8. Write short notes on the following : **4+4=8**

(i) Extra nuclear inheritance.

(ii) Transposable genetic elements.

9. Give the role of the following in protein synthesis : **2+2+2+2=8**

(i) m-RNA

(ii) t-RNA

(iii) r-RNA

(iv) Ribosomes.

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32091

B.Sc. EXAMINATION, 2025

(Second Semester)

(Re-appear Only)

BOTANY

Paper II

Genetics

Time : 3 Hours] [*Maximum Marks :* 40

Before answering the question-paper, candidates must ensure that they have been supplied with correct and complete question-paper. No complaint, in this regard will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting *two* questions from each Unit. Q. No. **1** is compulsory. All questions carry equal marks.

(Compulsory Question)

1. Define the following : **8×1=8**

(i) Phenotype

(ii) Introns

(iii) Gene

(iv) Linkage

(v) Multiple Allele

(vi) Plasmid

(vii) Codon

(viii) Heredity.

Unit I

2. Describe the structure of DNA. **8**

3. Describe Mendel's Laws of segregation and independent assortment. **8**

4. Define Allelic and Non-allelic gene interaction, and explain supplementary gene interaction. **8**

5. Write in brief on the following : **4+4=8**

(i) Nucleosome.

(ii) Properties of Genetic code.

Unit II

6. Give a concise account of Inducible and Repressible operon. **8**

7. What are Induced mutations ? Give a brief account of the various physical and chemical mutagens. **8**