QP Code: R253H008 | Reg. No | | | | | | | | | | | AY 24

Gandhi Institute of Engineering and Technology University, Odisha, Gunupur
(GIET University)

B. Sc. (Ag.) (Third Semester - Regular) Examinations, November – 2025

GPB 211 – Principles of Genetics

Time: 2 hrs | Maximum: 40 Marks

Answer ALL questions

(The figures in the right hand margin indicate marks)

PART – A **(5 x 2 = 10 Marks)**

Q.1. Answer ***ALL*** questions	CO #	Blooms Level
a. What is RNA? Briefly describe different types of RNA and their function.	CO2	L2
b. Briefly describe the concept of central dogma with a schematic diagram.	CO2	L5
c. Briefly describe the process of *hn*-RNA processing.	CO2	L3
d. What are the exceptions to Mendel's Laws of inheritance?	CO1	L2
e. What are sister chromatids and homologous chromosome?	CO3	L1

PART – B **(6 x 5 = 30 Marks)**

Answer ***Any six*** from the following questions	CO #	Blooms Level
2. What is mutation? Explain the types of mutation.	CO4	L2
3. What is structural chromosomal aberration? Explain the types of structural chromosomal aberration.	CO4	L1
4. What is DNA? Explain the process of DNA replication in Eukaryotes using a replication fork, mentioning all the enzymes involved.	CO2	L4
5. What is operon? Explain *lac* operon in *E. coli*.	CO5	L4
6. Explain the process of translation in eukaryotes.	CO2	L5
7. What is codon and genetic code? What are the properties of the genetic code?	CO3	L1
8. What is Meiosis? Explain the different stages of a cell (2n=4) undergoing meiotic division with proper diagram.	CO3	L6
9. Explain quantitative traits and how are they inherited? Explain multiple factor hypothesis?	CO5	L3

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