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Daffodil International University

Department of Genetic Engineering and Biotechnology
Faculty of Health and Life Sciences
B. Sc. (Hons.) in Genetic Engineering and Biotechnology
Midterm Examination Summer 2026

Course Code: 0512-1201 **Course Title:** *Principles of Genetics*
Level and Term: L1, T2 **Section: 261-A** **Course Teacher Initials:** AR
Time: 1 Hour 30 Minutes **Total Marks:** 25

Answer the Following Questions: Marks

1	(a)	Define test cross, back cross and reciprocal cross with example.	[CLO1, PLO1, C1]	3.0
	(b)	Discuss the rediscovery of Mendel's work.	[CLO1, PLO1, C5]	2.0
2	(a)	State Mendel's three Laws of Inheritance.	[CLO2, PLO2, C1]	2.0
	(b)	Mention the exceptions of Mendelian inheritance with example.	[CLO3, PLO1, C4]	3.0
3	(a)	Explain how lethal gene deviates Mendel's first law.	[CLO3, PLO1, C6]	2.0
	(b)	What is epistasis? Illustrate the mechanism of duplicate recessive epistasis with example.	[CLO3, PLO2, C2]	3.0
4	(a)	Differentiate between gene and allele.	[CLO1, PLO1, C2]	2.0
	(b)	What is multiple allelism? Discuss the inheritance pattern of rabbit while crossing heterozygous Chinchilla and homozygous Himalayan rabbit.	[CLO3, PLO2, C5]	3.0
5	(a)	Define linkage group. Construct the linkage map of chromosome 2 and 3 of *Drosophila*.	[CLO2, PLO2, C3]	3.0
	(b)	Distinguish between genome mapping and karyotyping.	[CLO2, PLO2, C4]	2.0