

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – I • EXAMINATION – SUMMER • 2014

Subject code: 711703

Date: 19-06-2014

Subject Name: Environmental Microbiology

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) Discuss the types of Bacteria on the basis of their mode of nutrition. **07**

(b) Spontaneous generation theory was a big hurdle for the scientists of 18th century – Explain. **07**

Q.2 (a) Give the detail steps of media preparation. Explain various types of media. **07**

(b) Elaborate in detail about Bright-field and Phase-contrast microscopy. **07**

OR

(b) Explain the techniques for evaluating the effectiveness of antimicrobial chemical agents. **07**

Q.3 (a) Give the detail of application of high temperature in the destruction of microorganisms. **07**

(b) Describe economic importance of algae. **07**

OR

Q.3 (a) Elaborate positive interactions of microbes present in soil with suitable examples. **07**

(b) What is Synchronous growth? Give the detailed idea about steady-state growth. **07**

Q.4 (a) Give the characteristics of *Enterobacteriaceae* and *Azotobacteriaceae*. **07**

(b) Explain in detail the biological treatment practiced in municipal wastewater-treatment plant. **07**

OR

Q.4 (a) Ribosomes are the site of protein synthesis. - Explain. **07**

Q.4 (b) Give in brief about TCA cycle. Explain energy production at the end aerobic respiration. **07**

Q.5 (a) Give an explanation how the activity of enzyme can be regulated by a cell. **07**

(b) Write a note on growth curve of bacteria. **07**

OR

Q.5 (a) Explain about the properties of enzymes. **07**

(b) Explain the life cycle of phage λ . **07**
