

STELLA MARIS COLLEGE, (AUTONOMOUS), CHENNAI.
M.Sc. BIOTECHNOLOGY
END SEMESTER EXAMINATION, NOVEMBER 2021
MOLECULAR BIOLOGY AND RECOMBINANT DNA TECHNOLOGY

SUBJECT CODE: 19BY/PC/MR14

TIME: 3 HOURS

CLASS: I M.Sc.,

MAX MARKS: 100

SECTION - A

ANSWER ALL QUESTIONS

15x 2= 30

1. Write the functions of intermediate filaments.
2. What is exon?
3. Write the difference between Type I, II and III restriction enzymes.
4. Define cell cycle checkpoints and add on its function.
5. What is apoptosome complex?
6. What is photoreactivation?
7. What is B-DNA?
8. What is DNA methylation?
9. Define Operon and add a note on Lac operon.
10. What is the difference between RFLP and RAPD?
11. Write the function of plasmids.
12. Give an example of heat shock protein and its applications.
13. What are cosmids?
14. Expand SSCP and CAPS.
15. List the applications of RT-PCR.

SECTION – B

ANSWER ALL QUESTIONS

5x 10=50

16. (a) Explain the mechanisms of cellular adhesion molecules in cell communication.

(or)

- (b) Give an account on organization of prokaryotic genome.

17. (a) Write the principle and applications of PCR.

(or)

(b) Briefly explain Northern blotting technique.

18. (a) Give an account on pBR322 and pUC.

(or)

(b) Briefly explain the construction of cDNA library.

19. (a) Explain any two DNA repair mechanisms.

(or)

(b) Give an account on DNA replication in Eukaryotes.

20. (a) Explain the genes regulating cell cycle.

(or)

(b) Give an account on Histone modification.

SECTION – C

ANSWER ANY TWO QUESTIONS

1x 20= 20

21. Elaborate and illustrate different types of transport in plasma membrane.

22. Explain the applications of recombinant DNA technology in monoclonal antibodies.