

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
B. Pharm. – SEMESTER – V • EXAMINATION – WINTER • 2016

Subject Code: 2250002

Date: 22-11-2016

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.**

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|-------------|------------|---|-----------|
| Q.1 | (a) | Define sterilization. Classify various methods of sterilization. Write in brief about Hot Air Oven. | 06 |
| | (b) | Write brief note on Ethylene Oxide sterilization. | 05 |
| | (c) | Discuss in detail about Bubble pressure test used to measure pore size of membrane filter | 05 |
| Q.2 | (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.3 | (a) | Discuss the importance of staining in microbiology. Enumerate various staining techniques and write in detail about differential stains. | 06 |
| | (b) | Classify the bacteria based on the temperature and oxygen requirements. | 05 |
| | (c) | Differentiate between bright field and dark field microscopy. | 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) | Describe the structure of DNA and the process of DNA replication. | 06 |
| | (b) | Write a brief note on Regulation of gene expression in bacteria. | 05 |
| | (c) | Explain the three domain system of classifying microorganisms in detail. | 05 |
| Q. 6 | (a) | Describe the structure of virus in detail with a suitable diagram. Discuss methods of cultivation of viruses. | 06 |
| | (b) | Write a brief note on Streptomyces. | 05 |
| | (c) | Discuss in detail about various techniques used for maintenance and preservation of pure culture. | 05 |
| Q.7 | (a) | Write a brief note on applications of biotechnology in pharmacy. What are the different areas in biotechnology? | 06 |
| | (b) | Define enzyme immobilization. Write Advantages and disadvantages of enzyme immobilization. | 05 |
| | (c) | Enumerate various methods of enzyme immobilization. Discuss about cross linking method. | 05 |
