

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE SEM-III Examination May 2012****Subject code: 131302****Subject Name: Environmental Microbiology****Date: 15/05/2012****Time: 02.30 pm – 05.00 pm****Total Marks: 70****Instructions:**

- 1. Attempt all questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**

- Q.1** (a) Highlight the importance of Microbiology in Environmental Engg. **07**  
(b) Enlist the chemical agents for control of microbes. Explain any one type of chemical agent. **07**
- Q.2** (a) Draw a neat and labeled diagram of bacterial cell and enlist & explain the Internal and external parts. **07**  
(b) Enlist and explain the methods of isolation of pure culture. **07**
- OR**
- (b) Write a brief note on “History of microbiology”. **07**
- Q.3** (a) Explain in detail the procedure for Standard Plate Count (SPC) test using serial dilution technique for milk. **07**  
(b) Write a short note on “Vinegar production” using microbes. **07**
- OR**
- Q.3** (a) Give the classification of bacteria based on shape and nutritional requirement. **07**  
(b) Draw a neat sketch to show the different stages of bacterial growth and explain about each stage. **07**
- Q.4** (a) Differentiate between Prokaryotes and Eukaryotes. **07**  
(b) Give the classification of Protozoa. Explain each type with the help of neat sketches. **07**
- OR**
- Q.4** (a) Write a short note on MPN test for water. **07**  
(b) What is the importance of pure culture? Explain the techniques for preservation of pure culture. **07**
- Q.5** (a) Enlist and explain the factors affecting antimicrobial action of a disinfectant **07**  
(b) Differentiate between (Any two): **07**  
(i) Disinfection and sterilization  
(ii) Antiseptic and Sanitizer.  
(iii) Dry Heat sterilization and moist heat sterilization
- OR**
- Q.5** Write the causes, symptoms, treatment and prevention of any two diseases. **14**

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