Seat No.:		Enrolment No
	GUJARAT TECHNOLOGICAI	UNIVERSITY

BE - SEMESTER-VIII EXAMINATION - SUMMER 2016 Subject Code:181404 Date:16/05/2016 **Subject Name:**Food Fermentation Technology (Department Elective - II) Time:10:30 AM to 01:00 PM **Total Marks: 70 Instructions:** 1. Attempt all questions. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. 07 0.1 (a) Briefly describe the steps of beer production and draw a flow chart of the same. (b) Draw a diagram to depict parts of a fermenter. Describe the types and functions 07 of sparger and impeller. (a) Describe the process of containment level allocation for fermentation processes. **07** 0.2 (b) Describe the significance of KLa. Describe any two methods for determination 07 of 'KLa' value. OR (b) Describe culture transfers/ passages required to inoculate 100 Liter milk. In 07 what format culture is used in dairy industry for inoculation of such large bulk of milk. 0.3 Describe composition of a growth media typically used for microbial growth in 07 fermenter. Also enlist the significance of each ingredient of growth media. **(b)** What is the difference between batch, fed batch and continuous fermentation? 07 **Q.3** (a) Describe an experiment to isolate amylase enzyme. What is the application **07** amylase in food industry? (b) Give applications of industrial fermentation process and explain the upstream **07** and downstream processing? Justify the statement "Production of Beta- galactosidase enzyme is regulated by 07 0.4 Lac operon under the conditions of presence and/or absence of glucose/lactose". **(b)** What do you mean by 'Del factor'? Give mathematical derivation for it. 07 **Q.4** (a) Draw a flow chart to represent purification and recovery of proteins based on **07** size, polarity, solubility, and binding. Describe separation methods based on polarity and solubility principles. (b) Describe methods of preservation of cultures for industrial applications. **07** Give the flow diagram for preparation of wine with description of fermentation Q.5 **07** step. (b) How ammonium sulphate precipitation is better than precipitation under acidic 07 or alkaline condition. Explain the concept using an example. 0.5 (a) Enlist any 10 fermented products alongwith the starter organism used for its 07

preparation

(b) Write a descriptive note on Iso-electric focusing (2-dimensional **07** electrophoresis) with well-illustrated diagram.
