Roll No. : .....

Total No. of Questions : **16**] [Total No. of Printed Pages : **3**

ZOOLSEM–110

M.Sc. (Ist Semester) Examination Dec., 2022

ZOOLOGY

Paper - II

(Biological Chemistry and Immunology)

*Time : **3** Hours*] [*Maximum Marks : **40***

The question paper contains three Sections.

Section–A **(Marks : 1 × 10 = 10)**

Note :– Answer all *ten* questions (Answer limit **50** words). Each question carries **1** mark.

Section–B **(Marks : 2 × 6 = 12)**

Note :– Answer any *six* questions by selecting at least *two* questions from each Unit (Answer limit **200** words). Each question carries **2** marks.

Section–C **(Marks : 6 × 3 = 18)**

Note :– Answer any *three* questions by selecting *one* question from each Unit (Answer limit **500** words). Each question carries **6** marks.

Section–A

1. (i) What are Hydrogen Bonds ?

   (ii) Write down *two* functions of carbohydrates.

(iii) What do you mean by essential Fatty Acids ?

(iv) Define Buffer.

(v) What do you mean by denaturation of proteins ?

(vi) What is Chargaff's rule ?

(vii) What do you mean by Active Site of enzymes ?

(viii) What is Innate Immunity ?

(ix) What are Memory Cells ?

(x) What do you mean by Active Immunization ?

Section–B

Unit–I

2. Write about non-covalent bonds found in biological systems.

3. Describe the process of Glycogenolysis.

4. Describe the synthesis of triacylglycerols.

Unit–II

5. Describe the functional classification of proteins.

6. Describe the importance of Nucleic acids.

7. Write about K_m or Michaelis-Menten constant.

Unit–III

8. Describe in brief about Autoimmunity.

9. Describe in brief about Hypersensitivity reactions.

10. Describe the process of vaccination.

Section–C

Unit–I

11. Describe the process and importance of Krebs cycle.

12. Describe the process of β-oxidation of Fatty acids (Even carbon) and its Energetics.

Unit–II

13. Describe the structure of Proteins.

14. Describe the Inborn Errors of Amino acid Metabolism.

Unit–III

15. Describe the structure and functions of Immunoglobulins.

16. Describe the structure and functions of Major Histocompatibility Complex (MHC).