

16

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| SEMESTER | IV | QP CODE | 23MIBO41 |
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**P.R. GOVERNMENT COLLEGE (AUTONOMOUS), KAKINADA**  
**SEM END EXAMINATIONS APRIL -2025**

**II B.SC:MICROBIOLOGY: MOLECULAR BIOLOGY AND MICROBIAL GENETICS**  
**TIME: 2 HRS**

|                |  |        |    |   |   |   |   |   |   |   |           |    |
|----------------|--|--------|----|---|---|---|---|---|---|---|-----------|----|
| DATE & SESSION |  | REG NO | 23 | 2 | M | I | O | R | L | 6 | MAX MARKS | 50 |
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**SECTION-I**

Scheme of valuation

Answer any **THREE** of the following questions. And attempt one question from Each section  
 part Each question carries **TEN** marks **3X10=30Marks**

**PART-A**

1. Explain mechanism of DNA replication in Prokaryotes.6M  
and write enzyme and proteins involved in replication. 4M
2. Explain prokaryotic transcription.  
Initiation 2M  
Elongation 2M  
Termination 2M  
RNA polymerase structure and functions 2M  
Out come of transcription in bacteria. 2M
3. Discuss salient features of genetic code.10M

**PART-B**

4. Write various types of mutations.  
Spontaneous 3M, induced: physical 3M and chemical mutations 4M
5. Discuss mechanism and types of transduction in bacteria.  
Generalized transduction 5M  
specialized transduction 5M
6. Explain DNA repair mechanism with examples. 10M

**SECTION-II**

Answer any **FOUR** of the following questions.

**4 X 5=20Marks**

7. Discuss transposes in bacteria. 5M
8. Define plasmid and write functions of plasmid. 5M
9. Explain Constitutive genes. 5M
10. Conjugation. 5M
11. SOS repair. 5M
12. Explain RNA splicing. 5M
13. Explain lac operon. 5M