

# **2010 Scheme**

**QP CODE: 301006**

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

**Third Year B.Pharm Degree Supplementary Examinations  
September 2024  
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. What is staining. Write a note on bacterial staining techniques.
2. Classify disinfectants. Write the mechanism of action and uses of phenolic disinfectants.
3. What is sterilization. Classify the methods of sterilization. Explain dry heat sterilization.

**Short notes**

**(14x5=70)**

4. Microbial assay of antibiotics.
5. Describe the production of Vitamin B<sub>12</sub>
6. Discuss the classification of viruses.
7. Explain biotransformation process
8. Classify bacterial culture media and provide examples.
9. Explain conjugation in bacteria and its significance.
10. Humoral immunity.
11. Explain the biochemical methods used for identification of bacteria.
12. Discuss the storage and stability of vaccines.
13. Explain the design of an industrial fermenter with a labelled diagram.
14. Discuss techniques for enzyme immobilization and explain one method.
15. Describe the applications of genetic engineering in medicine.
16. Write the medical pharmaceutical importance of fungi.
17. Electron microscopy.

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