

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
M. E. - SEMESTER – I • EXAMINATION – WINTER • 2014

Subject code: 2711702

Date: 07-01-2015

Subject Name: Environmental Chemistry & Micro Biology

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 Explain: 07
 1. Common ion effect and diverse ion effect
 2. Homogeneous equilibrium and heterogeneous equilibrium
- B What is adsorption? Briefly explain Freundlich and Langmuir isotherm. 07
- Q-2 A Explain order of reaction. Derive an expression for the rate of constant of a second order of reaction 07
- B Calculate the pH of a buffer solution containing 0.01 M acetic acid and 0.01 M sodium acetate. Then calculate the pH after enough HCl is added to give concentration of 0.001 M 07
- OR
- B What is hardness? Describe various methods used for measurement of hardness
- Q-3 A Explain in detail gas chromatographic analysis 07
- B Discuss the types of bacteria based on nutritional requirement 07
- OR
- Q-3 A Bring out the environmental significance of DO and BOD 07
- B Name various types of microscopy and explain electron microscopy 07
- Q-4 A Discuss the various conditions affecting enzyme activity 07
- B Distinguish between 07
 1. Gram positive and negative bacteria.
 2. Synchronous growth and steady state growth
- OR
- Q-4 A Explain role of microorganisms in environment 07
 B What is MPN? Briefly explain different tests used to measure MPN

