

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

M. Sc. DEGREE EXAMINATION - NOVEMBER 2023
BIOTECHNOLOGY
FIRST SEMESTER

COURSE : CORE
PAPER : MOLECULAR BIOLOGY AND RECOMBINANT DNA TECHNOLOGY
SUBJECT CODE : 23BY/PC/MR14
TIME : 3 HOURS

MAX. MARKS: 100

Q. No.	SECTION A	CO	KL
	Answer ALL Questions (10 x 1 = 10 marks)		
1	Tell the locomotory organelle of bacteria.	1	1
2	Identify the power house of eukaryotic cell.	1	1
3	Show how T-T dimers formed.	1	1
4	Recall cell-cell communication.	1	1
5	Define operon.	1	1
6	Write on base excision.	1	1
7	List 2 enzymes used in rDNA technology.	1	1
8	Find the role of restriction endonuclease.	1	1
9	Identify the primer requirements.	1	1
10	Describe the role of western blotting.	1	1
Q. No.	SECTION – B	CO	KL
	Answer ALL Questions (5 x 2 = 10 marks)		
11	Illustrate prokaryotic cell and label it.	1	2
12	Explain the role of DNA gyrase.	1	2
13	Interpret the role of H2A and H2B.	1	2
14	Discuss isoschizomers.	1	2
15	Explain RFLP in short.	1	2
Q. No.	SECTION C	CO	KL
	Answer ALL Questions (4 x 10 = 40 marks)		
16a	Compile the processes occurring in active transport.	2	3
16b	(or) Predict the structure and function of microtubules.		
17a	Classify the types of DNA repair mechanism.	2	3
17b	(or) Compute the role of different enzymes in cell regulation.		

18a	Outline the regulation of <i>trp</i> operon.	3	4
18b	(or) Distinguish between the types of apoptosis.		
19a	Investigate CRISPR as an important technology.	3	4
19b	(or) Categorize the types of Cancer.		
Q. No.	SECTION – D Answer ALL Questions (2 x 20 = 40 marks)	CO	KL
20a	Estimate the importance of molecular markers and its application.	4	5
20b	(or) Critically analyze the Gene Therapy and its application.		
21a	Construct a note on Genomic and cDNA library construction.	5	6
21b	(or) Generate a note on protein synthesis in eukaryotes.		
