

PD-280  
M.Sc. MICROBIOLOGY (SECOND SEMESTER)  
Semester Examination June 2021  
Paper -III  
Microbial Genetics and Molecular Biology

Time: Three Hours]

[Maximum Marks: 80  
[Minimum Pass Marks: 29

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Note: Answer from both the sections as directed. The figures in the right-hand margins indicate marks.

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**SECTION -A**

1. Write short notes on each of the following:

1X10=10

- (a) F-Prime
- (b) Sexduction
- (c) Name any one inhibitor of RNA synthesis
- (d) Ribozyme
- (e) Deciphering of genetic code
- (f) Superhelicity
- (g) Name any one inhibitor of protein synthesis
- (h) Attenuation
- (i) Operator
- (j) Inducer

2. Write short notes on each of the following:

2X5=10

- (a) Role of plasmids in Biotechnology
- (b) Types of DNA
- (c) RNA Polymerase
- (d) Gene expression
- (e) Catabolic repression

**SECTION -B**

Write descriptive answer of the following questions:

15X4=60

**UNIT-I**

3. Write an essay on types and mechanism of Bacterial transformation.

OR

Write an essay on Microbial genetics.

**UNIT-II**

4. Write an essay on mechanism of action of topoisomerases.

OR

Explain in detail on enzymes involved in eukaryotic DNA replication.

**UNIT-III**

5. Explain in detail on protein synthesis in eukaryotes.

OR

Write an essay on post translational modification of proteins.

**UNIT IV**

6. Write an essay on gene expression and regulation.

OR

Write an essay on negative regulation in *E coli* lac operon.

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