

[Dec-16]

[SPDBT-105]  
M.Sc. DEGREE EXAMINATION

**Biotechnology**  
**I YEAR**

**MICROBIOLOGY AND IMMUNOLOGY**  
(Effective from the admitted batch 2009-10)

**Time: 3 Hours**

**Max.Marks: 70**

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**Instructions:** All parts of the unit must be answered in one place only.  
Figures in the right hand margin indicate marks allotted.

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1. Answer any **Four** of the following: (4x5=20)

- a) Antibiotics
- b) Microbiology of milk
- c) Bacteriophages
- d) Innate immunity
- e) Cytokine receptors
- f) T-cell tolerance
- g) Adjuvants

Answer all questions: (5x10=50)

**UNIT-I**

2. a) What are the different phases of bacterial growth curve

**OR**

b) Differences between gram +ve and gram -ve bacteria

**UNIT-II**

3. a) Describe the structure and classification of bacteriophages

**OR**

b) Describe the importance of clinically important viruses

**UNIT-III**

4. a) Discuss humoral and cell mediated immune response

**OR**

- b) What are the different Cells of immune system

**UNIT-IV**

5. a) Structure and classification of antibodies

**OR**

- b) Describe the classical pathway of complement system

**UNIT-V**

6. a) Explain immunological tolerance

**OR**

- b) Explain about ELISA

[29/I Y/216]