

**GUJARAT TECHNOLOGICAL UNIVERSITY****M.E –II<sup>st</sup> SEMESTER–EXAMINATION – JULY- 2012****Subject code: 1721601****Date: 06/07/2012****Subject Name: Industrial Biotechnology****Time: 10:30 am – 13:00 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 in detail about the isolation of industrially important micro-organisms. **07**  
(b) Explain the component parts of the fermentation process with a generalized schematic representation. **07**
- Q.2** (a) Discuss and Explain about the solid state fermentation processes. **07**  
(b) Write brief about minerals and chelators as a media component. **07**
- OR**
- (b) Give brief about Carbohydrates, oils and fats as a carbon source in media for fermentation. **07**
- Q.3** (a) Discuss in detail about the preservation of the industrially important microorganisms. **07**  
(b) What is sterilization? Derive the Del factor equation  $\nabla = A \cdot t \cdot e^{-(E/RT)}$  for the first order steam sterilization. **07**
- OR**
- Q.3** (a) Discuss the different mechanism of filter sterilization. **07**  
(b) What is continuous culture? Differentiate Chemostat and Turbidostat. **07**
- Q.4** (a) What is steroid? Discuss about the steroid transformation. **07**  
(b) Discuss the criteria for the transfer of inoculum and its effect on the productivity of the fermentation process. **07**
- OR**
- Q.4** (a) Describe the development of Inocula for Bacterial processes. **07**  
**Q.4** (b) What are metabolites? Describe about the antibiotics. **07**
- Q.5** (a) What are modern biotechnology and its products? Discuss about the biofertilizer. **07**  
(b) Describe the fermentative production process for vitamin B<sub>12</sub> along with its application. **07**
- OR**
- Q.5** (a) Discuss the major factors involved in the scale up of fermentation. **07**  
(b) Describe Production of microbial enzyme, 'Amylase' with its application. **07**

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