

**STELLA MARIS COLLEGE, (AUTONOMOUS), CHENNAI.**

**M.Sc. BIOTECHNOLOGY**

**END SEMESTER EXAMINATION, NOVEMBER 2021**

**BIOPROCESS AND FERMENTATION TECHNOLOGY**

**SUBJECT CODE: 19BY/PC/BF34**

**TIME: 3 HOURS**

**CLASS: II M. Sc**

**MAX MARKS: 100**

**SECTION - A**

**ANSWER ALL QUESTIONS**

**15 x 2= 30**

1. What is upstream process?
2. What is secondary metabolite?
3. Write the ideal properties of antifoam.
4. Define eddy diffusion.
5. Write the difference between primary and secondary screening of the microorganisms.
6. Draw any one type of agitator and add on its function.
7. What is feedback mechanism?
8. Define extracellular enzymes.
9. What is sedimentation?
10. Give an example of carriers used in immobilization methods.
11. What is the use of capillary electrophoresis?
12. List different types of drying methods.
13. Define second order reaction kinetics.
14. Write the advantages of packed bed reactor.
15. List the usage of microbes in oil recovery.

**SECTION – B**

**ANSWER ALL QUESTIONS**

**5 x10=50**

16. (a) Give an account on different types of modern agitators.  
(or)  
(b) Briefly explain the different preservation methods for industrially important microorganisms.
17. (a) Briefly explain the plug flow bioreactor and its applications.  
(or)  
(b) Explain how heat labile materials are sterilized?

18. (a) Briefly explain ion-exchange and gel permeation techniques.

(or)

(b) Write a short note on membrane separation.

19. (a) Give an account on liquid-solid mass transfer.

(or)

(b) Briefly explain batch culture kinetics.

20. (a) Explain production and uses of edible mushrooms.

(or)

(b) Comment on wine production and the types.

### **SECTION – C**

**ANSWER ANY ONE QUESTION**

**1 x 20= 20**

21. Elaborate on media formulation.

22. Discuss the production, harvest, recovery and uses of enzymes.