

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B.Ph. SEMESTER V • EXAMINATION – WINTER -2021**

**Subject Code:BP504TP****Date: 27/12/2021****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.

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|------------|-----|--|-----------|
| <b>Q.1</b> | (a) | Draw a neat labeled diagram of bacterial cell. Explain flagella in detail  | <b>06</b> |
|            | (b) | Define Microbiology. Explain the scope of microbiology   | <b>05</b> |
|            | (c) | Enumerate the conditions required for the growth of microorganism. Explain a typical bacterial growth curve  | <b>05</b> |
| <b>Q.2</b> | (a) | Classify microorganisms according to Oxygen Requirement, Temperature Requirement and Nutritional Requirements.   | <b>06</b> |
|            | (b) | Define culture media and classify them. Explain selective and differential media in detail.  | <b>05</b> |
|            | (c) | Classify microscopy. Describe electron microscopy in detail  | <b>05</b> |
| <b>Q.3</b> | (a) | Differentiate: (i) Gram positive and gram negative cell wall.<br>(ii) Prokaryotic and Eukaryotic organisms.  | <b>06</b> |
|            | (b) | Enumerate methods for the isolation of microorganisms. Discuss Streak plate method in detail   | <b>05</b> |
|            | (c) | Define viable count & Total count. Enlist methods for viable and total count. Explain coulter counter method in detail.  | <b>05</b> |
| <b>Q.4</b> | (a) | Give mechanism of killing MOs in given sterilization method: Ethylene oxide sterilization, Pasteurization, Oil bath sterilization, UV radiation, Surface sterilization method, Tyndallization  | <b>06</b> |
|            | (b) | Classify staining techniques. Discuss gram staining in detail.   | <b>05</b> |
|            | (c) | Explain: D- value, F- value, Z- value, Resolution, Numerical aperture.   | <b>05</b> |
| <b>Q.5</b> | (a) | Name the Microorganisms used for the assay of the following ( <b>Any 6</b> ):<br>Tetracycline, Amphotericin B, Penicillin, Gentamicin, Streptomycin, Chloramphenicol, Bacitracin, Doxycycline. | <b>06</b> |
|            | (b) | Enlist various evaluation tests for disinfectants. Describe the Rideal Walker test for phenol in detail.   | <b>05</b> |
|            | (c) | Discuss cultivation of virus and fungi   | <b>05</b> |
| <b>Q.6</b> | (a) | How do you carried out sterility test for (i) Sulphacetamide Eye drop (ii) Benzyl Penicillin Injection (iii) Insoluble Powders.  | <b>06</b> |
|            | (b) | Discuss microbiological assay of Vitamin B12.  | <b>05</b> |
|            | (c) | Describe the construction and working of HORIZONTAL AUTOCLAVE with a neat labelled diagram   | <b>05</b> |
| <b>Q.7</b> | (a) | Enlist types of spoilage. Discuss factors affecting microbial spoilage   | <b>06</b> |
|            | (b) | Explain different tests used for detection of microbial contamination.   | <b>05</b> |
|            | (c) | Write in detail about construction and design of clean room/aseptic room.  | <b>05</b> |