



QP CODE: 25050437



25050437

Reg No :

Name :

MSc DEGREE (CSS) EXAMINATION DECEMBER 2025

First Semester

M Sc MOLECULAR BIOLOGY AND GENETIC ENGINEERING

**Core Courses - BS030103 - MOLECULAR STRUCTURE OF NUCLEIC ACID; GENE
REGULATION & EXPRESSION**

2019 Admission Onwards

6921DBF0

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

Weight 1 each.

1. What is the role of Helicase in Replication?
2. What is the role of telomers in replication?
3. How alteration of gene expression happened in salmonella?
4. How genomic position effects on gene expression?
5. Which amino acid is responsible for Attenuation?
6. How histone modification modulate chromatin structure?
7. What is capping?
8. What is RNA turnover?
9. What is wobble hypothesis?
10. What are transposons?

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

Weight 2 each.

11. How DNA is proved as a genetic material?
12. How homologous recombination differs from site directed recombination?
13. How negative regulation of Lac operon happens?
14. Explain the role of RNA polymerase II in transcription.





15. Critically evaluate different types of prokaryotic ribosomes.
16. Explain the role of miRNA in RNA interference?
17. Explain a brief account on different chemical mutagens.
18. How peptide bond formation happening in p-Site?

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

*Weight **5** each.*

19. Prepare a comment on how genes function at molecular level.
20. Explain how single holiday junction and double holiday junction happens in recombination.
21. Explain the steps involved in transcriptional regulation of eukaryotes, briefly.
22. How mutations effect on gene expression, explain with suitable examples.

(2×5=10 weightage)

