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**GS-357**

IV Semester B.Sc. Examination, May/June 2019  
(Fresh+Repeaters)  
CBCS - 2015-16 Onwards / NS 2012-13 Onwards)

**MICROBIOLOGY-IV**  
**Molecular Biology and Recombinant DNA Technology**

Time : 3 Hours

Max. Marks : 70

- Instruction :** 1. Answer all questions.  
2. Draw diagram wherever necessary.

**SECTION - A**

I. Answer the following :

5x2=10

1. Splicing
2. Lac operon
3.  $\lambda$  phage
4. Attenuation
5. RFLP

**SECTION - B**

II. Answer **any four** of the following :

4x5=20

6. Describe the structure of a gene.
7. Explain catabolite repression.
8. Write a note on p<sup>BR322</sup>.
9. Briefly explain DNA ligating molecules.
10. Explain the steps involved in nif gene cloning.

**P.T.O.**

**SECTION - C**

**III.** Answer **any three** of the following :

3x10=30

11. Explain the mechanism of transcription in prokaryotes.
12. Write a note on types of RNA and their role in protein synthesis.
13. Discuss DNA manipulative enzymes used in rDNA technology.
14. Explain animal and plant vectors.
15. What is blotting ? Explain western blotting in detail.

**SECTION - D**

**IV.** Answer **in one** sentence :

10x1=10

16. Inducer
17. Liposome fusion
18. Shine dalgarno sequence
19. Agarose
20. Sigma factor
21. Vector
22. Exon
23. Multiple cloning sites
24. Cohesive end
25. Gene therapy