

**Third B.Pharm (Ayurveda) Degree Regular/Supplementary Examinations
October 2019**

Pharmaceutical Microbiology & Biotechnology

Time: 3 Hours

Total Marks: 100

- Answer all questions.
- Write **SECTION A** and **SECTION B** in separate Answer books (32 Pages). Do not mix up questions from Section A and Section B.

QP CODE: 304008

Section A- Microbiology

Marks: 50

Essay:

(10)

1. Enlist differences between prokaryotic and eukaryotic cells

Short notes:

(5x5=25)

2. Write about the various methods of sterilization by heat.
3. Write about Rideal – Walker test.
4. Describe sterility testing of pharmaceutical products.
5. Define immunity. Explain physiological and anatomical barriers of innate immunity.
6. Describe principle and procedure of negative staining

Answer briefly:

(5x3=15)

7. Define and give examples of bacteriophages.
8. Explain Bacterial growth curve
9. Define mutation and describe frame shift mutation.
10. Name any 3 Gram +ve bacteria.
11. What are interferons

QP CODE: 308008

Section B - Biotechnology

Marks: 50

Essay:

(10)

1. Write a detailed note on different methods of enzyme immobilization

Short notes:

(5x5=25)

2. Define hybridoma and explain its significance in industrial microbiology.
3. Write about Humulin.
4. Enumerate the characteristics of an ideal fermenter.
5. Describe briefly type IV hypersensitivity.
6. Antigen - Antibody reaction

Answer briefly:

(5x3=15)

7. What is meant by immunization. What are immunization products.
8. Describe principle of ELISA test.
9. Define genetic engineering, biotechnology and recombinant DNA.
10. Define conjugation, transduction and transformation.
11. Toxins and Toxoids
