



**Eastern University, Sri Lanka  
External Degree Programme  
Third Year Examination in Science-1996/1997  
(June/August, 2004) (Repeat)**

**EXBT 201, Microbiology**

**Answer FIVE questions only**

**Time: 03 hrs**

- 1) a) What is the Gram stain?  
b) How does the structure of the cell-walls (envelopes) differ in Gram positive and Gram negative bacteria?
- 2) a) What are the bacteriophages and what is their structure?  
b) What is a prophage or temperate phage?  
c) What is lysogeny?
- 3) a) Why water must be subjected to microbial analysis?  
b) Why do water testing procedures look for coliform organisms rather than pathogens?
- 4) Write an essay on the sewage (waste water) treatment in municipalities?
- 5) Write an essay on the sterilization techniques used in Microbiology?
- 6) Write short notes on the following
  - a) Rhizosphere.
  - b) Replication of bacteriophages.
- 7) Explain the role of microorganisms in the biochemical transformations in the soil with suitable examples
- 8) a) Describe the importance of microorganisms in recycling of Nitrogen?  
b) What is the importance of nitrogen fixation?  
c) How roots are infected with rhizobia?