

# **2012 Scheme**

**Q P CODE: 311006**

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

**Third Year B.Pharm Degree Supplementary Examinations  
December 2022  
Pharmaceutics III  
(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. Explain production of Vitamin B<sub>12</sub> by fermentation process
2. Discuss factors affecting the efficacy of disinfection including its evaluation tests
3. Describe reproduction and cultivation of fungi with its pharmaceutical application

**Short notes**

**(14x5=70)**

4. Discuss the indicators used in validation of dry heat sterilization
5. Explain virus-host interactions
6. Elaborate bacterial counting
7. Explain antigen-antibody reactions with its applications
8. Explain active and passive immunization
9. How are bacterial vaccines standardized
10. Explain types of staining techniques
11. Explain downstream process of fermentation
12. Define sterility testing and methods used for sterility testing
13. Mention the applications of monoclonal antibodies
14. Explain Hybridoma techniques
15. Describe the phases in a bacterial growth curve
16. What are disinfectants. Enlist ideal properties of disinfectants
17. Enlist factors influencing rate of mutation

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