

Enrollment No: _____ Exam Seat No: _____

C.U.SHAH UNIVERSITY

Summer Examination-2017

Subject Name: Bioprocess Technology

Subject Code: 4LS04MBO2/4SC04BPT1 Branch: B.Sc.(Microbiology,Biotechnology)

Semester: 4 Date : 24/04/2017 Time: 10:30 To 01:30 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 Attempt the following questions: (14)

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|----|--|---|
| a) | Define media. | 1 |
| b) | What is an inducer? | 1 |
| c) | What is the primary role of precursors in bioprocesses? | 1 |
| d) | What is mutation? | 1 |
| e) | What do you mean by fermenter? | 1 |
| f) | Which sensor can be availed in a fermenter to monitor pH? | 1 |
| g) | Give any one application of photo bioreactor. | 1 |
| h) | What is the need to buffers during fermentation process? | 1 |
| i) | Filter sterilization process can be used for the sterilization of _____? | 1 |
| j) | What is an inoculum? | 1 |
| k) | Name industrial strain to be used in production of ethanol. | 1 |
| l) | What is the need of adding anti foaming agents? | 1 |
| m) | What is the difference between dry heat sterilization and Autoclaving? | 1 |
| n) | Define centrifugation. | 1 |

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

Q-2 Attempt all questions (14)

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|----|--|---|
| a) | Draw a schematic diagram of a typical fermenter. Label it and list the functions of 5 different parts. | 7 |
| b) | Discuss the design of media for the industrial scale processes. | 7 |

Q-3 Attempt all questions (14)

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|----|--|---|
| a) | Briefly explain floatation, sedimentation and flocculation in downstream processing. | 7 |
| b) | Write a note on use of centrifugation for the separation of fermented product. | 7 |

Q-4 Attempt all questions (14)

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|----|---|---|
| a) | Write a note on air-lift fermenter with labelled diagram. | 7 |
|----|---|---|



b)	Draw over all diagram of any typical fermentation process from Inoculum to the purified end product.	7
Q-5	Attempt all questions	(14)
a)	Discuss and differentiate batch and fed-batch fermentation processes.	7
b)	Discuss and differentiate Continuous and semi-continuous fermentation processes.	7
Q-6	Write a note strain improvement. Discuss its importance and methods to improve strain.	14
Q-7	Attempt all questions	(14)
a)	Discuss and differentiate chemostat and turbidostat briefly.	7
b)	Discuss with appropriate diagram about photo-bioreactor.	7
Q-8	Attempt all questions	(14)
a)	Write a note on fermentation process of antibiotics with any one example.	7
b)	Write a note on fermentation process of ethanol from yeast.	7

