c)](javascript:%20void%200;) | Lysine | | [d)](javascript:%20void%200;) | None of these | |

|  |  |
| --- | --- |
| 23. | A glucogenic amino acid is one which is degraded to |
| |  |  | | --- | --- | | [a)](javascript:%20void%200;) | keto-sugars | | [b)](javascript:%20void%200;) | either acetyl CoA or acetoacetyl CoA | | [c)](javascript:%20void%200;) | pyruvate or citric acid cycle intermediates | | [d)](javascript:%20void%200;) | none of the above | |

|  |  |
| --- | --- |
| 24. | Which of the following is the best described glucogenic amino acid? |
| |  |  | | --- | --- | | [a)](javascript:%20void%200;) | Lysine | | [b)](javascript:%20void%200;) | Tryptophan | | [c)](javascript:%20void%200;) | Valine | | [d)](javascript:%20void%200;) | None of these | |

|  |  |
| --- | --- |
| 25. | A person with phenylketonuria cannot convert |
| |  |  | | --- | --- | | [a)](javascript:%20void%200;) | phenylalanine to tyrosine | | [b)](javascript:%20void%200;) | phenylalanine to isoleucine | | [c)](javascript:%20void%200;) | phenol into ketones | | [d)](javascript:%20void%200;) | phenylalanine to lysine | |

 26. Which of these amino acids are essential for infants?  
a) Methionine  
b) Arginine and Histidine  
c) Valine  
d) Lysine and Leucine

27. In which form the nitrogen is incorporated into an amino acid?  
a) Nitrite  
b) Glutamate  
c) Nitrate  
d) Ammonium ion

28. Transamination reaction in amino acid synthesis is catalyzed by enzyme\_\_\_\_\_\_\_\_\_  
a) Nitric oxide synthase  
b) Decarboxylase  
c) Aminotransferase  
d) Glutamate decarboxylase

29. Intermediates of which of the following metabolic pathway have not been used in the synthesis of amino acids?  
a) Glycolysis  
b) Fatty acid biosynthesis  
c) Citric acid cycle  
d) Pentose phosphate pathway

30. Name the amino acid which does not take part in transamination during amino acid catabolism.  
a) Proline  
b) Threonine  
c) Lysine  
d) Serine

31. Name those living organisms which secrete nitrogen in the form of urea?  
a) Ureotelic  
b) Uricotelic  
c) Ammonotelic  
d) Nitroso compounds.

32. The enzyme that regulates the biosynthesis of cholesterol also serves as the druggable target for the reduction of hypercholesterolemia (increase blood cholesterol).

a) HMG-CoA synthase

b) HMG- CoA reductase

c) Lansterol oxidase

d) Cholesterol synthase

33. Name the type of cell in which synthesis of urea cycle takes place?  
a) Pancreatic cell  
b) Hepatocyte  
c) Bowman’s gland cell  
d) Urinary epithelium cell

34. Which of these is a hereditary disease caused due to an error in amino acid metabolism?  
a) Homocystinuria  
b) Albinism  
c) Phenylketonuria  
d) Branched-chain ketoaciduria

35. Which of the following is non-essential amino acid?  
a) Lysine  
b) Leucine  
c) Serine  
d) Methionine

36. Which of these amino acids are essential for infants?  
a) Methionine  
b) Arginine and Histidine  
c) Valine  
d) Lysine and Leucine

38. The cholesterol serves as the precursor for the following biosynthetic pathways, EXCEPT  
a) Bile acid synthesis  
b) Steroid hormone synthesis  
c) Aldosterone synthesis  
d) Thyroid hormone synthesis  
39. Which of the following lipids act as lungs surfactants?  
a) Phosphatidylcholine  
b) Phosphatidylethanolamine  
c) Ceramide  
d) Phosphatidylinositol  
40. Identify the simple lipid from the following?  
a) Lecithin  
b) Fatty acid  
c) Triacylglycerol  
d) Steroids  
41.All of the following are complex lipids, Except?  
a) Phosphatidic acid  
b) Cerebroside  
c) Cardiolipin  
d) Cholesterol  
42. Which of the following is an essential fatty acid?  
a) Linolenic acid  
b) Arachidonic acid  
c) Oleic acid  
d) Palmitic acid  
43. Bile acid is derived from:  
a) Cholesterol  
b) Amino acids  
c) Fatty acids  
d) Bilirubin  
44. Which of the following lipid is mostly present in mitochondrial membranes?  
a) Lecithin  
b) Cephalin  
c) Cardiolipin  
d) Ceramide  
45. Which of the following enzyme is activated to facilitate the uptake?  
a) Hormone-sensitive lipase  
b) Lipoprotein lipase  
c) LCAT  
d) Apo C-II  
46. Which of the following inhibits acetyl CoA carboxylase- a rate-limiting enzyme of fatty metabolism?  
a) Citrate  
b) ATP  
c) Malonyl CoA  
d) Acyl CoA

