



# C. U. SHAH UNIVERSITY

## Summer Examinations - 2015

**Branch:** Science - Microbiology

**Semester:** IV

**Subject Code:** 4LS04MBO2

**Subject Name:** Bioprocess Technology

---

### Section – I

- Q.1 Answer the following:
1. Define the term: Fermentation (01)
  2. Discuss in brief the role of precursors in fermentation media. (02)
  3. Enlist any four desired properties of fermentation media. (02)
  4. How yeast mannan is useful in streptomycin fermentation? (02)
- Q.2 Answer the following:
1. How antifoam agents are useful in fermentation process? (05)
  2. Discuss various strain improvement strategies employed in fermentation Industries. (05)
  3. Discuss in brief air sterilization in fermentation process. (04)
- OR
- Q.2 Answer the following:
1. Write a note on medium sterilization in fermentation industries. (05)
  2. Write in detail on batch fermentation process. (05)
  3. Write in brief on tower fermenter. (04)
- Q.3 Answer the following:
1. Write in detail on design and use of pneumatic fermenters. (05)
  2. How dissolved oxygen level is controlled and monitored during Fermentation process? (04)
  3. How chemostat is useful in fermentation process? (05)
- OR
- Q.3 Answer the following
1. Write in detail on mechanically stirred fermenters. (05)
  2. How temperature, foam and pH is monitored during fermentation process? (05)
  3. Describe in brief steps of inoculum preparation for large scale fermentation process? (04)

### Section – II

- Q.4 Answer the following:
1. Define the term: Chemostat (01)
  2. Which microorganisms are used to produce amylase at industrial level? (02)
  3. Enlist any four advantages of SCP. (02)
  4. Enlist various mechanical methods for cell disruption. (02)
- Q.5 Answer the following:



## C. U. SHAH UNIVERSITY

1. How mycelial biomass is separated during product recovery? (05)
  2. Discuss in detail Penicillin fermentation process. (05)
  3. Discuss in brief scale-up process in fermentation industries. (04)
- OR
- Q.5 Answer the following:
1. Elaborate the strategies to recover bacterial biomass. (05)
  2. Write in detail  $C_2H_5OH$  fermentation process. (05)
  3. Write in brief on fungal amylase production by fermentation process. (04)
- Q.6 Answer the following:
1. Write in detail on Membrane filtration in product recovery. (05)
  2. How cyanocobalamin is produced by fermentation process? (04)
  3. Write a note on protease production by fermentation process. (05)
- OR
- Q.6 Answer the following
1. Write in brief on broth conditioning step of product recovery. (05)
  2. How vinegar is produced by fermentation process? (05)
  3. How penicillin is useful in biotin production? (04)