# 2022

## ZOOLOGY — HONOURS

**Paper : CC-10**

**(Immunology)**

**Full Marks : 50**

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

Answer ***question no.*** 1 and ***any four*** questions from the rest.

1. Answer ***any five*** questions : 2
   (a) What is opsonization? 2
   (b) How many polypeptide chains make up MHC class I molecule? 1+1
   (c) What is hypervariable region of immunoglobulin? State its significance. 1+1
   (d) What are GALT and CALT? 2
   (e) Mention the biological functions of complements. 2
   (f) State two function of eosinophils. 2
   (g) Define lymphokines. 2
   (h) What are NK Cells? 2
   (i) What do you mean by passive immunization? 2

2. (a) What is complement system?
   (b) Describe the classical pathway of complement activation and MAC formation with diagram.
   (c) What are interferons? 2+(3+2+1)+2

3. (a) What is monoclonal antibody?
   (b) How does HAT medium facilitate selection of B-cell hybridoma?
   (c) State the properties of IgM. Draw a labelled diagram of IgG. 2+3+(2+3)

4. (a) State the major steps involved in the development of inflammation.
   (b) Distinguish between T-Cell and B-Cell.
   (c) Briefly discuss Gell and Coomb's classification of hypersensitivity reactions. 3+3+4

5. (a) Enumerate the role of $T_H$ Cells in B-Cell activation.
   (b) What is prozone effect?
   (c) Cytokines control adaptive immune response by regulating T-Cell activation and functions.— Justify the statement. 3+2+5

**Please Turn Over**

6. (a) Distinguish between Primary and Secondary Antigen-Antibody interaction.
   (b) Differentiate between live attenuated vaccine and subunit vaccine. Give examples.
   (c) Describe the structure of MHC-I molecule with diagram. 2+(2+2)+(3+1)

7. (a) What is the basic difference between RIA & ELISA?
   (b) Differentiate between humoral and cell mediated immunity mentioning the respective components.
   (c) Briefly discuss the events of T-Cell development. 2+4+4

8. Write short notes on (***any four***) : 2½×4
   (a) Hapten
   (b) Adjuvant
   (c) Affinity and avidity of antibody
   (d) Structural organization of lymph node
   (e) Chemokines
   (f) Antibody-dependent cell mediated cytokines (ADCC).

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