Seat No.: Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY M. E. - SEMESTER – I • EXAMINATION – WINTER • 2013

Subject code: 711703N Date: 03-01-2014 **Subject Name: Environmental Microbiology** Time: 10.30 am - 01.00 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 the role of microorganisms in Environment. 07 **(b)** Enlist the types of microorganisms important to environmental 07 engineer and explain each of them in brief. 07 Q.2(a) Explain microbial growth. **(b)** Write short note on "Staining". 07 OR (b) Write a short note on "Transmission Electron Microscope". 07 0.3 (a) With a suitable diagrams give Watson's and Crick's model of 07 double helix of DNA. (b) Define enzymes? Write in brief about enzyme action and their 07 different structural component. OR (a) What is glycolysis? Discuss in brief the different route of glucose 0.3 utilization? (b) What is transduction? Describe in detail the types of transduction 07 studied by you. **Q.4** (a) What is Virus? Write in brief its general feature and structure. 07 **(b)** Write a short note on "Bacteriophages" 07 OR Define nitrogen fixation. Write the mechanisms involved of 0.4 (a) nitrogen fixation. 07 **Q.4** (b) What is fermentation? Describe different type of fermentation 07 process carried out in industry. Q.5 (a) Describe the physical and chemical methods of food 07 preservation. **(b)** Write a short note on AIDS". 07 0.5 (a) What is Biogeochemical cycling? Discuss the Carbon cycle in 07 detail with sketch. (b) What is MPN? Write in Brief the different tests used to measure 07 the MPN.