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(21225)

Roll No.

M.Sc. III Sem.

PG-3638

M.Sc. Examination, Dec-2025

Medical Microbiology

Microbial Genetics, Molecular Biology

and Genetic Engineering

(MM-302)

Time : Three Hours]

[Maximum Marks : 50

Note : Attempt **all** Sections as per given instructions.

Section-A

Note : Attempt **all five** questions. Each question carries **2** marks. Very short answer is required not exceeding **75** words. $5 \times 2 = 10$

1. What are Okazaki fragments?
2. What are restriction endonucleases?
3. What are expression vectors?

P.T.O.

4. Define wobble hypothesis?

5. Role of base analogues in mutation.

Section-B

Note : Attempt any **two** questions out of the following **3** questions. Each question carries **5** marks. Short answer is required not exceeding **200** words.

$2 \times 5 = 10$

6. Write in brief on concepts and mechanisms of restriction digestion.
7. What is cDNA? Discuss the procedure of cDNA library construction.
8. Discuss in brief about basic features of the genetic code.

Section-C

Note : Attempt any **3** questions out of the following **5** questions. Each question carries **10** marks. Answer is required in detail. $3 \times 10 = 30$

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9. Give a detailed amount of transcription in prokaryotes. What are the differences between prokaryotic and eukaryotic transcription?
10. Discuss in detail about the various mechanisms of DNA repair.
11. What are cloning vectors? Discuss in detail about eukaryotic cloning vectors?
12. Describe the methods of DNA sequencing and their advantages and disadvantages.
13. Interpret the experimental evidences that established DNA as a Generic material.