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, April 2025
II SEMESTER

Class: I PG | Time : 2 Hours
Major: Zoology | Maximum Marks : 60

23MZOC07 – BIOCHEMISTRY

Course Outcomes:

CO1: Impart knowledge on the biochemical concepts of bioenergetics
CO2: Gain perception on the basic structure and functions of biomolecules
CO3: Ability to grasp insight on metabolic pathway and able to relate with well being
CO4: Understand fundamental concepts on enzymes and their importance in biological reactions
CO5: Acquire information on the principles and practical experience of a wide range of biochemical techniques

Part A **1 X 6 = 6**

Choose the correct answers
Answer all questions

1. Identify the correct statement of protein domain CO3K2
   a) A small sequence of amino acids that binds to DNA
   b) An independent structural and functional unit within a protein
   c) A specific type of secondary structure
   d) A disordered region in a protein
2. Which alternative model describes the flexibility of the active site upon substrate binding? CO3K2
   a) Induced Fit b) Lock and Key c) Allosteric d) Osmotic
3. The movement of a compound in TLC is expressed as CO4 K2
   a) Partition coefficient b) Retention factor value
   c) Molecular weight d) Absorbance value
4. The centrifugation technique used for separating cell organelles is CO4 K1
   a) Analytical b) Differential c) Density gradient d) Filtration
5. What does Beer-Lambert's law relate to? CO5 K1
   a) Absorbance and wavelength b) Absorbance and concentration
   c) Concentration and viscosity d) Light scattering and density
6. The function of Ethidium Bromide in agarose gel electrophoresis is to CO5 K2
   a) denature DNA b) stain DNA by intercalating between base pairs
   c) increase DNA migration speed d) act as a buffer component

Part B **3x6 =18**

Answer ALL questions
(Each answer should not exceed 400 words or two pages)

7. a) Deduce the mechanism of enzyme inhibition CO3K1

OR

7. b) Explain the significance of the Ramachandran plot in protein structure analysis. CO3K2
8. a) Explicate the types and applications of preparative centrifuge CO4K1

OR

8 b) Reveal the buffer systems of body fluids and its importance in pH maintenance CO4K1
9. a) Comment on the types of spectra CO5K1

OR

9. b) Depict the key components required for performing agarose gel electrophoresis CO5K1

Part C **3x12 = 36**

Answer ALL questions
(Each answer should not exceed 800 words or four pages)

10. a) Portray the levels of organization of protein structure CO3K1

OR

10. b) Recapitulate the classification of enzymes with suitable examples CO3 K1
11. a) Illustrate the principle, methodology and applications of gas liquid chromatography CO4 K1

OR

11. b) Elaborate the steps involved in the determination of pH CO4K1
12. a) Discuss the principles, methodology and applications of polyacrylamide gel electrophoresis CO5K1

OR

12. b) Report on the principle, instrumentation and applications of atomic absorption spectroscopy CO5 K1

No. of Copies : 6 **Staff In – charge : Dr. M. Poonkothai**