Seat No./Enrollment No.: _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BACHELOR OF PHARMACY – SEMESTER 5 – EXAMINATION – SUMMER 2026

Subject Code: BP504TP **Date: 07/05/2026**

Subject Name: Pharmaceutical Microbiology

Time: 02:30 PM TO 05:30 PM **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)**	Explain bacterial growth curve in detail with labelled diagram.	**06**
	(b)	Differentiate i) Gram-positive and Gram-negative bacteria.	**05**
	(c)	Classy staining techniques and discuss differential staining in detail.	**05**
Q.2	**(a)**	Define sterility testing, and discuss method for the sterility testing of powder.	**06**
	(b)	List out various types of phenol coefficient tests for the evaluation of disinfectant and explain the Rideal-Walker test in detail.	**05**
	(c)	Define disinfectant, explain the properties of an ideal disinfectant and classify disinfectants with their mechanism of action	**05**
Q.3	**(a)**	Explain Principles and any one method of microbiological assay.	**06**
	(b)	Discuss Types of spoilage, factors affecting the microbial spoilage of pharmaceutical products.	**05**
	(c)	Explain phase contrast microscopy, dark field microscopy and electron microscopy.	**05**
Q.4	**(a)**	Discuss cultivation of Fungi and Viruses.	**06**
	(b)	Write in detail about clean area classification with its requirement in aseptic area.	**05**
	(c)	Write about physical and biological indicators of sterilization.	**05**
Q.5	**(a)**	Discuss isolation and preservation methods for pure cultures.	**06**
	(b)	Illustrate IMViC test for identification of bacteria.	**05**
	(c)	Discuss Moist heat sterilization with diagramme.	**05**
Q.6	**(a)**	Discuss factors affecting disinfectant selection with examples.	**06**
	(b)	Study of different sources of contamination in an aseptic area and methods of prevention,	**05**
	(c)	Discuss various quantitative measurements of bacterial growth and explain methods for the estimation of the viable count of bacteria	**05**
Q.7	**(a)**	Explain importance of culture media and discuss types of culture media based on their use.	**06**
	(b)	Draw a labelled diagram of bacterial cell and differentiate the Prokaryotes and Eukaryotes.	**05**

(c) What are the different methods for sterilization and explain Ethylene Oxide sterilization in brief. **05**

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