

**MODEL QUESTION PAPER**  
**BSC I YEAR**  
**BIOTECHNOLOGY**  
**SECOND PAPER**  
**MICROBIOLOGY AND IMMUNOLOGY**

**TIME: 2 HRS**

**MAXIMUM MARKS: 75**

**MINIMUM MARKS: 33**

*Note: The question paper consists of three sections: A, B and C. attempt all the questions according to the given instructions.*

**Section A**

**Very Short Answer Type Questions**

**Note: Attempt all questions. Each question carries three marks (3 X 3 = 09)**

Q1. Write a short note on any three:

- a. General characteristics and structure of bacteria
- b. Plate count method
- c. NK cell
- d. Epitopes
- e. Autoclave

**Section B**

**Short Answer Type Questions**

**Note: Attempt all questions. Each question carries nine marks (4 X 9 = 36)**

Q2. Write a brief note on types of culture.

Or

Describe batch and continuous culture.

Q3. Explain growth curve and its mathematical expression.

Or

Describe factors affecting microbial growth.

Q4. Comment on any two:

- a. Phagocytosis
- b. T cell
- c. B cell
- d. Basophil, Eosinophil and Neutrophil

Q5. Explain the principle, working and applications of laminar air flow.

Or

Write a brief note on vaccines.

### **Section C**

#### **Long Answer Type Questions**

**Note: Attempt all questions. Each question carries fifteen marks (2 X 15 = 30)**

Q6. Write a detail note on Innate and acquired immunity.

Or

Write a detail note on primary and secondary immune organs.

Q7. Write an essay on ELISA, with its principle, types and applications.

Or

Write an essay on antibody, with its structure, types and functions.