

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI • EXAMINATION – SUMMER 2013****Subject Code: 160402****Date: 27-05-2013****Subject Name: Fundamentals of Industrial Biotechnology****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) Discuss fermentation profile of amylase production. **07**
(b) What metabolic parameters should be considered during glutamic acid fermentation? **07**
- Q.2** (a) Explain various chemical and physical parameters to be taken care in ethanol fermentation. **07**
(b) Describe the fermentation and recovery process of streptomycin. **07**
- OR**
- (b) Compare chemical and biological methods of ethanol fermentation. **07**
- Q.3** (a) Discuss with suitable example process of solid state and submerge fermentation. **10**
(b) Draw a label diagram of fermentation process. **04**
- OR**
- Q.3** (a) What are the significances of medium for any fermentation process? What are the different media components required for an organism? **07**
(b) Explain in detail about primary and secondary screening. Write down the steps for screening of an antibiotic producing strain of an organism. **07**
- Q.4** (a) Explain recovery process of citric acid. **04**
(b) Name of organism used in citric acid fermentation. **03**
(c) Discuss in detail about fermentation profile of lipase production **07**
- Q.4** (a) Elaborate the steps of cephalosporin production. **07**
(b) Write a note on strain improvement. **07**
- Q.5** (a) Draw a schematic diagram of an ideal fermenter and discuss the ideal parameters of it. **07**
(b) Differentiate between primary and secondary metabolites with suitable examples. In which phase of growth cycle of an organism it produces? **07**
- Q.5** (a) Enlist various preservation techniques for industrially important strain of microorganisms. Discuss them in detail **10**
(b) Define and give explanation about batch culture, continuous culture and synchronize culture. **04**
