

# **2010 Scheme**

**QP CODE: 301006**

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

## **Third Year B.Pharm Degree Supplementary Examinations March 2025**

### **Pharmaceutics IV**

#### **(Pharmaceutical Microbiology and Biotechnology)**

**Time: 3 Hours**

**Total Marks: 100**

- *Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space*
- *Answer all parts of a single question together • Leave sufficient space between answers*
- *Write chemical structures/equations wherever necessary.*

**Essays**

**(3x10=30)**

1. Describe bacterial growth curve. Add a note on factors affecting growth of bacteria.
2. Explain the principle, procedure, applications and demerits of sterilization using autoclave.
3. What is immunity. Explain the immune mechanisms of the body.

**Short notes**

**(14x5=70)**

4. Provide an overview of different microscopic techniques.
5. Define the term microbial transformation. Discuss about various types of reactions mediated by microorganisms.
6. Explain the construction and operation of an industrial fermenter.
7. Discuss the methods used for the cultivation of viruses.
8. Explain the nutritional requirements of bacteria.
9. Define pure culture and elaborate on methods used for isolation of pure culture.
10. Explain the different steps involved in rDNA technology.
11. Protoplast fusion.
12. Explain different types of Hypersensitivity reactions.
13. Antigen-antibody reactions.
14. Discuss the principle, advantages, and limitations of sterilization by filtration.
15. Explain any one method used for microbial assay of antibiotics.
16. Discuss the applications of enzyme immobilization.
17. Describe the production and uses of amylase.

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