

## Bachelor of Science (B.Sc.) Semester—IV Examination

## BIOTECHNOLOGY (Immunology)

## Optional Paper-I

Time : Three Hours]

[Maximum Marks 50

N.B. :— (1) All questions are compulsory and carry equal marks.

(2) Draw diagrams wherever necessary.

✓ Describe active and passive immunity 10

OR

Describe various secondary lymphoid organs of immune system. 10

2 ✓ Describe different classes of antibodies 10

OR

(a) Give a brief idea of ADCC. 5

(b) Give a brief idea of MHC 5

✓ Describe the principle and significance of vaccination 10

OR

Write a note on :

(a) Concept of autoimmunity 5

(b) Anaphylaxis reaction. 5

✓ Write a note on :

(a) Direct ELISA test 5

(b) Complement fixation test 5

OR

Describe hybridoma technology for monoclonal antibody production. 10

5 Solve any TEN :

(I) Define epitope 1

(II) What is antigenicity? 1

(III) What is a hapten? 1

(IV) Give an example of cytokine. 1

(V) What are NK cells? 1

(VI) What is meant by TCR? 1

(VII) Name any one autoimmune disorder 1

~~(VIII)~~ Name the scientist who developed vaccine for the first time

1

~~(IX)~~ Name the cell involved in Type IV hypersensitivity

1

~~(X)~~ What is immunodiagnosis?

1

~~(XI)~~ Give one application of agglutination reaction.

1

~~(XII)~~ What is meant by radial immunodiffusion?

1