

**U.G. 4th Semester Examination - 2022**

**ZOOLOGY**

[HONOURS]

**Course Code : ZOOL-H-CC-T-10**

**(Immunology)**

Full Marks : 40

Time : 2½ Hours

*The figures in the right-hand margin indicate marks.*

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

1. Answer any **five** questions of the following:

2×5=10

- a) What is haematopoietic cytokine? Write its function.
- b) Define Anaphylatoxin.
- c) Name the factors that are responsible for nonspecific host defence.
- d) Write the importance of monoclonal antibody production.
- e) What is meant by self-MHC restriction?
- f) How nature of immunogen does contribute to immunogenicity.

g) What is Freund's incomplete adjuvant? Write its application.

h) What do you mean by immunogenic tolerance?

2. Answer any **two** questions: 5×2=10

- a) Explain the term ADCC. Write its importance in host defence.
- b) How does Sandwich ELISA differ from indirect ELISA?
- c) Briefly describe the types of hypersensitivity reactions categorised by Coomb and Gell.
- d) Differentiate between inactivated vaccines and attenuated vaccines.

3. Answer any **two** questions: 10×2=20

- a) Draw and describe the basic structure of an immunoglobulin molecule. Briefly describe the functions of different antibody classes. Write the difference between antibody affinity and avidity. 5+3+2=10
- b) What do you mean by antigen processing and presentation? List the structural and functional differences between Class I and Class II MHC molecules. Compare antigen recognition process by T cells and B-cells. 2+5+3=10

c) Briefly describe the structure of T-cell receptor. What are the different mechanisms of complement activation pathway? Write the biological roles of complement components.

$$2+5+3=10$$

d) Write short notes on (any **four**):  $2\frac{1}{2} \times 4=10$

i) SCID

ii) RIA

iii) SARS

iv) Lymphoid organ

v) Filariasis

vi) Hapten

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