

Total No. of Printed Pages—3

**6 SEM TDC DSE ZOO (CBCS) 3 (H)**

**2 0 2 4**

( May )

**ZOOLOGY**

( Discipline Specific Elective )

( For Honours )

Paper : DSE-3

( **Immunology** )

*Full Marks : 53*

*Pass Marks : 21*

*Time : 3 hours*

*The figures in the margin indicate full marks  
for the questions*

1. Fill in the blanks : 1×5=5

(a) The primary lymphoid organs involved in immune cell maturation are \_\_\_\_\_ and \_\_\_\_\_.

(b) The process by which antibodies bind

( 2 )

- (c) The specific region on an antigen where an antibody binds is known as \_\_\_\_\_.
- (d) Immunoglobulin responsible for mucosal immunity is \_\_\_\_\_.
- (e) The major histocompatibility complex (MHC) plays a crucial role in \_\_\_\_\_.

2. Write short notes on (any three) :  $4 \times 3 = 12$

- (a) Epitopes
- (b) Cytokines
- (c) Rheumatoid arthritis
- (d) Clonal selection theory

3. Distinguish between (any three) :  $4 \times 3 = 12$

- (a) Active immunity and Passive immunity
- (b) Adjuvants and Haptens
- (c) Antigenicity and Immunogenicity
- (d) Autoimmunity and Immunodeficiency

4. What is RIA? Describe the principle of RIA. Briefly describe the technique of RIA with suitable illustrations.

$2+4+6=12$



( 3 )

*Or*

Describe the structure of MHC molecule with appropriate illustrations. Explain the different classes of MHC molecules and mention their functions. 6+2+4=12

5. Describe the endogenous and exogenous pathways of antigen processing and presentation with appropriate illustrations. Highlight the differences between these two pathways in terms of the cellular mechanisms and antigen-presenting cells involved. 5+5+2=12

*Or*

What is hybridoma technology? Describe the process involved in generating monoclonal antibodies by hybridoma technology. List the biomedical applications of monoclonal antibodies. 2+8+2=12

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