47. Which of the following hormone increases the synthesis of cholesterol by regulating the enzyme HMG CoA reductase?

a) Insulin

b) Glucagon

c) Glucocorticoids

d) All of the above

48. Which of the following enzyme is responsible for the conversion of cholesterol to cholesterol ester inside the cells?

a) Lecithin Cholesterol Acyl Transferase

b) Acyl CoA Cholesterol Acyl Transferase

c) Cholesterol Esterase

d) None of the Above

49. Which of the following glycolytic intermediates serves as the precursor for the backbone for the synthesis of Triglycerides, Phosphatidylcholine, Phosphatidylethanolamine?

a) Glyceraldehyde-3-phosphate

b) Pyruvate

c) 1-3 Bisphosphoglycerate

d) 3-Phosphoglycerate

50. Which of the following statement is true ?

a) Tay Sachs Disease caused by Hexosaminidase A deficiency

b) Fabry Disease caused by Alpha-Galactosidase deficiency

c) Krabbe Disease caused by Beta-Galactosidase deficiency

d) Gaucher Disease caused by Beta-Glucosidase deficiency

 51. Name the most active organs in the animal body which have the ability to synthesize triacylglycerol?  
a) Spleen  
b) Kidney  
c) Liver and intestines  
d) Adipose tissues

52. Which of the following pathway is not used for triacylglycerol synthesis?  
a) Glycerol 3-phosphate pathway  
b) Glyoxylate pathway  
c) Monoacylglycerol pathway  
d) Kennedy pathway

53. Which of the following enzyme is not used in the synthesis of triacylglycerol?  
a) Glycerol-3-phosphate acyltransferase  
b) Acylglycerophophate acyltransferase  
c) Phosphatidic acid phosphohydrolase  
d) Glycogen phosphorylase

54. What is lipolysis?  
a) Hydrolysis of triacylglycerol  
b) Formation of lipids  
c) Breakdown of ketone bodies  
d) Formation of ketone bodies

55. Which of the following hormone is not used in the hydrolysis of triacylglycerol into the fatty acids in adipose tissues?  
a) Epinephrine  
b) Norepinephrine  
c) Glucagon  
d) Insulin

56. Mark the INCORRECT statement about the bile salt.  
a) These are detergent substances  
b) Stored in the gallbladder  
c) It is hydrophobic in nature  
d) It is made up of cholic acid  
57. Triacylglycerol packed with the apolipoprotein and cholesterol in lipoprotein aggregate is called\_\_\_\_\_\_\_\_\_  
a) Chylomicrons  
b) VLDL  
c) HDL  
d) LDL

58. What is the outcome of the accumulation of acetyl-CoA in the mitochondria of the liver?  
a) It is used as an energy source  
b) It has broken down in to free fatty acids  
c) It gets converted to oxaloacetate  
d) It forms ketone bodies

59. Name the energy source of the brain during starvation?  
a) Fat  
b) Ketone bodies  
c) Protein  
d) Lipids

60. What is the biosynthetic source of all steroid hormones?  
a) Cholesterol  
b) Ketone bodies  
c) Carbohydrate  
d) Protein

**Unit V Dr. G. Priya**

1.Study of enzymes called

a)Nomenclature

b)Enzymology

c)Namology

d)Pathology

2.The enzyme acting on maltose is

a)sucrose

b)Maltase

c)Fructase

d)Pyruvate

3.The enzyme removing Co2 from----is named as Pyruvic decarboxylase

a)Decarboxalic acid

b)Pyruvic acid

c)Citric acid

d)Enzymes

4. Enzymes are named by a code number called---

a) Enzyme Commission number

b)ENS Number

c)ISO

d)Enzyme code number

5.The complete Enzyme that contain a protein part and a non protein part is called

