

GUJARAT TECHNOLOGICAL UNIVERSITY
BE – SEMESTER – VI (NEW).EXAMINATION – WINTER 2016

Subject Code: 2160508**Date: 26/10/2016****Subject Name: Biochemical Engineering****Time: 10:30 AM to 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) Explain the integrated bioprocess approach during production of a biochemical product. **07**
(b) Explain growth of a typical microbial culture in batch conditions. **07**
- Q.2** (a) Define feedback systems. Explain internal feedback system for biomass. **07**
(b) Discuss the details of body construction of a fermentor. **07**
- OR**
- (b) Explain the methods for the maintenance of Aseptic condition and containment. **07**
- Q.3** (a) Discuss the different types of spargers used for aeration in fermentor. **07**
(b) Discuss various types of impellers used for agitation in fermentor. **07**
- OR**
- Q.3** (a) Explain range of fermentation process. **07**
(b) State types of purification process and explain any one in detail. **07**
- Q.4** (a) Discuss the air sterilization technique used for Aerobic fermentation process. **07**
(b) Define cell disruption. Explain methods of cell disruption. **07**
- OR**
- Q.4** (a) Discuss basic functions of a fermentor for microbial or animal cell culture. **07**
(b) List out various methods for determination of K_{La} value. Explain any one in detail. **07**
- Q.5** (a) Discuss historical background behind development of fermentation process and a biochemical product with example. **07**
(b) Define fermentation process. Explain components of fermentation process. **07**
- OR**
- Q.5** (a) Explain fluid Rheology in fermentation. **07**
(b) Explain oxygen supply in fermentation process. **07**
