

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE SEM-IV Examination-Nov/Dec-2011**

**Subject code: 141402**

**Date: 25/11/2011**

**Subject Name: Food and Industrial Microbiology**

**Time: 02.30 pm -5.00 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) Answer the following to the points 08
- (i) Sourage in milk.
  - (ii) Blanching of fruits and vegetables.
  - (iii) Brewer's and Baker's yeast.
  - (iv) Enlist broad categories of products process by fermentation technique.
- (b) Discuss food preservation by use of chemicals. 06
- Q.2 (a) Discuss Spoilage of canned food by thermophilic sporeforming bacteria. 07
- (b) Discuss major component must be added in formulation of fermentation media. 07
- OR
- (b) Write the basic components and their major function in ideal fermenter. 07
- Q.3 (a) List various food borne disease. Discuss bacterial food poisoning. 07
- (b) Discuss sterilization of media. 03
- (c) Enlist various methods of cell disruption for intracellular products recovery 04
- OR
- Q.3 (a) Explain preservation of food by radiation. 07
- (b) Write about microorganisms associated with cereals. 03
- (c) What are ideal characteristic of inoculums 04
- Q.4 (a) Discuss production of citric acid by fermentation. 06
- (b) Discuss low temperature preservation of food. 04
- (c) Explain recovery process of alcohol from fermentation broth. 04
- OR
- Q.4 (a) Discuss spoilage of bread and flours by microorganism. 07
- (b) List changes in food due to radiation 03

- (c) Discuss any one method and factors affecting on it for separation of biomass from fermentation broth. **04**

- Q.5 (a) Explain function of Hops and Adjunct as an ingredient in Beer production. **06**  
(b) List four Spoilage conditions of fruits and vegetables by microorganisms. **04**  
(c) Brief about D value and F value for microorganisms. **04**

**OR**

- Q.5 (a) What are general characteristic of fermentation media? **06**  
(b) Give permitted dose of radiation for various food as per PFA. **04**  
(c) List various techniques for maintaining cultures. **04**

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