

Term End External Examination 4th Semester (Session- July 2024)

Subject: Zoology

Course No and Title: ZOLC1422M/Physiology and Enzymology

Time: 2.15 hours Max Marks:100 Min. Marks:40

**Section A: Objective Type Questions**

**Q1. Choose the appropriate Answer: (8x1.5=12)**

- i. A physiological saline solution in which heart goes on beating for some time is known as  
 A Distilled water + NaCl    B Benzene Solution  
 C Ringer's Solution    D Aqua regia
- ii. Maximum reabsorption of Na and Glucose occurs in  
 A PCT    B DCT  
 C Bowman's Capsule    D Loop of Henle
- iii. Choose the odd one out  
 A Malleus    B Yellow Spot  
 C Stapes    D Incus
- iv. It is also known as Tunica nervosa  
 A Sclera    B Cornea  
 C Orna serrata    D Retina
- v. Which cell organelle has maximum number of enzymes  
 A Nucleus    B Mitochondria  
 C Ribosome    D Lysosome
- vi. This enzyme has the highest turnover number  
 A Hexokinase    B Enterokinase  
 C Cytochrome oxidase    D Carbonic anhydrase
- vii. The Lock and Key theory of enzyme action was proposed by  
 A Koshland    B Emil Fischer

C Louis Pasteur

D Kuhne

- viii. Which of the following enzymes is activated in phosphorylated form  
 A Glycogen Phosphorylase    B HMG CoA Reductase  
 C Pyruvate dehydrogenase    D Both B and C

**Section-B: Descriptive Type Questions (Short Type)**

**Q2: Answer all the Questions (8 x 4 =32)**

i.	Why is sino-auricular node known as Pacemaker?
ii.	Define Inspiratory Reserve Volume.
iii.	Draw a well labelled diagram of a Neuron.
iv.	What is Blind Spot?
v.	Define autocatalysis.
vi.	What are Proenzymes?
vii.	Write a short note on enzyme inhibition.
viii.	What does the number 450 indicate in Cytochrome P450?

**Section – C: Descriptive Type Questions (Medium Type)**

**Answer all the questions: (4 x 7=28)**

**Q 3.** Illustrate the structure of Hemoglobin molecule.

**OR**

Write a note on Ornithine Cycle.

**Q 4.** Describe the propagation of Action potential in a myelinated nerve fibre.

**OR**

What is rhodopsin cycle? Explain briefly.

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**Q 5.** State the general properties of enzymes.

**OR**

Write a short note on the classification of enzymes.

**Q6.** What is the significance of cytochrome P450 in drug metabolism.

**OR**

Comment upon Lineweaver-Burk Plot.

**Section – D: Descriptive Type Questions (Long Type)**

**Answer any two of the following: (2 x 14=28)**

**Q7.** Discuss how carbon dioxide is transported in blood.

**Q8.** Explain Sliding Filament theory in light of Cross Bridge Cycle.

**Q9.** Discuss in detail about the factors affecting enzyme activity.

**Q10.** What is reversible enzyme inhibition? Give its types and elaborate each with a suitable example.