

# **2010 Scheme**

**QP CODE: 301006**

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

**Third Year B.Pharm Degree Supplementary Examinations  
December 2022  
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. Write principle and procedure involved in the sterilization using an autoclave. Add a note on its application.
2. Describe in detail the classification of microbes and its biochemical methods for identification.
3. Explain in detail about the extraction of Penicillin by fermentation process.

**Short notes**

**(14x5=70)**

4. Compound microscope with a neat diagram and use.
5. Explain the reproduction and cultivation of fungi.
6. Explain the compositions in bacterial culture medium.
7. Define transgenesis and give its applications.
8. Differences between conjugation and transformation.
9. Explain cellular and humoral immunity.
10. What are interferons and write its applications.
11. Define disinfectants and factors influencing disinfectants.
12. What are antibiotics. Explain microbial assay of antibiotics.
13. Explain the extraction of Vitamin B<sub>12</sub>.
14. Define microbial bio transformation and explain the biotransformation process.
15. Explain type 1 and type 2 hypersensitivity reactions with example.
16. Isolation of mutants.
17. Explain simple and acid-fast staining.

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