

2019

B.Sc. (Hons)

4th Semester Examination

ZOOLOGY

Paper - C10T

Full Marks : 40

Time : 2 Hours

*The figures in the margin indicate full marks.  
Candidates are required to give their answers  
in their own words as far as practicable.*

**Group A**

1. Answer any *five* questions of the following : 5×2
- (a) Name two pattern recognition receptors which are located in the cytoplasm.
  - (b) Differentiate between Innate and Adaptive immunity.
  - (c) Which class of antibody is first formed during B-cell development. Write the full form of ELISA. 1+1=2

[ Turn Over ]

(d) What is a Toxoid ? Give one example of a Toxoid vaccine. 1+1=2

(e) What are autoimmune diseases ?

(f) How does affinity differ from avidity ?

(g) What is meant by adjuvant ? State the composition of Freund's complete adjuvant. 1+1

(h) Highlight the immunological significance of MAC (Membrane Attack Complex)

### Group B

2. Answer any *four* questions of the following : 4×5

(a) Discuss the phenomena of antibody - dependent enhancement of dengue infection.

(b) (i) What is opsonization ?

(ii) Write the full form of ROS and PAMP.

3+2

(c) What are CD markers ? What are their functions? Name two CD markers that are present on T-cell. 2+2+1

- (d) Schematically represent the pathway of presentation of exogenous and endogenous antigens by MHC molecules.  $2\frac{1}{2}+2\frac{1}{2}$
- (e) What is anaphylaxis ? Write down the mechanism involved in anaphylaxis.  $2+3$
- (f) What is meant by monoclonal antibody (mAb)? Name the technique employed for production of mAb. State the advantages of mAb over polyclonal antibody (pAb).  $2+1+2$

### Group C

3. Answer any *one* question of the following :  $1 \times 10$

- (a) (i) What are the differences between B-cell and T-cell epitopes ?  $2$
- (ii) State whether the following statement is true or false : "Each lymphocyte carries cell-surface receptors with multiple antigen specificity."  $1$
- (iii) Discuss how three signals are required for proper activation and effector function of T-cells.  $7$

[ Turn Over ]

- (b) Briefly describe the basic structure of the immunoglobulin molecule along with a suitable diagram.

What do you understand by isotype, allotype and idiotype. Give suitable examples for each.

4+6

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