Seat No.:	Enrolment No.

## GUJARAT TECHNOLOGICAL UNIVERSITY ME – SEMESTER-1 (NEW) EXAMINATION – WINTER 2016

Subject Code: 2711702 Date: 03/01/2017 Subject Name: Environmental Chemistry & Microbiology Time: 2:30 pm to 5:00 pm **Total Marks: 70 Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. (a) Explain growth of microbes in environment. **07** 0.1 (b) Explain the determination of COD test procedure for wastewater sample. 07 0.2 (a) Explain sterilization in detail. 07 (b) Define Hardness. Explain Principle of EDTA titrimetric analysis. 07 (b) What is pH and pH scale? Describe different methods used for measurement of **07** pH. (a) What is Reverse Osmosis? How sea water is purified using this technique? **07** Q.3**(b)** Discuss With sketch replication of Bacterio Phages. 07 Q.3(a) What is Buffer solution? Explain buffer actions using suitable examples. 07 **(b)** Discuss conditions affecting enzyme activity. 07 **07** (a) Give the detail steps of media preparation. Explain various types of media. **Q.4 (b)** Differentiate & Explain: 07 i) Homogeneous equilibrium and heterogeneous equilibrium ii) Gram positive and gram negative bacteria, iii) Synchronous growth and steady state growth **Q.4** (a) Discuss the Whittaker's five-kingdom classification scheme. **07 (b)** Discuss the different modes of preservation of microorganisms 07 Q.5 (a) What is adsorption? Briefly explain Freundlich and Langmuir isotherm. 07 **(b)** Write a short note on flame photometer. 07 OR **Q.5** (a) Explain the procedure for MPN test. 07 **(b)** Write a short note on spectrophotometer 07

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