

**Third Year B.Pharm Degree Examinations June 2019**  
**Pharmaceutics III**  
**(Pharmaceutical Microbiology and Biotechnology)**  
**(2012 Scheme)**

**Time: 3 Hours****Total Marks: 100**

- Answer all Questions.
- Draw diagram wherever necessary.

**Essays****(3x10=30)**

1. Define immunity. Classify different types briefly elaborating each type with examples.
2. Discuss the morphology of bacterial cell with a neat labeled illustration.
3. Discuss the fermentative production of alcohol.

**Short notes****(14x5=70)**

4. Bacteriophages
5. Moist heat sterilization
6. Nutrient media and their applications
7. Principles of sterility testing
8. Reproduction in fungi
9. Examples of industrially important microbes and methods of screening such organisms
10. Methods of disinfectant evaluation for bactericidal activity
11. Examples of microbial transformation with reference to pharmaceuticals
12. Applications of enzyme immobilization
13. Compare downstream processing of various fermentation products with examples
14. Differentiate vaccines and sera
15. Antigen antibody reactions- types and importance
16. Discuss any two important factors affecting disinfection
17. Virus growth and reproduction

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