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

**2 0 2 2**

( June/July )

**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) Substances added to the vaccines to increase its immunogenicity are called \_\_\_\_\_.

(b) The state of unresponsiveness of the immune system to a potential antigen is known as \_\_\_\_\_.

( 2 )

- (c) \_\_\_\_\_ is the scientist who proposed clonal selection theory.
- (d) \_\_\_\_\_ is released due to degranulation of Mast cells.
- (e) Immunoglobulines are produced by \_\_\_\_\_ cells.

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

- (a) Inflammation
- (b) RNA vaccine
- (c) Antigen-antibody interaction
- (d) RIA
- (e) Cytokines

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

- (a) Active and Passive immunity
- (b) Humoral and Cellular immune response
- (c) Innate and Acquired immunity
- (d) MHC class I and class II molecules
- (e) B-lymphocytes and T-lymphocytes epitopes

( 3 )

4. Describe 'hybridoma technology' for production of monoclonal antibodies. Also mention the applications of monoclonal antibodies. 8+4=12

*Or*

Describe briefly the structure and functions of different classes of immunoglobulins. 6+6=12

5. Define Antigen. Differentiate between antigenicity and immunogenicity. Also mention factors affecting immunogenicity. 2+6+4=12

*Or*

Describe briefly the components of complement system. Explain the classical pathway for complement activation. 6+6=12

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