

Enrollment No: \_\_\_\_\_

Exam Seat No: \_\_\_\_\_

# C. U. SHAH UNIVERSITY

## Winter Examination-2022

Subject Name : Bioprocess Technology

Subject Code : 4SC05BPT1

Branch: B.Sc. (Microbiology)

Semester: 5

Date: 22/11/2022

Time: 02:30 To 05:30

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) Define: Bioprocess Technology. 01
- b) Write down use of Baffles. 01
- c) Give the example of Primary Metabolites. 01
- d) What is difference between Batch and Fed-batch culture? 01
- e) Give the name of organism able to produce Amylase. 01
- f) Continuous culture is close system. True/False. 01
- g) A Tachometer is an instrument measuring the rotation speed of a shaft or disk, as in a motor or other machine. True/False. 01
- h) What do you understand by Effluent? 01
- i) Why product purification is most important step of Down Stream Processing? 01
- j) Give the example of Anti-foaming agent. 01
- k) Write difference between Homo lactic acid fermentation and Hetero lactic acid fermentation. 01
- l) What is Fermentation? 01
- m) Enlist the application of Air-lift Bioreactor. 01
- n) Give the examples of Microorganism which used to produce Single cell protein. 01

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

**Q-2 Attempt all questions (14)**

- A Write detail note on Alcohol Production. 07
- B Explain briefly about Design of Fermenter. 07

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

- A Explain about Range of Bioprocess Technology. 07
- B Write down design , advantage ,disadvantage and application of Airlift Bioreactor. 07



- Q-4** (14)  
Write detail note on Effluent treatment.
- Q-5** (14)  
**Attempt all questions**  
**A** Explain about Single cell protein. 07  
**B** Write short note on factor affecting on KLa. 07
- Q-6** (14)  
**Attempt all questions**  
**A** Write a detailed note on types of spargers. 07  
**B** Write a short note on Batch culture process. 07
- Q-7** (14)  
**Attempt all questions**  
**A** What do you understand by Sterilization? Explain Briefly. 07  
**B** Write a note on Product recovery and purification.(Any two methods) 07
- Q-8** (14)  
Write a note on Bioprocess measurement and control.

