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

Continuous Internal Assessment Test II – October 2024

Semester III

Class: II UG **Time: 2 hours**
Major: Biochemistry and Biotechnology **Max. Marks: 60**

23BBCC03 Proteins and Enzymes

CO1: Describe the isolation and purification of protein by various methods and to estimate the amount of proteins
CO2: Classify the protein based on structure, solubility and function. Understand the methods of sequencing of aminoacid and proteins
CO3: Acquire theoretical knowledge on various methods of measurement of enzymatic reactions and understanding the enzyme kinetics and the mechanism of action of enzymes
CO4: Appreciate the role of enzyme in regulation of metabolism
CO5: Understanding the role of enzymes in clinical diagnosis and industries

Part A- Answer all questions **(6X1 = 6 Marks)**
(Multiple choice questions)

1. Enzymes are polymers of **CO3K1**
   a.Hexose sugar b. Amino acids c.Fatty acids d. Inorganic phosphate
2. An enzyme urease was crystallized from the jack bean in 1926 by **CO3K2**
   a. John Nathrob b.Edward Buchner c. J.B.Sumner d. Louis Pasteur
3. Pepsin is an examples for the group of enzyme namely **CO3K2**
   a. Oxidoreductases b. Hydrolases c. Transferases d. Ligases
4. Identify the example of competitive inhibition from the following **CO3K3**
   a. Succinic dehydrogenase by malonic acid
   b. Cytochrome oxidase by cyanide
   c. Hexokinase by glucose-6-phosphate
   d. Carbonic anhydrase by carbon dioxide
5. K_{cat} refers to the **CO4K1**
   a. Michaelis menten constant c. Catalytic Efficiency
   b. Turnover number d. Substrate Concentration
6. Choose the immobilization technique that is the chemical method of enzyme immobilization **CO5K2**
   a. Adsorption b. Entrapment c. encapsulation d. Covalent Binding

Part B **3 x 6 = 18**
Answer the following
Answers should not exceed 200 words or one page

7. a. Classify enzymes according to the IUB **CO3K2**
   (Or)
   b. Derive Michaelis Menten equation **CO3K2**
8. a. Explain allosteric Enzymes **CO3K3**
   (Or)
   b. Differentiate the terms enzyme units, turnover number and katal **CO4K2**
9. a. Review the steps for the chemical synthesis of peptides **CO5K3**
   (Or)
   b. Illustrate the basic mechanism of site directed mutagenesis **CO5K3**

Part C **3 x 12 = 36**
Answer the following not exceeding 700 words or four pages

10. a. Elaborate the factors affecting the enzyme activity **CO3K2**
    (Or)
    b. Relate the types of enzyme inhibition with examples **CO3K4**
11. a. Analyze any three methods for the measurement of enzyme catalyzed Reactions **CO4K3**
    (Or)
    b. Recognize the enzyme mediated regulation in metabolism **CO4K3**
12. a. Sketch the methods of enzyme immobilization **CO5K2**
    (Or)
    b. Appraise the applications of enzymes in industry **CO5K2**

Staff in-charge:
Aided Programme : Dr. Velvizhi
SF Programme : Dr.K.V.Shalini

Total Number of QP: 53 (aided)+40 (SF)