**Dr. V. S. KRISHNA GOVT. DEGREE COLLEGE (AUTONOMOUS)**

**MADDILAPALEM, VISAKHAPATNAM**

**B.Sc. MICROBIOLOBY (CBCS) FIRST YEAR**

**SEMESTER – III (W.E.F. 2022-23)**

**COURSE 3 – MOLECULAR BIOLOGY AND MICROBIAL GENETICS**

**Model Paper**

**Max Marks: 75 Time: 3 hours**

**SECTION –A**

Answer ALL questions (Draw the diagrams wherever necessary) (5 x 10 = 50 M)

1.a) Explain the Structure and organization of prokaryotic DNA.

Or

1.b) Write about the Enzymes and proteins involved in DNA replication.

2. a) Discuss the mechanism of transcription in prokaryotes.

Or

2. b) Discuss the mechanism of translation in prokaryotes.

3. a) Discuss the Physical and chemical mutagens.

Or

3. b) Explain the outlines of DNA damage and repair.

4. a) Describe various methods of genetic recombination in bacteria.

Or

4. b) Write about the One gene one enzyme and one gene one polypeptide hypothesis.

5. a) Write about different types of genes and their roles.

Or

5. b) Discuss the regulation of gene expression by lac operon.

**SECTION –B**

Answer any FIVE questions (Draw the diagrams wherever necessary) **5 x 5 = 25 M**

6. Transposons

7. Nucleosomes and chromatin

8. Structure of t-RNA

9. Genetic code and its properties

10. Point mutations

11. Chromosomal mutations

12. Concept of gene and cistron

13. Repressible operons

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**BLUE PRINT FOR QUESTION PAPER SETTER**

|  |  |  |  |
| --- | --- | --- | --- |
| **Units** | **10 M Questions** | **5 M Questions** | **Marks allotted to the Unit** |
| Unit 1 | 2 | 2 | 30 |
| Unit 2 | 2 | 2 | 30 |
| Unit 3 | 2 | 2 | 30 |
| Unit 4 | 2 | 1 | 25 |
| Unit 5 | 2 | 1 | 25 |
| Total No. of Questions | 10 | 08 | 140 |

**Note:**

1. The question paper setter are requested to kindly adhere to the format given in the above table.

2. The question paper setter are also requested to set the questions in the following way:

a. 70 % of questions – Remembering and Understanding type questions

b. 30 % of questions – Applying, Evaluating, Analyzing and Creating type questions