



RAN - 2003001104020002

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**B. Sc. Biotechnology (Sem. - IV) Examination April - 2023**

**BT - 09 : Fundamentals of Immunology**

**Time: 2 Hours ]**

**[ Total Marks: 50**

**સૂચના : / Instructions**

(1)

નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.  
**Fill up strictly the details of signs on your answer book**

Name of the Examination:

**B. Sc. Biotechnology (Sem. - IV)**

Name of the Subject :

**BT - 09 : Fundamentals of Immunology**

Subject Code No.: **2003001104020002**

Seat No.:

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Student's Signature

**Q. 1. Write answers (Any Four):**

**[08]**

- Define: Colony Stimulating Factors
- What is Opsonization?
- Granzymes.
- Membrane attack complex (MAC).
- Define: Bacteriocins
- Define: PAMPs and PRRs.

**Q. 2. Attempt Any Two:**

**[14]**

- Write a note on Antimicrobial peptides.
- Explain the Alternative Pathway for complement activation in detail.
- Describe the physical and mechanical barriers in innate resistance.

**Q. 3. Explain in detail Any Two:**

**[14]**

- Types of T cells.
- Cytokines and their role in innate immunity.
- Discuss in detail: recognition of foreignness.

**Q. 4. Attempt Any Two of the following:**

**[14]**

- A. Classes of immunoglobulins.
  - B. Give brief discussion on Antibody kinetics.
  - C. Write in detail: B cell activation.
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