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**24-BT-21**

**M.Sc. II SEMESTER [MAIN/ATKT] EXAMINATION  
JUNE - JULY 2024**

**BIOTECHNOLOGY**

Paper - I

**[Molecular Biology]**

*[Max. Marks : 75]*

*[Time : 3:00 Hrs.]*

*[Min. Marks : 26]*

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**Note :** Candidate should write his/her Roll Number at the prescribed space on the question paper.  
Student should not write anything on question paper.  
Attempt five questions. Each question carries an internal choice.  
Each question carries **15 marks**.

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**Q. 1** Explain in detail the structural organization of Eukaryotic chromosome. (15 Marks)

**OR**

Write notes on -

- i) DNA Melting.
- ii) Euchromatin and Heterochromatin.

**Q. 2** Describe the enzymes and accessory proteins involved in Prokaryotic DNA replication. (15 Marks)

**OR**

Write notes on -

- i) Cre/Lox recombination.
- ii) Photo reactivation.

**Q. 3** Describe the process of Prokaryotic transcription and regulation. (15 Marks)

**OR**

Write notes on -

- i) Gene Silencing.
- ii) RNA Polymerase structure and assembly.

**Q. 4** Explain post transcriptional modifications in Eukaryotes. (15 Marks)

**OR**

**P.T.O.**

Write notes on -

- i) Molecular chaperones.
- ii) Catalytic RNA.

**Q. 5** Define Mutation. Describe the different types of mutations with suitable examples. (15 Marks)

**OR**

Write notes on -

- i) Replica Plating Technique.
- ii) Genome Polymorphism.

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