

# C.U.SHAH UNIVERSITY

## Winter Examination-2015

**Subject Name : Bioprocess Technology**

**Subject Code :4LS04MBO2**

**Branch :B.Sc. (Microbiology)**

**Semester : 4**

**Date : 23/11/2015**

**Time : 2:30 To 5:30**

**Marks : 70**

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
  - (2) Instructions written on main answer book are strictly to be obeyed.
  - (3) Draw neat diagrams and figures (if necessary) at right places.
  - (4) Assume suitable data if needed.
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- Q-1 Give answer in short- (14)**
- a) What UV causes in DNA?
  - b) SSF stands for.....
  - c) Define sterilization.
  - d) What is Inoculum?
  - e) Write names of two commercially produced organic acids.
  - f) What is membrane filtration?
  - g) What do mean by pH probe in bioprocess.
  - h) What is buffer?
  - i) What is antifoaming agent?
  - j) What are intercalating agents?
  - k) Amylases are used to break down.....
  - l) What is DO in fermentation?
  - m) Define osmosis.
  - n) What is mutagenesis?

**Attempt any four questions from Q-2 to Q-8**

- Q-2**
- a) What do you mean by osmosis? Describe the basic principle of RO. **7**
  - b) What do you mean aggitation? Describe its role and importance in fermentation process. **7**
- Q-3**
- a. **Write short notes on-** Strain improvement **7**
  - b. Centrifugation **7**



<b>Q-4</b>	Explain the role of following in fermentation media-	<b>2x7=14</b>
	<ul style="list-style-type: none"> <li>i. Buffer</li> <li>ii. steering agent</li> <li>iii. inducer</li> <li>iv. Inhibitor</li> <li>v. antifoam agents</li> <li>vi. trace elements</li> <li>vii. precursors</li> </ul>	
<b>Q-5</b>	<b>Briefly explain the following-</b>	
a.	Separation of cells by sedimentation	7
b.	Solid state fermentation	7
<b>Q-6</b>	<b>Write short notes on-</b>	
a.	Inoculum preparation	7
b.	Fed-batch culture	7
<b>Q-7</b>	Explain the following bioreactors with suitable diagram-	
a.	Photo bioreactor	7
b.	Air-lift fermentor	7
<b>Q-8</b>	a. Explain the process of production of microbial enzyme protease by fermentation process.	7
	b. Discuss the role and importance of process parameters with suitable examples.	7

