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Daffodil International University

Department of Agricultural Science
Faculty of Agricultural Sciences
B.Sc. in Agricultural Science
Midterm Examination-Summer 2026

Course Code: 0819 2201 **Course Title: Genetics and Plant Breeding -I (Principles of Genetics and Cytogenetics)**
Level and Term: L-2, T-2 **Section: 251 (A & B)** **Course Teacher Initials: MAS & MAR**
Time: 1 Hr 30 minutes **Total Marks: 25**

Splitting any answer is strictly prohibited

1	(a)	Define euchromatin and heterochromatin. Enumerate their important characteristics	(PLO1,CLO1,C1)	2
	(b)	Draw and leble the typical structure of a somatic chromosome at the metaphase stage.	(PLO1,CLO1,C2)	3
2	(a)	Briefly describe the polytene chromosome with functions.	(PLO1,CLO1, C1)	3
	(b)	Contrast between the centromere and nucleolar organizer region.	(PLO1,CLO1,C2)	2
3	(a)	Differentiate the roles of different types of RNA in protein synthesis	(PLO2,CLO1,C4)	3
	(b)	What is the importance of the hydrogen bonds in DNA structure?	(PLO2,CLO1,C4)	2
4	(a)	Compare and contrast the different models of DNA replication.	(PLO2,CLO1,C3)	3
	(b)	Describe the characteristics of cpDNA and show how they are useful in plant studies.	(PLO2,CLO1,C3)	2
5	(a)	How do DNA packaged into chromosome?	(PLO1,CLO2,C3)	3
	(b)	Analyze the consequences of errors in DNA replication on an organism.	(PLO1,CLO2, C3)	2

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1-2
2-2
3-4
4-2
4-