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**NB—09—2023**

**FACULTY OF SCIENCE**

**B.Sc. (First Year) (Second Semester) EXAMINATION**

**NOVEMBER/DECEMBER, 2023**

**(New Course)**

**BIOTECHNOLOGY**

**(Principle of Genetics)**

**(Saturday, 02-12-2023)**

**Time : 10.00 a.m. to 1.00 p.m.**

*Time—3 Hours*

*Maximum Marks—75*

**N.L. :—** (i) Attempt *all* questions.

(ii) Each question carries equal marks.

1. Describe in detail Mendel's laws of inheritance. 15

*Or*

(a) Explain in brief multiple allele. 8

(b) Write a note on complimentary gene and supplementary gene. 7

2. What is linkage ? Describe coupling and repulsion hypothesis of linkage.

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Or

- (a) Describe in detail crossing over. 8
- (b) Explain in brief numerical changes in chromosomes. 7
3. What is Mutation ? Describe in brief types of mutation. 15
- Or
- (a) Write a note on Base analogue and Alkylating agent. 8
- (b) Describe in brief classical and modern gene concept. 7
4. What is Plasmid ? Describe in detail types and properties of plasmid. 15
- Or
- (a) Describe in brief transposable elements. 8
- (b) Write a note on transformation. 7
5. Write short notes on (any *three*) 3×5=15
- (a) Duplicate Gene
- (b) Karyotype Study
- (c) UV Light
- (d) Conjugation
- (e) Transduction

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