

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE SEM-VIII Examination May 2012

Subject code: 181404

Subject Name: Food Fermentation Technology

Date: 08/05/2012

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) Draw the schematic diagram of fermentor and enlist various requirements of industrial fermentor **07**
Describe different types of spargers used in industrial fermentor **07**
- Q.2** (a) Explain the steam traps with their significance **07**
(b) Define 'Primary screening' and describe any two techniques of primary screening used for industrial organism **07**
OR
(b) Explain solid state fermentation technique for fermented product with its merits and demerits. **07**
- Q.3** (a) Define containment and describe the steps used for allocating particular containment level. **07**
(b) Give mathematical derivation for destruction of media components during sterilization **07**
OR
- Q.3** (a) Define 'Del factor' and explain Richard's graphical integration method used for calculation of 'Del factor' during heating and cooling. **07**
(b) Give the flow diagram for preparation of wine with description of fermentation step. **07**
- Q.4** (a) Give ideal characteristics of inoculum and criteria used for transfer of inoculums to fermentation medium. **07**

- (b) Describe the industrial process for microbial production of α -amylase enzyme. **07**

OR

- Q.4** (a) Write a process flow diagram for industrial production of beer with process parameters and give the significance of individual ingredients used in beer production **07**
- (b) Discuss the formulation of fermentation media with functions of each medium components. **07**

- Q.5** (a) Describe the champagne and its process of preparation. **07**
- (b) What do you mean by ' $K_L a$ ' value and explain any one method used for determination of ' $K_L a$ ' value. **07**

OR

- Q.5** (a) Explain the effect of dissolved oxygen concentration on metabolite production during synthesis of amino acids **07**
- (b) Write a note material of construction for fermentor **04**
- (c) What do you mean by downstream and upstream processing **03**
