| Seat No.: | Enrolment No. |
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Subject Code: 181404

## GUJARAT TECHNOLOGICAL UNIVERSITY

## **BE – SEMESTER VIII– • EXAMINATION – SUMMER 2015**

Date: 05/05/2015

| _              |             | Name: Food Fermentation Technology   |          |
|----------------|-------------|--|----------|
| Time<br>Instru |             | 0.30am-01.00pm Total Marks: 70   |          |
| ilisti u       |             | Attempt all questions.  Make suitable assumptions wherever necessary.  Figures to the right indicate full marks.   |          |
| Q.1            | (a)<br>(b)  | Define 'Del factor' and give it's mathematical derivation Write a detailed note on "Design and material of construction for fermenter"   |          |
| Q.2            | (a)         | <u> </u>   | 07       |
|                | <b>(b</b> ) | of industrial fermenter  Describe the process of calculation of 'del factor' by Richards graphical integration method  | 07       |
|                |             | OR   |          |
|                | <b>(b)</b>  | Write down important steps in commercial manufacture of beer.  | 07       |
| Q.3            | (a)<br>(b)  |  | 07<br>07 |
| Q.3            | (a)<br>(b)  | Describe the process for industrial manufacture of wine  | 07<br>07 |
| Q.4            | (a)<br>(b)  | Describe various types of impellors used in fermenter<br>What are different theories to explain the mechanism of enzyme- substrate<br>interaction at active site?                    |          |
|                |             | OR   |          |
| <b>Q.4</b>     | (a)         | 1  | 07       |
|                | <b>(b</b> ) | classification of process organism on the basis of containment.  Give criteria used for transfer of inoculum to fermentation medium and enlist different characteristics of inoculum | 07       |
| Q.5            | (a)         | 1. Steam traps   | 07       |
|                | <b>(b</b> ) | <ul><li>2. Scale up of batch sterilization process</li><li>Give mathematical derivation for thermal destruction of essential media components during sterilization.</li></ul>        | 07       |
| Q.5            | (a)         | OR  Describe various types of stirrer glands and bearing found in industrial fermenter.  | 07       |
|                | <b>(b</b> ) |  | 07       |

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