

Roll No. ....

Total Pages : 3

**325502**

**December 2023**

**B.Sc. (Life Science) – V SEMESTER**

**Zoology V Immunology (BLS-502)**

Time : 3 Hours]

[Maximum Marks : 75

*Instructions :*

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any **four** questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

**PART-A**

1. (a) What is acquired immunity? (1.5)
- (b) Define hypersensitivity. (1.5)
- (c) What are haptens? (1.5)
- (d) What do you understand by oxygen dependent killing of microorganism? (1.5)
- (e) Distinguish between apoptosis and necrosis. (1.5)
- (f) Differentiate between B cells and T cells. (1.5)
- (g) Define sandwich ELISA. (1.5)

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- (h) What are cytokines? What are their functions? (1.5)
- (i) Define delayed type of hypersensitivity. (1.5)
- (j) What do you understand by autoimmune disorder? (1.5)

### PART-B

2. (a) Explain the structure of lymph node with the help of diagram. (7.5)
- (b) With the help of diagram discuss the role of thymus gland in immunity. (7.5)
3. (a) Describe the four properties that determines the immunogenicity of an antigen. (4)
- (b) What are adjuvants? Distinguish between Freud's incomplete and complete adjuvants. (4)
- (c) Elucidate the basic structure of an antibody. Distinguish between isotype, allotype and idiotype. (7)
4. (a) Explain endogenous pathway of antigen presentation including antigen processing. (7.5)
- (b) Describe classical pathway of complement system. (7.5)
5. (a) Differentiate between Type I and Type II hypersensitivity. (3)
- (b) Discuss any **three** of the following : (4×3=12)
- (i) Severe combined immunodeficiency.

- (ii) DiGeorge syndrome.
- (iii) Myasthenia gravis.
- (iv) Rheumatoid arthritis.
- (v) Pernicious anemia. (4×3=12)

6. (a) Write a note on different types of vaccines. (9)
- (b) Define the following terms:
- (i) Cytokines.
- (ii) Monoclonal antibodies. (3×2=6)
7. (a) Differentiate between class I and class II MHC molecules along with diagram. (6)
- (b) Write a note on hematopoiesis. (9)