

**2024/TDC (CBCS)/EVEN/SEM/  
BTCHCC-402T/005**

**TDC (CBCS) Even Semester Exam., 2024**

**BIOTECHNOLOGY**

**( 4th Semester )**

Course No. : BTCHCC-402T

**( Immunology )**

*Full Marks : 50*

*Pass Marks : 20*

*Time : 3 hours*

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

**UNIT—I**

**1. Answer any *two* of the following questions :  $2 \times 2 = 4$**

- (a) Define immune response.
- (b) Write a note on helper T-cells.
- (c) Write about suppressor T-cells.

**2. Answer any *one* of the following questions : 6**

- (a) Give an illustrated account of components of mammalian immune system.

**24J/642**

*( Turn Over )*



( 2 )

- (b) Write a note on antibody maturation and class switching.

UNIT—II

3. Answer any *two* of the following questions :  $2 \times 2 = 4$

- (a) Write a brief account of immunologic memory.  
(b) Write a about allelic exclusion.  
(c) Give a short account of idiotypes.

4. Answer any *one* of the following questions : 6

- (a) Give a detailed account of clonal selection theory.  
(b) Describe the genetic basis of antibody diversity in detail.

UNIT—III

5. Answer any *two* of the following questions :  $2 \times 2 = 4$

- (a) Define histocompatibility complexes.  
(b) How does the immune system recognize and respond to diseases?  
(c) Write about immunity to bacterial infection.

24J/642

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( 3 )

6. Answer any *one* of the following questions : 6

- (a) Give an account of class I and class II MHC antigens.  $3+3=6$   
(b) Write a note on antigen processing and presentation.

UNIT—IV

7. Answer any *two* of the following questions :  $2 \times 2 = 4$

- (a) Write a brief note on avoidance of recognition.  
(b) What is immunodeficiency?  
(c) Give a short account of autoimmune diseases.

8. Answer any *one* of the following questions : 6

- (a) Give an illustrated account of pathogen defense strategies.  
(b) Write notes on Myasthenia Gravis and Systemic Lupus Erythematosus.  $3+3=6$

UNIT—V

9. Answer any *two* of the following questions :  $2 \times 2 = 4$

- (a) Define vaccines.  
(b) Write the features of cytokines.  
(c) Write a brief account of RIA.

24J/642

( Turn Over )

( 4 )

10. Answer any *one* of the following questions : 6

- (a) Give a brief account of adjuvants. Add a note on recombinant vaccines. 3+3=6
- (b) Give an illustrated account of ELISA and its applications. 4+2=6

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24J—120/642

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