QP Code: R251G021 | Reg. No | | | | | | | | | | | AY 24

GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY, ODISHA, GUNUPUR
(GIET UNIVERSITY)

M.Sc. (First Semester - Regular) Examinations, February – 2025

24MBIPC11005 – Genetics

(Biotechnology)

Time: 3 hrs | Maximum: 60 Marks

Answer ALL questions

(The figures in the right hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

Q.1. Answer ***ALL*** questions	CO #	Blooms Level
a. Define Epigenetics. Explain the effect by environment	CO1	K1
b. Describe the reproductive exchange in the yeast.	CO2	K2
c. Explain the mechanism which is related to aneuploidy.	CO3	K2
d. Extricate the theorem of fisher.	CO4	K2
e. List the benefits of genetic purity.	CO5	K1

PART – B **(10 x 5 = 50 Marks)**

Answer ***ALL*** the questions	Marks	CO #	Blooms Level
2. a. Explain the relation from genotype to phenotype.	5	CO1	K1
b. How environment affects genome of our cell?	5	CO1	K2
(OR)			
c. Differentiate between Dominant Epistatic gene and complementary gene.	5	CO1	K1
d. Extricate the structure of gene with one example	5	CO1	K2
3.a. Differentiate between mendelian ratio and non-mendelian ratio.	5	CO2	K1
b. Explain suppressor molecules. Write their function.	5	CO2	K2
(OR)			
c. Explain analysis of gene in neurospora crassa with details.	5	CO2	K1
d. Explain conversion process of gene in the cell.	5	CO2	K2
4.a. Illustrate Mendels law of inheritance and their crosses with details.	10	CO6	K2
(OR)			
b. Enumerate the pyramiding of gene and their application with details.	10	CO6	K2
5.a. In a population of 1000 individuals 360 belong to genotype AA, 480 to Aa and the remaining 160 to aa. Based on this data, the frequency of allele A in the population is……	5	CO4	K2
b. Explain the mechanism of gene mosaicism.	5	CO3	K2
(OR)			
c. Explain Bayesian statistics. A could mean the event "Patient has liver disease." Past data tells you that 10% of patients entering your clinic have liver disease. B could mean the litmus test that "Patient is an alcoholic." Five percent of the clinic's patients are alcoholics. You might also know that among those patients diagnosed with liver disease, 9% are alcoholics. Find the data wrt previous data.	5	CO4	K2
d. How can you analyse the sex linked and autosomal diseases?	5	CO4	K2
6.a. Describe the Quantitative traits with examples.	10	CO5	K2
(OR)			
b. Enumerate QTL mapping in quantitative traits.	10	CO5	K2