



QP CODE: 25022347



Reg No :

Name :

M.Sc DEGREE (CSS) SPECIAL REAPPEARANCE EXAMINATION, APRIL 2025

Third Semester

M.Sc BIOTECHNOLOGY

CORE - BT020302 - RECOMBINANT DNA TECHNOLOGY

2019 ADMISSION ONWARDS

C86B7E64

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

*Weight **1** each.*

1. Explain the requirements and steps in homopolymer tailing?
2. List the steps in the cDNA library construction.
3. Briefly describe SV40 vector.
4. What are the 2 parameters that affect the DNA delivery to a host cell?
5. Name the marker genes of kanamycin and hygromycin.
6. Describe briefly site specific recombination.
7. State the contributions of Kary Mullis.
8. Write note on pyrosequencing.
9. What is humulin?
10. Mention the role of Cas in gene editing.

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

*Weight **2** each.*

11. Compare linkers and adapters with an example.
12. Describe the features and importance of pLitmus vectors .
13. Explain how immunochemical method is used for studying the translational products.
14. Justify the role of steroid hormones as heterogenous inducers.
15. Describe Colony Hybridisation?





16. Differentiate South-western and Far-western blotting techniques.
17. Write the applications of transgenic crops.
18. Outline briefly the therapeutic applications of nanoparticles.

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

Weight 5 each.

19. Explain in detail the isolation of DNA, RNA and plasmid from a bacterial cell.
20. Illustrate the organisation of Ti plasmid with special reference to its T-DNA and vir gene properties. Explain the mechanism of T-DNA transfer and plant transformation.
21. Write an essay on advanced molecular markers.
22. Explain the principles and applications of gene therapy?

(2×5=10 weightage)

