

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B. PHARM - SEMESTER- V • EXAMINATION – WINTER -2019**

**Subject Code: BP504TP**

**Date: 22/11/2019**

**Subject Name: Pharmaceutical Microbiology**

**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.**

- Q.1 (a)** Classify bacteria according to their physical requirement for the growth with suitable example **06**
- (b)** Differentiate following **05**
- i) Gram positive and Gram negative bacteria
  - ii) Bacteria and virus
- (c)** Enlist types of media for bacterial growth with suitable example. Explain selective and differential media **05**
- Q.2 (a)** Draw a labeled diagram of horizontal autoclave and discuss its principal, merits, demerits and applications. **06**
- (b)** What is differential staining technique? explain acid fast staining **05**
- (c)** Discuss cultivation of anaerobic bacteria in detail **05**
- Q.3 (a)** Classify the disinfectants. Enlist the factors affecting disinfection. Discuss any two **06**
- (b)** Enumerate the methods of evaluation of disinfectant. Explain Rideal-Walkar test **05**
- (c)** Explain various methods for the preservation of pure culture **05**
- Q.4 (a)** Explain significance of control test, Media and Method recommended for the sterility testing of Pharmaceutical product as per IP **06**
- (b)** Give a detailed account on Gaseous sterilization **05**
- (c)** Discuss sterility indicators for the validation of Sterilization methods **05**
- Q.5 (a)** Enumerate various methods used for microbiological Assay. Discuss one level assay method for microbial assay of antibiotics **06**
- (b)** How do you carried out the microbiological assay of Vitamin B12 as per IP **05**
- (c)** Explain electron microscopy with its application and limitation **05**
- Q. 6 (a)** Enumerate technique for the quantitative measurement of bacterial growth and explain any one method for viable count **06**
- (b)** Write a short not on IMViC test for the identification of bacteria **05**
- (c)** Discuss factors affecting the microbial spoilage of Pharmaceutical products **05**
- Q.7 (a)** Explain the various sources of contamination in an aseptic area and methods of prevention **06**
- (b)** Give the applications of cell cultures in Pharmaceutical industry **05**
- (c)** Explain various parameters to maximize the preservative efficacy of an antimicrobial agent **05**

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