

GUJARAT TECHNOLOGICAL UNIVERSITY
M. E. - SEMESTER – I • EXAMINATION – WINTER 2012

Subject code: 711703N**Date: 12-01-2013****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 importance of microorganisms in applied field. **07**
(b) Discuss the Whittaker's five- kingdom classification scheme. **07**
- Q.2** (a) Why microorganisms stained? Name several different staining techniques and describe their applications. Give limitation of electron microscopy. **07**
(b) Draw a typical bacterial cell and identify all parts. Give function of each part. **07**
- OR**
- (b) Differentiate between the growth rate and generation time. Briefly describe methods for measurement of growth of microorganisms. **07**
- Q.3** (a) What is the chemical nature of DNA? Discuss Watson's and Crick's model of double helix of DNA. **07**
(b) Why are enzymes are important to a cell? Discuss the conditions which affects the activity of an enzyme. **07**
- OR**
- Q.3** (a) What is mechanisms of transformation? Discuss it with neat sketch. **07**
(b) Write short note on transcription with suitable diagram. **07**
- Q.4** (a) What is glycolysis? Discuss in brief the different routes of glucose utilization. **07**
(b) In what ways are fungi important to humans? **07**
- Q.4** (a) What is virus? Write in brief its general feature and occurrence. List the name of plant and animal virus. **07**
(b) How are algae similar to and different form higher green plants? Why are algae important in the food chain of aquatic environments? **07**
- Q.5** (a) Discuss the different modes of preservation of microorganisms **07**
(b) Describe the physical and chemical methods of food preservation. **07**
- OR**
- Q.5** (a) Write short note on " AIDS" and "Human cancer". **07**
(b) What is biogeochemical cycling? Discuss the carbon Cycling. **07**
