

GUJARAT TECHNOLOGICAL UNIVERSITY
B.Pharm. – SEMESTER V • EXAMINATION – WINTER -2022

Subject Code:BP504TP**Date: 02/01/2023****Subject Name: Pharmaceutical Microbiology****Time: 10:30am to 01:30pm****Total Marks: 80****Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What is the importance of sterility indicators and give its classification with examples for each type of sterilization process? **06**
- (b) Explain acid fast staining method and give examples of acid-fast bacteria. **05**
- (c) Summarize in a tabular form merits and demerits of each type of sterilization methods. **05**
- Q.2** (a) Elaborate on applications of microbiology and its future prospects **06**
- (b) Enlist structures external to bacterial cell wall and discuss the general composition and characteristics of bacterial cell wall. **05**
- (c) Classify organisms based on energy and oxygen requirements. **05**
- Q.3** (a) What are the criteria for ideal culture media? Give names of different types of media and discuss differential media in detail. **06**
- (b) Which are the different ways of bacterial growth? Explain generation time and write the generation time of E. coli in milk. **05**
- (c) Describe the method used for sterility testing of an injectable formulation. **05**
- Q.4** (a) Write a short note on IMViC test for identification of bacteria. **06**
- (b) How electron microscopy is different from optical microscopy? Explain. **05**
- (c) Enumerate different ways of quantitative estimation of bacterial growth and write any one method in detail for estimation of viable count of bacteria. **05**
- Q.5** (a) Write the name of organism used for microbial assay of following substances: **06**
- | | | |
|----------------|------------------|----------------|
| 1. Nystatin | 2. Erythromycin. | 3. Rifampicin. |
| 4. Riboflavin. | 5. Tryptophan | 6. Vitamin B12 |
- (b) Discuss applications of cell culture in pharmaceutical industry. **05**
- (c) Which are the factors affecting microbial spoilage of Pharmaceutical products? **05**
- Q. 6** (a) Give classification of disinfectants with examples citing mode of action for each class. **06**
- (b) Briefly explain asexual reproduction method in fungi. **05**
- (c) List different techniques to test efficiency of a disinfectant and briefly discuss any one of them. **05**
- Q.7** (a) Differentiate virus from a bacterial cell and explain the generalized structure of a virus with a suitable diagram. **06**
- (b) Draw layout of an ideal aseptic area and give clean room classification. **05**
- (c) On what principle microbial assay is based for antibiotics and discuss method A according to IP in detail. **05**
