

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VIII • EXAMINATION – WINTER • 2014

Subject Code: 181404**Date: 25-11-2014****Subject Name: Food Fermentation Technology****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) Give requirements for industrial scale fermentor. **07**
(b) Describe various types of spargers used in industrial fermentors **07**
- Q.2** (a) State various methods for determination of 'K_{La}' value and explain any one in detail. **07**
(b) Define containment and describe the process of containment level allocation for fermentation processes. **07**
- OR**
- (b) Describe various methods for separation and purification of proteins **07**
- Q.3** (a) Enlist different types of valves used in fermentor and explain any two in detail. **07**
(b) Write a detailed note on steam traps **07**
- OR**
- Q.3** (a) Describe how 'Del factor' is calculated for heating up and cooling down periods? **07**
(b) Give mathematical derivation for effect of temperature on reaction rate constant during sterilization. **07**
- Q.4** (a) Explain solid state fermentation technique with its advantages and disadvantages. **07**
(b) Describe the technological process for preparation of wine. **07**
- OR**
- Q.4** (a) Describe the role and sources of carbon in fermentation media **07**
(b) Give ideal characteristics of inoculum and criteria used for transfer of inoculum to fermentation medium. **07**
- Q.5** (a) Write short notes on any one of the following **07**
a. Gel filtration
b. Affinity chromatography
c. Iso-electric focusing
(b) Describe various types of impellers used in fermentor **07**
- OR**
- Q.5** (a) What do you mean by 'Del factor'? Give mathematical derivation for it. **07**
(b) Give applications of industrial fermentation process and explain the upstream and downstream processing? **07**
