

**GUJARAT TECHNOLOGICAL UNIVERSITY****B.PHARM - SEMESTER- 5 EXAMINATION – SUMMER -2019****Subject Code: 2250002****Date: 29-05-2019****Subject Name: Pharmaceutical Microbiology & Biotechnology – I****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) Define sterilization and classify the methods with mechanisms of action & name of the instrument used. Explain the autoclave. 06
- (b) Give a brief account on mechanical method of sterilization. 05
- (c) Write short notes on physical, chemical and biological indicators for checking the efficiency of autoclave 05
- Q.2 (a) Classify the staining techniques. Discuss gram staining method. 06
- (b) Differentiate bacteria and viruses. 05
- (c) Write application and scope of Pharmaceutical Microbiology. 05
- Q.3 (a) Enlist various evaluation tests for disinfectants. Describe the Rideal Walker test for phenol. Write its merits & demerits. 06
- (b) Define Disinfectant. Discuss in detail ideal properties of disinfectant. 05
- (c) Define the following terms: Bioburden, Antiseptic, Thermal death point, Bactericide, Sanitizer 05
- Q.4 (a) Classify methods of bacterial count. Differentiate between Total count and Viable count methods. Discuss plate count method of counting bacteria in detail. 06
- (b) Draw and discuss in detail normal bacterial growth curve 05
- (c) Classify bacteria according to their shape and size. Write functions of capsule and fimbriae. 05
- Q.5 (a) Explain salient features of enzyme immobilization. 06
- (b) Discuss any two methods of immobilization of enzymes. 05
- (c) Write note on bacterial flagella. 05
- Q.6 (a) Give a brief account on various staining techniques to identify microbes. 06
- (b) Classify the bacteria with respect to oxygen requirement, flagellar arrangement and temperature requirement. 05
- (c) Write short notes on oxygen toxicity to anaerobic organisms. 05
- Q.7 (a) Discuss in detail about various techniques used for maintenance and preservation of pure culture. 06
- (b) Write a detailed note on the scope of Biotechnology. 05
- (c) Discuss in detail about translation. 05
