



QP CODE: 26019251



26019251

Reg No :

Name :

M.Sc DEGREE (CSS) EXAMINATION, MARCH 2026

Fourth Semester

M Sc BIOINFORMATICS

ELECTIVE - BT810402 - ADVANCED GENOMICS

2019 Admission Onwards

41C67627

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

Weight 1 each.

1. What are the characteristics of qualitative traits?
2. Describe briefly the working mechanism of reversible termination sequencing.
3. Why is fine mapping of genes necessary?
4. What is meant by map based gene isolation?
5. What is recombinant selection in marker-assisted backcrossing?
6. What is a Ti plasmid?
7. Why genes are mapped?
8. What is the significance of RFLP?
9. Explain briefly the significance of MHC genes.
10. Write a short note on genes that control production traits in plants.

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

Weight 2 each.

11. Write a note on high throughput genotyping technologies.
12. Describe briefly about F2 and backcross mapping populations and their significance.
13. Give an account on the major steps in association mapping.
14. Write a short essay on marker-assisted evaluation of breeding material.





15. Explain how gene introgression is carried out with the help of markers.
16. Outline the key steps in genetic linkage map construction.
17. Write a short essay on mtDNA and its significance.
18. Write a short essay on the applications of genome analysis.

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

Weight 5 each.

19. Explain how molecular markers are used for genetic mapping by taking SSR and SNP as examples.
20. Explain molecular mapping of QTLs using any of the biparental mapping population.
21. Explain the methods and significance of marker-assisted backcrossing and heterosis breeding.
22. Write in detail about different types of physical maps.

(2×5=10 weightage)

