

CHAPTER 9: BIOMOLECULES

ONE MARK QUESTIONS:

1. What are biomolecules? [K]
2. Name the abundant chemical compound present in the body of living organisms. [K]
3. Name the chemical compound used to grind tissue during chemical analysis of organic compound. [K]
4. What are metabolites? [K]
5. What are primary metabolites? [K]
6. What are secondary metabolites? [K]
7. What is the weight range of macromolecules in Daltons? [K]
8. What is the weight range of micro molecules in Daltons? [K]
9. Name the building blocks of proteins. [K]
10. What are peptide bonds? [K]
11. Name the components of amino acids. [K]
12. What are alpha-amino acids? [K]
13. Give an example for neutral amino acids? [K]
14. Give an example for aromatic amino acid? [K]
15. What do you mean by zwitter ion? [K]
16. Which group is responsible for exhibiting physical and chemical properties of amino acids? [K]
17. What are polysaccharides? [K]
18. What are homo polysaccharides? [K]
19. Which polysaccharide is called as animal starch? [K]
20. Which colour is produced when starch reacts with iodine? [K]
21. Why does starch turns blue black with iodine? [R]
22. What are hetero polysaccharides? [K]
23. Name the macromolecule that forms the hereditary determinants of the living organisms. [K]
24. Name the protein which forms the most abundant protein in animal world. [K]
25. Name any one homo- polysaccharide. [K]
26. Name the protein that is most abundant in the Plant world. [K]
27. Which compound is a polymer of fructose? [K]
28. Expand RNA? [K]
29. Name the bond which links two monosaccharides. [K]
30. Name the bond which links amino acids. [K]
31. What is an ester bond? [K]
32. What is a phosphodiester bond? [K]
33. Who proposed the double helical structure of DNA? [K]
34. Give an example for a purine found in DNA. [K]
35. What are enzymes? [K]
36. Why enzymes are called as biocatalysts? [R]
37. Name the bond present between two nucleotides. [K]
38. Name any one Nucleotide. [K]
39. How many weak hydrogen bonds are present between adenine and thymine? [K]
40. How many weak hydrogen bonds are present between cytosine and guanine? [K]
41. How many base pairs present in one full turn of helical strand of DNA. [U]
42. What is the length of one full turn of helical strand of DNA? [K]
43. What is the distance between two base pairs? [K]
44. What are ribozymes? [K]

45. What are active sites of enzymes? [K]
46. At what temperature enzymes get damaged. [U]
47. What is the general rule of thumb regarding a chemical reaction with respect to temperature? [K]
48. What are transferases? [K]
49. Write the expression for rate of a physical or a chemical process. [U]
50. Which factor mainly influences the rates of physical and chemical process during the reaction? [K]
51. Name the acid produced by skeletal muscles during anaerobic conditions. [K]
52. Name the acid produced by skeletal muscles during aerobic conditions. [K]
53. Name the end product formed in yeast during fermentation. [K]
54. What is a substrate? [K]
55. What is inhibition? [K]
56. What is inhibitor? [K]
57. Give an example for inhibitor. [K]
58. Which compound is known as competitive inhibitor? [K]
59. Where do you use Competitive inhibitors? [A]
60. What are co-factors? [K]
61. What is the function of co-factor? [K]
62. What is Apo-enzyme? [K]
63. What are co-enzymes? [K]
64. Name the essential chemical component of many co-enzymes. [K]
65. Name the vitamin present in co-enzyme NAD and NADP. [K]
66. What happens when the co-factor is removed from the enzyme? [U]
67. What are fatty acids? [K]
68. Name the fatty acid with 16 carbon atoms. [K]
69. Name the fatty acid with 20 carbon atoms. [K]
70. What do you call fatty acid without double bond? [K]
71. What do you call fatty acid with double bond? [K]
72. Name the chemical name of glycerol. [K]
73. What are phospholipids? [K]
74. Where are phospholipids found? [K]
75. Give an example of phospholipids. [K]
76. Name the polysaccharide found in exoskeleton of arthropods. [K]
77. What is the polysaccharide found in cotton fibre? [K]
78. Which is the most abundant protein in the whole of biosphere? [K]
79. What is DNA? [K]
80. What is RNA? [K]
81. Give an example for quaternary structure of protein. [U]
82. What is the dynamic state of body constituents? [K]
83. What is anabolic pathway? [K]
84. What is biosynthetic pathway? [K]
85. What is catabolic pathway? [K]
86. Name the energy currency of living system. [K]
87. What is the living state? [K]
88. What is metabolic pathway? [K]
89. What are oxidoreductases? [K]
90. What are hydrolases? [K]
91. What are lyases? [K]
92. What are isomerases? [K]

93. What are ligases? [K]

TWO MARKS QUESTIONS:

1. Name the inorganic compound found in living organisms(K)
2. Write the difference between fats and oils. [K]
3. What are competitive inhibitors? Give an example. [K]
4. Write the structural formula for amino acid Alanine. [S]
5. Write the structural formula for amino acid Serine. [S]
6. Write the structural formula for amino acid Glycine. [S]
7. Write any two differences between saturated and unsaturated fatty acids. [U]
8. What are phospholipids? Give one example. [K]
9. What are Nucleosides? Give an example. [K]
10. Write the any four functions of proteins. [U] 147
11. Write difference between Nucleoside & Nucleotide
12. Write the cyclic structure of glucose and ribose. [S]
13. What do you call first amino acid and last amino acid in a polypeptide chain? [K]
14. Write any two differences between primary and secondary metabolites. [U]
15. What is the significance of Nucleic acid? [U]
16. What is anabolic pathway? Give an example. [K]
17. What is catabolic pathway? Give an example. [K]
18. Write the graphical representation of temperature and pH on enzyme activity. [U]
19. Write any two differences between nucleoside and nucleotide. [U]
20. Amino acids are called α -amino acids and substituted amino acids. Justify. [U]
21. Nucleotides are phosphorylated nucleosides. Justify. [U]
22. Name the four types proteins based on structure. [U]

THREE MARKS QUESTIONS:

1. The power of enzyme is incredible. Explain this with synthesis of carbonic acid as an example. [R]
2. Write a note on three factors affecting enzyme activity. [K]
3. Write any three salient features of B-DNA. [U]
4. What are the three distinct components of a nucleotide? [K]
5. Explain: (a) Peptide bond (b) glycosidic bond (c) phosphodiester bond. [U]
6. Write the reaction to show how phosphodiester bond occurs between two nucleotides. [U]
7. What are essential and non essential amino acids? Give one example for each. [K]
8. What are apoenzymes? How they catalyses the biochemical reaction? Give an example. [K]
9. Briefly explain three kinds of co-factors. [U]
10. Classify the amino acids based on number of amino group and carboxyl group with one example. [U]
11. Give 3 examples of complex polysaccharides in nature. [K]

FIVE MARKS QUESTION:

1. Explain the factors affecting enzyme activity in biochemical reaction. [U]
2. Explain the characters of enzymes. [U]
3. Explain the steps involved in enzyme action. [U]
4. Write the classification of enzymes based on reactions with example. [U]
5. Explain how do enzymes bring about high rate of chemical conversions? [U]

6. Explain the secondary structure of DNA. [U]
7. What is the dynamic state of body constituents and how is it related to metabolism. [U]
8. What are proteins? Write four functions of proteins. [K]
9. Explain with a graphical representation how do enzymes bring about such high rates of chemical conversions? [U]
10. What is Enzyme-substrate complex? Write the four steps of catalytic cycle of an enzyme. [K]