



QP CODE: 20000746

Reg No :

Name :

MSc DEGREE (CSS) EXAMINATION , NOVEMBER 2020

Second Semester

M Sc MICROBIOLOGY

**CORE - MG030202 - MOLECULAR BIOLOGY AND RECOMBINANT DNA
TECHNOLOGY**

2019 Admission Onwards

E5FBEC76

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

Weight 1 each.

1. What is the practical application of minisatellite in DNA fingerprinting?
2. What is the difference between interwound and toroidal supercoiling?
3. What does rho independent termination of transcription in bacteria involve?
4. What are the analogues of lactose? Define induction.
5. What is the energy requirement of protein biosynthesis?
6. What is terminal glycosylation?
7. Why is the work reported by Cohen and Boyer and their coworkers in 1973 considered to be important?
8. Differentiate between plasmids and episomes
9. Write short notes on nested PCR.
10. How efficient is transgenesis? How do you account for the observed results?

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

Weight 2 each.

11. Enumerate the functions of protein involved in DNA replication.
12. What are the transcription start and stop signals in eukaryotes and prokaryotes? How are they recognized?





13. What is antisense RNA? How does it work? What is the obvious source of this regulatory RNA?
14. Describe the mechanism of action of streptomycin on protein synthesis.
15. Discuss the mechanism of chromatin remodeling machines.
16. Explain with suitable of vectors, the production of industrially important products.
17. Explain the principle and methodology of DNA Sequencing by chain termination method.
18. Compare and contrast transgenic animals and congenic animals with appropriate examples and applications.

(6×2=12 weightage)

Part C (Essay Type Questions)

Answer any two questions.

Weight 5 each.

19. Enlist the enzymes involved in prokaryotic DNA replication and comment on their function.
20. In what ways are most eukaryotic gene transcripts modified? What are the functions of these transcriptional modifications?
21. What is restriction modification (RM) system? Compare and contrast Type I, Type II and Type III RM systems.
22. Briefly describe a protocol for developing a vaccine against a toxin producing bacteria.

(2×5=10 weightage)

