

# C.U.SHAH UNIVERSITY

## Summer Examination-2019

**Subject Name : Bioprocess technology****Subject Code : 4SC05BPT1****Branch: B.Sc. (Microbiology)****Semester : 5                  Date : 14/03/2019****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)**

- a) Give any two examples of antifoaming agent. (1)
- b) Define : Fermentation. (1)
- c) What is the role of baffles? (1)
- d) Enlist the types of agitator. (1)
- e) Give the examples of single cell proteins. (1)
- f) What are primary metabolites? (1)
- g) Give the examples of Secondary metabolites. (1)
- h) Define : Chromatography. (1)
  
- i) Give the example of microorganism which is used for the production of Amylase enzyme. (1)
- j) Define : Bioreactor. (1)
- k) What is Sterilization? (1)
- l) Define : Antibiotics. (1)
- m) Enlist the types of chromatography. (1)
- n) What is batch culture? (1)

**Attempt any four questions from Q-2 to Q-8****Q-2                  Attempt all questions                  (14)**

- a) Draw the labeled diagram of fermenter & explain the types of spargers. (7)
- b) Explain the Airlift bioreactor including advantage, disadvantage & its applications. (7)

**Q-3                  Attempt all questions                  (14)**

- a) What is single cell protein? Write a detail note on microbial production of single cell protein. (7)
- b) Write a Growth Kinetics on the Batch culture. (7)



<b>Q-4</b>	<b>Attempt all questions</b>	<b>(14)</b>
a)	Write a detail note on the Effluent treatment.	(7)
b)	What is mass transfer coefficient? Explain the factors that affect the mass transfer coefficient.	(7)
<b>Q-5</b>	<b>Attempt all questions</b>	<b>(14)</b>
a)	Write a detail note on Microbial Metabolites.	(7)
b)	Explain the purification process of fermented products.	(7)
<b>Q-6</b>	<b>Attempt all questions</b>	<b>(14)</b>
a)	Explain the Packed tower bioreactor including advantage, disadvantage & its applications.	(7)
b)	Explain the Microbial production of Ethanol in detail.	(7)
<b>Q-7</b>	<b>Attempt all questions</b>	<b>(14)</b>
a)	Explain the Microbial production of Amylase in detail.	(7)
b)	Explain the development of inocula for Yeast processes.	(7)
<b>Q-8</b>	<b>Attempt all questions</b>	<b>(14)</b>
a)	Write a detail note on Media Preparation.	(7)
b)	Explain the physical agents of sterilization.	(7)

