

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-III (NEW) EXAMINATION – SUMMER 2019****Subject Code: 2131302****Date: 07/06/2019****Subject Name: Environmental Microbiology & Bioremediation****Time: 02:30 PM TO 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) Conceptualize the role of microbes in human life and Environment. **03**
(b) State the difference between Prokaryotic Cell & Eukaryotic Cell. **04**
(c) Draw and explain different parts of plant cell. **07**

- Q.2** (a) Explain: (i) Numerical Aperture (ii) Disinfection (iii) Decomposer **03**
(b) Draw the Bacterial Growth Curve and explain about each stage. **04**
(c) Explain the SPC test of milk using serial dilution techniques. **07**

OR

- (c) Explain the complete procedure to perform MPN test for water. **07**

- Q.3** (a) Give the difference between In-Situ & Ex-Situ Bioremediation. **03**
(b) List out the different techniques used for the preservation of pure culture and explain cryopreservation. **04**
(c) Write a short not on Chemical agents for the control of microbes. **07**

OR

- Q.3** (a) List out various culture methods used in microbiology. **03**
(b) Give the advantages and disadvantages of Bioremediation. **04**
(c) Write a short not on Physical agents for the control of microbes. **07**

- Q.4** (a) Differentiate between Stain and Dye. **03**
(b) State the classification of Microscopes. **04**
(c) Explain the procedure for production of Vinegar. **07**

OR

- Q.4** (a) What do you mean by Bioremediation? **03**
(b) Differentiate between: Light Microscope & Electron Microscope. **04**
(c) Explain the procedure for production of Lactic Acid. **07**

- Q.5** (a) Give the classification of fungi. **03**
(b) Describe gram staining in detail. **04**
(c) Enlist the diseases caused by protozoa and explain the symptoms, treatment and prevention of any one disease. **07**

OR

- Q.5** (a) Give the classification of bacteria. **03**
(b) Differentiate between Pasteurization & Sterilization. **04**
(c) List out the diseases caused by bacteria and explain the symptoms, treatment and prevention of any one disease **07**
