Avinashilingam Institute for Home Science and Higher Education for Women
(Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956)
Re-accredited with 'A+' Grade by NAAC. Recognised by UGC Under Section 12B
Coimbatore - 641 043, Tamil Nadu, India

Bachelor's Degree Examination – June / July 2021
II Semester

Class : I UG **Time : 3 Hours**
Major : Biochemistry and Biotechnology **Max. Marks : 100**

18BBCC04 Chemistry of Proteins

Part A **10 x 1 = 10**
Choose the Correct Answer

1. Which of the following amino acid has a net negative charge at physiologic pH? CO1 K1
   a. glutamic acid b. histidine
   c. lysine d. asparagine

2. The general structure of all amino acids are same except for CO1 K1
   a. lysine b. glycine
   c. proline d. alanine

3. Peptide bond is a CO2 K1
   a. covalent bond b. ionic bond
   c. metallic bond d. hydrogen bond

4. The average molecular weight of an amino acid residue in a protein is about CO2 K1
   a. 128 b. 118
   c. 110 d. 120

5. Which part of amino acid gives its uniqueness? CO3 K2
   a. amino group b. carboxyl group
   c. side chain d. none of the above

6. Unfolding of a protein can be termed as CO3 K1
   a. renaturation b. denaturation
   c. oxidation d. reduction

7. Which of the following does not affect the stability of a alpha helix? CO4 K2
   a. electrostatic repulsion
   b. bulkiness
   c. interaction between R group spaced 3 residues apart
   d. occurrence of alanine and glycine residues

8. Beta pleated sheets are the examples of CO4 K1
   a. primary structure of proteins b. secondary structure of proteins
   c. tertiary structure of proteins d. quarternary structure of proteins

9. The purity of an enzyme at various stages of protein is best measured by CO5 K1
   a. total protein b. total enzyme activity
   c. specific activity of enzyme d. percent recovery of proteins

10. When the linear form of glucose cyclises the product is a CO5 K1
   a. anhydride b. glycoside
   c. hemiacetal d. lactone

Part B **5 x 6 = 30**

Answer ALL questions

Each answer should not exceed 400 words or two pages

11.a. Give an account on C-terminal amino acid analysis.	CO1 K1
(or)	
11.b. Give an account on N-terminal amino acid analysis.	CO1 K1
12.a. Give a short note on oxytocin and vasopressin.	CO2 K1
(or)	
12.b. Describe the structure and functions of glutathione.	CO2 K1
13.a. Differentiate between denaturation and coagulation.	CO3 K2
(or)	
13.b. Brief out the colour reactions of proteins.	CO3 K2
14.a. Describe the structure of insulin and its conformation.	CO4 K1
(or)	
14.b. Describe the structure of hemoglobin and its conformation.	CO4 K1
15.a. Describe the steps involved in the extraction of protein.	CO5 K2
(or)	
15.b. Based on molecular size how proteins are separated?	CO5 K2

Part C **5 x 12 = 60**

Answer ALL questions

Each answer should not exceed 800 words or four pages

16.a. Describe the chemical method used for the determination of amino acid sequence of a protein.	CO1 K2
(or)	
16.b. Determine the amino acid composition of a protein by enzymatic methods.	CO1 K2
17.a. Explain the different forces involved in protein conformation.	CO2 K2
(or)	
17.b. Elaborate on the solid phase synthesis of peptides.	CO2 K1
18.a. Describe the structure of collagen and forces stabilising it.	CO3 K2
(or)	
18.b. Explain how proteins are classified based on solubility and functions.	CO3 K3
19.a. Briefly explain the secondary structure of proteins.	CO4 K1
(or)	
19.b. Explain the quarternary structure of protein with suitable example.	CO4 K1
20.a. Explain the methods used for checking the criteria of protein purity.	CO5 K2
(or)	
20.b. How the proteins are separated by based on selective absorption and ligand specificity?	CO5 K3

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