a)Nonproteo enzyme

b)Co enzyme

c)Holo enzyme

d)Riboflavin

6.Riboenzyme is discovered by

a)Thomascech&AnthurWaug

b)Thomascech

c)AnthurWaug

d)Rubanswang

7.-----is used in beer-making in beverage industries

a)Sucrose

b)Fructase

c) Sucrase

d)Amylase

8.IUB is

a)International Urban Biochemistry

b)International Union of Biochemistry

c) International Units of Biochemistry

d)International Enzymological Units

9. -----are enzymes which catalyze hydrolysis

a)Hydrolases

b)Catalyzer

c) Ligases

d)Maltase

10.Enzymes are----in nature

a)Semi solid

b)Liquid

c) Colloidal

d)Solid

11.An enzyme acts on only one of a pair of optical isomerase is called

a)Optical isomerase

b)Optical illusion

c) Optical specificity

d)Thermal electricity

12.The temperature at which the enzyme action is maximum is called

a)Thermal condenser

b)Specific temperature

c) Enzymo thermal condenser

d)Optimum specificity

13.The enzyme ----- is used in cataract surgery

a)Trypsin

b)Isomerase

c) Co enzyme

d)Iso enzymes

14. An enzyme \_\_\_\_\_\_\_\_\_\_is a biocatalyst that increases the rate of the reaction without being changed.  
a) Biome  
b) Bioplast  
c) Biocatalyst  
d) Bioblast

15. Enzyme increases the rate of reaction by lowering the activation energy.  
a) True  
b) False

c)Not true always

d)Not false always

16. What is the nature of an enzyme?  
a) Vitamin  
b) Lipid  
c) Carbohydrate  
d) Protein

17. What is an apoenzyme?  
a) It is a protein portion of an enzyme  
b) It is a non-protein group  
c) It is a complete, biologically active conjugated enzyme  
d) It is a prosthetic group

18. Name the coenzyme of riboflavin (B2)?  
a) NAD or NADP  
b) FAD and FMN  
c) Coenzyme A  
d) Thiamine pyrophosphate

19. Which of this vitamin is associated with the coenzyme Biocytin?  
a) Nicotinic acid  
b) Thiamine  
c) Biotin  
d) Pyridoxine

20. Name the enzyme secreted by pancreas?  
a) Pepsin  
b) Chymotrypsin  
c) Trypsin  
d) Alcohol dehydrogenase

21. Name the enzyme which catalyzes the oxidation-reduction reaction?  
a) Transaminase  
b) Glutamine synthetase  
c) Phosphofructokinase  
d) Oxidoreductase

22. What is the function of phosphorylase?  
a) Transfer inorganic phosphate  
b) Transfer a carboxylate group  
c) Use H2O2 as the electron acceptor  
d) Transfer amino group

23. Mark the CORRECT function of enzyme, Peptidase?  
a) Cleave phosphodiester bond  
b) Cleave amino bonds  
c) Remove phosphate from a substrate  
d) Removal of H2O

[24. Systematic approach of naming enzymes has been recommended by the Commission on Enzymes of the](https://www.studyadda.com/question-bank/neet/biology/biomolecules-%E0%A4%9C%E0%A4%B5-%E0%A4%85%E0%A4%A3/classification-and-factors-affecting-enzyme/1703)

a)International Union of Physiology

b) International Union of Biochemistry

c)International Union of Biotechnology

d) International Union of Genetic Engineering

**25. The enzyme inactivate at the temperature of**

a) 60°C above

b) 60°C

c) 100°C

d) 0°C

**26. In alcoholism, this enzyme is elevated**

a) acid phosphatase

b) hepatitis

c) serum glutamate pyruvate transaminase

d) glutamyltranspeptidase

**27. With regards to enzyme action, this statement is incorrect**

a) Malonate is a competitive inhibitor of succinic dehydrogenase

b) the substrate binds with the enzyme at its active site

c) the non-competitve inhibitor binds the enzyme at a site distinct from that binding the substrate

d) addition of a lot of succinates does not reverse the inhibition of succinic dehydrogenase by malonate

