

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B.Ph. SEMESTER- V EXAMINATION – SUMMER 2024**

**Subject Code: Pharmaceutical Microbiology****Date:13/05/2024****Subject Name: BP504TP****Time: 02:30pm to 05:30pm****Total Marks: 80****Instructions:**

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

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|-------------|--|-----------|
| <b>Q.1</b>  | (a) Define Microbiology. Explain the scope of microbiology.  | <b>06</b> |
|             | (b) How electron microscopy is different from optical microscopy? Explain.   | <b>05</b> |
|             | (c) Differentiate virus from a bacterial cell and explain the generalized structure of a virus with a suitable diagram.  | <b>05</b> |
| <b>Q.2</b>  | (a) Give a note on cultivation techniques of anaerobic bacteria.   | <b>06</b> |
|             | (b) Enumerate the methods for quantitative measurement of viable count of Bacteria and explain any one method in detail.   | <b>05</b> |
|             | (c) Differentiate Enriched and Enrichment media.   | <b>05</b> |
| <b>Q.3</b>  | (a) What is staining? Enumerate types of bacterial staining techniques and explain acid fast staining in detail.   | <b>06</b> |
|             | (b) Classify the various fungi and explain in brief about its reproduction and Cultivation.  | <b>05</b> |
|             | (c) Explain: D- value, F- value, Z- value, Resolution, Numerical aperture.   | <b>05</b> |
| <b>Q.4</b>  | (a) How will you sterilize Thermolabile materials? Explain the methods.  | <b>06</b> |
|             | (b) What is the importance of sterility indicators and give a brief account on Biological Indicators.  | <b>05</b> |
|             | (c) Classify organisms based on Temperature and Oxygen requirements.   | <b>05</b> |
| <b>Q.5</b>  | (a) Draw layout of an ideal aseptic area and give clean room classification.   | <b>06</b> |
|             | (b) Write a short note on IMViC test for identification of bacteria.   | <b>05</b> |
|             | (c) Write the name of organism used for microbial assay of following substances:<br>1. Amphotericin B 2. Penicillin 3. Rifampicin 4. Chloramphenicol<br>5. Doxycycline | <b>05</b> |
| <b>Q. 6</b> | (a) Enlist various evaluation tests for disinfectants. Describe the Rideal Walker test for phenol in detail.   | <b>06</b> |
|             | (b) Discuss microbiological assay of Vitamin B12.  | <b>05</b> |
|             | (c) Describe the Principle, construction, working of DRY HEAT STERILIZER with a neat labeled diagram.  | <b>05</b> |
| <b>Q.7</b>  | (a) Enlist types of spoilage. Discuss factors affecting microbial spoilage.  | <b>06</b> |
|             | (b) Explain the possible microbial contamination in cosmetics and their limit test.  | <b>05</b> |
|             | (c) Discuss applications of cell culture in pharmaceutical industry.   | <b>05</b> |

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