

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-III • EXAMINATION – SUMMER 2013****Subject Code: 131402****Date: 04-06-2013****Subject Name: Basic Food 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) State various groups of microorganisms and write major characteristics of each group. **06**
 (b) Explain various physical agents used to control growth of microorganisms. **04**
 (c) What are functions of cell membrane? **04**

- Q.2** (a) Draw typical bacterial cell indicating various internal and external structures and write their major functions **07**
 (b) Discuss various techniques are used for isolation and cultivation of pure culture of microorganism. **07**

OR

- (b) Give classification of bacteria based on arrangement of flagella. What are functions of flagella in bacterial? **07**
- Q.3** (a) Discuss various types of media used for cultivation of microorganism with specific important of each medium component. **07**
 (b) List the energy sources and nutritional compounds requires for bacterial growth and Classify the bacteria based on the requirement of temperature and oxygen for their growth **07**

OR

- Q.3** (a) Enlist various part and its functions used in light microscope. **07**
 (b) Define terms: (1) Generation time, (2) Numerical Aperture (3) α -value (4) Antagonism (5) Mordant. (6) Growth rate, (7) Heterotrops. **07**

- Q.4** (a) Write used of dyes in microbial study. Explain method of Gram staining of bacteria. **07**
 (b) Write contribution of following scientists: 1. Louis Pasteur 2. Antony van Leeuwenhoek 3. Francesco Redi 4. Edward Jenner. Write in short about Koch's Postulate on diseases. **07**

OR

- Q.4** (a) State various techniques for preservation for storage of microorganisms. **07**
 (b) List various extrinsic and intrinsic parameters affecting growth of microorganisms in food and explain role of microorganisms in food. **07**

- Q.5** (a) Give differences between electron and light microscopes. **07**
 (b) State role and mode of action of various antimicrobial chemical substances used to control microorganisms. **07**

OR

- Q.5** (a) Give account on the various mechanism of genetic transfer among bacteria for recombination. **07**
 (b) What are endospores? Indicate shape and location of endospore in bacterial cell and describe structural changes in the bacterial cell during sporulation with suitable diagram. **7**
