

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
B. Pharm. – SEMESTER – V • EXAMINATION – WINTER • 2014

Subject Code: 2250002

Date: 28-11-2014

**Subject Name: Pharmaceutical Microbiology and
Biotechnology - I**

Time: 10:30 am - 01:30 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) Differentiate Disinfection & Sterilization. What are the ideal characters of the disinfectants and classify them with their mode of action? **06**
- (b) Give a brief account on **05**
i) Dynamics of Disinfection ii) Biological indicators in sterilization
- (c) Compare and contrast the Phenol Coefficient tests. **05**
- Q.2** (a) Differentiate Defined and Complex media. What are the various components of medium and uses of the same? Mention the various types of medium with suitable examples. **06**
- (b) With a neat labeled diagram, explain the bacterial cell components. **05**
- (c) Write short notes on Scanning Electron Microscopy. **05**
- Q.3** (a) Describe the construction and working of HORIZONTAL AUTOCLAVE with a neat labeled diagram. **06**
- (b) Write short notes on **05**
i) Cold sterilization ii) Radiation sterilization
- (c) Differentiate Depth filters and Screen filters. Explain screen filtration sterilization. **05**
- Q.4** (a) Explain the different techniques of Immobilization. **06**
- (b) Give applications of Immobilization. **05**
- (c) How to identify the microbes using dry mount techniques and explain the principle involved? **05**
- Q.5** (a) Explain the various enzymes of DNA metabolism. **06**
- (b) What are the steps involved in DNA replication and explain? **05**
- (c) Describe the historical development in the field of Biotechnology. **05**
- Q. 6** (a) Write morphological classification of Virus. Describe the structure and composition of Virus. **06**
- (b) Give a brief account on cultivation methods of ANAEROBIC organisms. **05**
- (c) Explain the methods of determining Viable Count. **05**
- Q.7** (a) Define: Pasteurization, Tyndallization, Okazaki fragment, Semi conservative replication, Transcription, Translation, Z -value, D-value, Inactivation factor, Thermal Death Point, Thermal Death time, Bio burden. **06**
- (b) Explain sporulation cycle of bacteria with a neat diagram. **05**
- (c) How to sterilize Oily injections, Bed sheet, Tissue transplants, Transfusion sets, Plastic instruments, Surgical Powders, Surgical dressings, Blood products, Insulin preparation, Petriplates? **05**
