

**QP CODE: 301006 (old scheme)**

**Reg. No: .....**

**Third Year B.Pharm Degree Supplementary Examinations June 2019**  
**Pharmaceutics IV**  
**(Pharmaceutical Microbiology and Biotechnology)**  
**(2010 Scheme)**

**Time: 3 Hours**

**Total Marks: 100**

- Answer all Questions.
- Draw diagram wherever necessary.

**Essays**

**(3x10=30)**

1. Describe salient features and applications of electron microscopy, fluorescence microscopy and phase contrast microscopy
2. Enlist and discuss on nutrients required for cultivation of bacteria
3. Discuss sterilization by filtration with suitable examples

**Short notes**

**(14x5=70)**

4. Pharmaceutical importance of fungi
5. How is antibiotic sensitivity test performed
6. Explain immobilization techniques of enzymes
7. Differentiate gram positive and gram negative cell wall
8. Immunological tolerance with suitable example
9. What are disinfectants. Enlist ideal properties of disinfectants
10. Explain any two methods of bacterial cultivation
11. Cultivation of Viruses
12. Enlist factors influencing rate of mutation
13. Applications of antigen-antibody reactions
14. Define sterility testing and methods used for sterility testing
15. Explain Bacterial Transformation
16. Mention applications of monoclonal antibodies
17. The biochemical tests for identification of bacteria

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