Seat No.: _____ Enrolment No. _____

# GUJARAT TECHNOLOGICAL UNIVERSITY

**B. Pharm - SEMESTER–5 • EXAMINATION – SUMMER -2018**

**Subject Code: 2250002 Date: 16/05/2018**

**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.**

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|---|---|---|---|
| **Q.1** | **(a)** | Enlist the methods of evaluation of disinfectant. Discuss phenol coefficient test. | **06** |
| | **(b)** | Differentiate: Gram +ve Bacteria and Gram –ve Bacteria, Bacteria and Virus. | **05** |
| | **(c)** | Write a note on TEM. | **05** |
| **Q.2** | **(a)** | Enlist the different methods of bacterial counting. Write a note on one of viable counting method. | **06** |
| | **(b)** | Write a short note on flagella and capsule. | **05** |
| | **(c)** | Define terms: D-Value, Z-Value, Bioburden, Sterility, MIC | **05** |
| **Q.3** | **(a)** | Enumerate various techniques of enzyme immobilization and explain any one in detail. | **06** |
| | **(b)** | Write a note on dark field microscopy. | **05** |
| | **(c)** | Discuss the scope of biotechnology in pharmacy. | **05** |
| **Q.4** | **(a)** | Classify Bacterial Identification methods. Discuss principle involved in Zeil-neelson Staining. | **06** |
| | **(b)** | (i) Comment: Oily injections in a sealed container can be sterilized by autoclave.<br>(ii) Comment: Oxygen is lethal or life for microorganisms. | **05** |
| | **(c)** | Write a brief note on Protein synthesis. | **05** |
| **Q.5** | **(a)** | Write a note on DNA Replication. | **06** |
| | **(b)** | Define sterility assurance.Write a note on Biological indicators. | **05** |
| | **(c)** | Write a note on Rickettsia and Actinomycetes. | **05** |
| **Q. 6** | **(a)** | Define: Autotrophs, Chemotrophs, Microaerophiles, Psychrophile, Facultative anaerobes, chemolithotrophs, Capinophiles. | **06** |
| | **(b)** | Differentiates: Prokaryotes and Eucaryotes<br>Differentiates: DNA and RNA. | **05** |
| | **(c)** | Enlist factor affecting disinfection.Discuss any two in detail. | **05** |
| **Q.7** | **(a)** | Classify Culture media.Discuss in detail any two culture media. | **06** |
| | **(b)** | Suggest suitable sterilization method for: Arachis oil, Boric acid, Surgical gloves, Glass beaker, Ascorbic acid injection. | **05** |
| | **(c)** | Give mechanism of killing: Ethylene oxide sterilization, Pasteurization, Oil bath sterilization, UV radiation, Surface sterilization method. | **05** |

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