

QP CODE: 22000842



Reg No :

Name :

M Sc DEGREE (CSS) EXAMINATION, APRIL 2022

Third Semester

Faculty of Science

M Sc BOTANY

**CORE - BY010302 - BIOTECHNOLOGY, BIOINFORMATICS AND
BIONANOTECHNOLOGY**

2019 ADMISSION ONWARDS

CCB6C051

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

Weight 1 each.

1. What is a bioreactor?
2. Distinguish between batch and continuous culture.
3. Write the importance of shoot tip culture.
4. What is BAC vector?
5. What is lipofection?
6. What is Site directed mutagenesis?
7. What are GMO's?
8. Briefly explain about DNA sequence databases.
9. Briefly discuss about Homology Modeling.
10. Briefly discuss the method of biological synthesis of Zinc Nanoparticles using plant extract.

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

Weight 2 each.

11. What is solid state fermentation. Explain its merits and demerits.
12. How will you standardise MS medium for indirect organogenesis.





13. Explain the process of propagation of recombinants.
14. What are the various virulence gene in Agrobacterium? Mention the role of each in infection and TDNA transfer.
15. Compare and contrast Real time PCR and Reverse transcriptase PCR.
16. Differentiate Genomics and Proteomics.
17. Write short notes on a) Global sequence alignment b) pair wise sequence alignment c) Multiple sequence analysis.
18. Discuss the impact of nanoparticles on various growth parameters in crops and germination and seedling emergence.

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

*Weight **5** each.*

19. Explain batch, fed batch and continuous mode of fermentation. Add a note on the advantages and disadvantages of each.
20. Explain the application of genetic engineering in genetic studies, agriculture and medicine.
21. Write an essay on procedure and applications DNA foot printing.
22. Give a detailed account on molecular phylogeny and its significance.

(2×5=10 weightage)