**28. What is the count of genes that determine the synthesis of one enzyme?**

a) One

b) Four

c) Eight

d) Sixteen

**29. The first enzyme that was first isolated and purified in the form of crystals**

a) Urease

b) pepsin

c) Amylase

d) Ribonuclease

**30. Macromolecule chitin is**

a) a simple polysaccharide

b) sulphur containing polysaccharide

c) phosphorous containing polysaccharide

d) nitrogen containing polysaccharide

**31. Enzyme-driven metabolic pathways can be made more efficient by**

a) grouping enzymes into multienzyme free-floating complexes

b) concentrating enzymes with specific cellular compartments

c) fixing enzymes into membranes so they are adjacent to each other

d) all of these

**32. Tryptophan synthetase of**E.coli**, a typical bifunctionaloligomeric enzyme consists of**

a) a protein A and one subunit A

b) a protein designated A

c) two proteins designated A and B

d) a protein designated B

**33. This statement about enzymes is true**

a) enzymes accelerate reactions by lowering the activation energy

b) enzymes are proteins whose three-dimensional form is key to their function

c) enzymes do not alter the overall change in free energy for a reaction

d) all of these

**34. The enzyme COX-1 is vital for human health in this way:**

a) it is a chemical derivative of aspirin

b) catalyzes the hormone-production which maintains the stomach lining

c) critical for the biosynthesis of DNA

d) helps in the transportation of carbon dioxide in the blood

35. Which of the following is not true for isoenzymes?  
a) Many enzymes occur in several molecular forms called isoenzymes  
b) Different isoenzyme catalyze same chemical reaction, but differ in their primary structure and kinetic properties  
c) Isoenzymes are coded by different gene  
d) Enzymes having different site

36. Which of the following is not true for isoenzymes?  
a) Regulation specific to distinct tissue and development stages  
b) Distinctive properties and patterns of metabolism to particular organ  
c) Produced by same genes  
d) Have different kinetic parameters

37. Multiple forms of the same enzyme is referred to as \_\_\_\_\_\_\_\_\_\_  
a) allosteric enzyme  
b) biosensor  
c) isoenzyme  
d) effectors

38. Which of the following property is not shown by isoenzyme?  
a) Sigmoidal shaped curve  
b) Electrophoretic mobility  
c) Kinetic properties  
d) Aminoacid composition

39. Which of the following is false for lactate dehydrogenase (LDH)?  
a) It is a tetrameric enzyme  
b) It catalyzes reversible phosphorylation of creatinine to creatinine phosphate by ATP  
c) It has five isoenzymes  
d) It is made up of two polypeptides

40. An increase in serum level of LDH1 relative to LDH2 is an indication of \_\_\_\_\_\_\_\_\_\_\_  
a) muscular dystrophy  
b) leukemia  
c) myocardial infarction  
d) hepatitis with jaundice

41. Which of the following is not associated with increase of LDH activity in urine?  
a) Megaloblastic anemia  
b) Chronic glomerulonephritis  
c) Diabetic nephrosclerosis  
d) Kidney malignancies

42. LDH4 and LDH5: Bacterial meningitis:: LDH1 and LDH3: \_\_\_\_\_\_\_\_\_\_\_  
a) Kidney malignancies  
b) Myocardial infarction  
c) Intracranial hemorrhage  
d) Viral meningitis

43. Induced Fit Hypothesis proposed by

a) Koshland

b) Emil fisher

c) Robert brown  
d) Willium

44. Non-protein component attached to a protein is called---  
a) Organic group  
b) Prosthetic group  
c) Co enzyme  
d) Protenase

45. Which of the following is not true for creatine kinase?  
a) Its activity is greatest in striated muscle, brain and heart tissue  
b) It catalyzes L-lactate to pyruvate  
c) It is a dimer  
d) It has three isoenzymes

46. CK1: brain:: CK3: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
a) Kidney  
b) Spleen  
c) Skeletal muscle  
d) Cardiac tissue

47. Which is the only tissue which has mixed MB (CK2) isoenzyme?  
a) Prostate  
b) Liver  
c) Cardiac tissue  
d) Spleen

48. Which of the following is not a clinical application of creatine kinase isoenzyme?  
a) Hypothyroidism  
b) Damage of heart tissue  
c) Myopathy  
d) Leukemia

49. Head injures can be detected by \_\_\_\_\_\_\_  
a) increase of CK2 in blood  
b) increase of CK1 in CSF  
c) elevated levels of CK3 in serum  
d) LDH2 and LDH3 increase

