

**STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086**  
**(For candidates admitted during the academic year 2019 - 2020 & thereafter)**  
**SUBJECT CODE: 19BY/PC/BF34**

**M. Sc. DEGREE EXAMINATION - NOVEMBER 2022**  
**BIOTECHNOLOGY**  
**THIRD SEMESTER**

**COURSE : CORE**  
**PAPER : BIOPROCESS AND FERMENTATION TECHNOLOGY**  
**TIME : 3 HOURS** **MAX. MARKS: 100**

**SECTION – A**

**ANSWER ALL QUESTIONS:** **(10 x 2 = 20)**

1. What are HEPA filters?
2. Write the significance of Baffles.
3. What is Negative Feedback inhibition?
4. Comment on Membrane Reactors.
5. How enzymes are fractioned by Salting out process?
6. Define Entrapment.
7. How are enzymes precipitated by Solvent?
8. What is Reverse osmosis?
9. Write the equation for  $K_{LA}$ .
10. List the applications of SCP.

**SECTION – B**

**ANSWER ALL QUESTIONS.** **(5 x 8 = 40)**

11. (a) Write a note on filter sterilization.  
(or)  
(b) Elaborate on the methods of preserving industrially important cultures.
12. (a) Explain the methods of Immobilisation and Illustrate with examples.  
(or)  
(b) Discuss purification of enzymes.
13. (a) Describe the chromatographic techniques used in downstream processing.  
(or)  
(b) Explain the different types of centrifuges.
14. (a) Explain the concept of mass transfer and add on solid-liquid mass transfer.  
(or)  
(b) Derive the microbial growth kinetics for different modes of operation of reactors.
15. (a) How is beer fermentation carried out?  
(or)  
(b) Mushroom cultivation is a viable industry – Justify.

**SECTION – C**

**ANSWER ANY TWO QUESTIONS.** **(2x20 = 40)**

16. Discuss the various antibiotics and enzymes produced by fermentation
17. Elaborate on the various isolation and purification techniques in downstream processing
18. Explain the three different types of reactors in detail.
19. Discuss screening and strain improvement techniques of industrially important organisms.

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