4. (a) Explain the processing and presentation of endogenous antigens in a cytosolic pathway. (6)

(b) Describe the various actions, properties and functions of cytokines. (6)

5. (a) Differentiate between class I and class II MHC molecules. Give detailed functions and applications. (6)

(b) Describe the role of various barriers involved in innate immune responses. (6)

6. (a) What are the effector cells of anaphylaxis and their biological responses in immediate and delayed type hypersensitivity. (6)

(b) Describe the structure and function of primary lymphoid organs. (6)

7. Write short notes on any **THREE** : (3×4=12)

(i) Clonal selection theory

(ii) Cardinal signs of Inflammation

(iii) Properties of antigen

(iv) Elucidate the structure of antibody

[This question paper contains 4 printed pages.]

05.01.2024 (M)

Your Roll No.....

Sr. No. of Question Paper : 4620 **G**

Unique Paper Code : 32237909

Name of the Paper : DSE-2: Immunology

Name of the Course : **B.Sc. (Honors) Zoology**

Semester : V

Duration : 3 Hours Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Question No. **1** is compulsory.
3. Attempt **five** questions in all.
4. Draw neat labelled diagrams wherever necessary.

1. (a) Define **(Any Five)** : (5)

(i) Abzymes

(ii) Agretope

(iii) Variolation

(iv) Antigenicity

(v) Superantigens

(vi) Transcytosis

(b) Distinguish between **(Any Five)** : (5×2=10)

(i) Neoantigenic and conformational epitopes

(ii) Autologous and allogenic antigens

(iii) Calnexin and calreticulin

(iv) Subunit and recombinant vaccines

(v) Plasma and memory cells

(vi) Type II and Type IV Hypersensitivity

(c) Expand the following : (5)

(i) PRR

(ii) CLIP

(iii) HSP

(iv) GPCR

(v) ISCOM

(d) Write the contribution(s) of : (3)

(i) S.A. Berson and R. Yalow

(ii) Wu and Kabat

(iii) Loius Pasteur

(e) Give the immunological significance : (2)

(i) Bence Jones proteins

(ii) C3b

(f) Give reasons : (2)

(i) Multivalent vaccines are better than monovalent vaccines.

(ii) Polymers of D-amino acids are poor immunogens.

2. (a) Describe the initiation and activation of the alternate complement pathway. (6)

(b) Define Immunogenicity. Discuss the factors influencing immunogenicity. (6)

3. (a) Explain in detail the structure and functions of IgA and IgD. (6)

(b) Illustrate and discuss the production and selection of monoclonal antibody by hybridoma technology. (6)

P.T.O.