50. Identify the hormone that increases the glucose level in blood.

a) Insulin

b) Glucagon

c) Oxytocin

d) Vasopressin

#### **51. Prosthetic groups are protein in all -------proteins**

a) Conjugated

b) Non conjugated

c) Tetrapyrin

d) Thyroxine

#### **52. ----- is given for indigestion of high – fat containing food**

a) Lipase

b) Progesterone

c) Protease

d) oils

#### **53. Catalase is used to concentrate milk**

a) Insulin

b) Catalase

c) Adrenaline

d) Cortisone

#### **54. A particular enzyme acts on only on a particular chemical group**

a) Absolute specificity

b) Oxidase

c) Iodine

d) Group specificity

#### **55. Which of the following does not release steroid hormones?**

a) Testes

b) Ovary

c) Adrenal cortex

d) Pancreas

#### **56. Enzymes are ------**

a) Vasopressin

b) Mineralocorticoids

c) Testosterone

d) Protein

#### **57. Dipeptidases acts only on**

a) Glucocorticoids

b) Oxytocin

c) Dipeptidases

d) Norepinephrine

#### **58. Which of the following hormone is a polypeptide?**

a) Estrogen

b) Insulin

c) Androgen

d) Epinephrine

#### **59. Energy count of the system is called \_\_\_\_\_\_**

a) messengers

b) Enthalpy

c) enzymes

d) inhibitors

#### **60. Which of the following is not an amine hormone?**

a) Norepinephrine

b) Adrenaline

c) Thyroxine

d) Oxytocin

**Answer Key**

**Unit – I**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1.c | 2.b | 3.d | 4.d | 5.c | 6.d | 7.c | 8.c | 9.c | 10.c |
| 11.a | 12.d | 13.c | 14..b | 15.c | 16.a | 17.c | 18.a | 19.a | 20.d |
| 21.a | 22.a | 23.d | 24.a | 25.c | 26.d | 27.a | 28.b | 29.c | 30.d |
| 31.d | 32.b | 33.b | 34.c | 35.c | 36.d | 37.c | 38.c | 39.c | 40.a |
| 41.c | 42,a | 43.b | 44.a | 45.c | 46.a | 47.c | 48.c | 49.b | 50.c |
| 51.b | 52.d | 53.b | 54.a | 55.a | 56.c | 57.a | 58.c | 59.c | 60.c |

**Unit- II**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1.c | 2.d | 3.b | 4.a | 5.d | 6.c | 7.c | 8.d | 9.b | 10.c |
| 11.a | 12.a | 13.a | 14.a | 15.b | 16.a | 17.a | 18.a | 19.c | 11.a |
| 21.b | 22.a | 23.c | 24.d | 25.a | 26.c | 27.d | 28.b | 29.a | 12.a |
| 31.c | 32.d | 33.d | 34.d | 35.b | 36.b | 37.d | 38.b | 39.b | 13.a |
| 41.b | 42.c | 43.b | 44.d | 45.d | 46.a | 47.d | 48.b | 49.b | 14.a |
| 51.d | 52.b | 53.a | 54.b | 55.c | 56.d | 57.d | 58.a | 59.c | 15.b |

**Unit – III**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1.c | 2.b | 3.b | 4.c | 5.d | 6.a | 7.d | 8.d | 9.a | 10.a |
| 11.c | 12.b | 13.a | 14.b | 15.c | 16.b | 17.c | 18.b | 19.a | 20.b |
| 21.a | 22.b | 23.a | 24.c | 25.d | 26.d | 27.d | 28.a | 29.d | 30.a |
| 31.a | 32.d | 33.b | 34.a | 35.a | 36.d | 37.a | 38.b | 39.b | 40.a |
| 41.b | 42.c | 43.b | 44.d | 45.d | 46.b | 47.a | 48.a | 49.d | 50.b |
| 51.d | 52.d | 53.b | 54.a | 55.a | 56.a | 57.a | 58.b | 59.a | 60.a |

**Unit – IV**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1.b | 2.b | 3.d | 4.b | 5.b | 6.d | 7.b | 8.c | 9.b | 10.d |
| 11.d | 12.a | 13.d | 14.b | 15.b | 16.d | 17.a | 18.d | 19.b | 20.c |
| 21.b | 22.b | 23.c | 24.c | 25.a | 26.b | 27.d | 28.a | 29.b | 30.d |
| 31.a | 32.b | 33.b | 34.c | 35.c | 36.b | 37.d | 38.d | 39.a | 40.c |
| 41.d | 42.a | 43.a | 44.c | 45.b | 46.d | 47.a | 48.b | 49.a | 50.a |
| 51.c | 52.b | 53.d | 54.a | 55.d | 56.c | 57.a | 58.d | 59.b | 60.a |

**Unit – V**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | b |  | c |  | d |  | d |  | a |  | a |
|  | b |  | d |  | a |  | c |  | d |  | a |
|  | b |  | a |  | b |  | d |  | a |  | b |
|  | a |  | c |  | b |  | b |  | b |  | d |
|  | c |  | a |  | a |  | d |  | b |  | d |
|  | a |  | d |  | d |  | c |  | d |  | d |
|  | d |  | a |  | d |  | c |  | c |  | c |
|  | b |  | b |  | a |  | a |  | b |  | b |
|  | a |  | c |  | a |  | b |  | b |  | b |
|  | c | 20. | c | 30. | d | 40. | c | 50. | b | 60. | d |