

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086
(For candidates admitted during the academic year 2023 - 2024)

M. Sc. DEGREE EXAMINATION - NOVEMBER 2024
BIOTECHNOLOGY
THIRD SEMESTER

COURSE : CORE
PAPER : BIOPROCESS AND FERMENTATION TECHNOLOGY
SUBJECT CODE : 23BY/PC/BF34
TIME : 3 HOURS **MAX. MARKS: 100**

Q. No.	SECTION A Answer all the questions	(10x1 = 10)	CO	KL
1	Give examples of industrially important organisms.		1	1
2	Comment on the importance of filter sterilisation.		1	1
3	Write the significance of photo-bioreactor.		1	1
4	Give examples of immobilized microbial enzymes.		1	1
5	List different filtration techniques in downstream processing.		1	1
6	State the principle of freeze drying.		1	1
7	Outline the nutritional requirements of inoculum in a fermentor.		1	1
8	Define Mass transfer.		1	1
9	Draw the fermentor.		1	1
10	State the applications of single-cell protein.		1	1
Q. No.	SECTION B Answer all the questions	(5x2 = 10)	CO	KL
11	How do you isolate industrially important organisms?		1	2
12	Write the difference between physical and chemical methods of disruption.		1	2
13	What is the importance of fermentor?		1	2
14	Differentiate between Liquid-solid and Liquid-liquid transfer.		1	2
15	Write a note on the uses of probiotics.		1	2
Q. No.	SECTION C Answer all the questions	(4x10 = 40)	CO	KL
16	Explain media design. (or) Classify types of fermentation.		2	3
17	Outline the key components of a fermentor and its function. (or) Give the different methods of immobilization.		3	4
18	Write a note on the removal of insoluble using sedimentation and flocculation techniques. (or) Outline any two purification techniques.		2	3

19	Explain the film theory of Mass transfer. (or) Write on the production of amino acids.	3	4
Q. No.	SECTION D (2x20 = 40) Answer all the questions	CO	KL
20	Give a detailed account of three important bioreactors (or) Propose a detailed explanation of inoculum development and sterilisation methods.	4	5
21	Evaluate the different types of mass transfer and kinetics involved. (or) Assess the production harvesting and recovery of enzymes and vitamins in detail.	5	6
