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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
Final Examination Summer 2026

Course Code: 0512-2105 **Course Title: Animal Breeding**

Level and Term: L-2, T-1 **Section 252 (A+B)** **Course Teacher's Initial: KMH + SBN**
Time: 02 Hours **Total Marks: 40**

Answer the following questions:

			Marks
1.	(a)	Elaborate the guidelines for the use of biotechnology in the development of animal breeding programs.	[CLO2, PLO2, C6] 3.0
	(b)	List the major methods of selection used in farm animals and briefly discuss any three suitable selection methods.	[CLO1, PLO2, C4] 5.0
2.	(a)	Define Embryo Transfer (ET) and briefly discuss the major steps involved in ET technology, highlighting its advantages, limitations, and applications.	[CLO1, PLO2, C6] 4.0
	(b)	Demonstrate an overview of the *in vitro fertilization* (IVF) process and illustrate the complete IVF workflow with a suitable diagram.	[CLO3, PLO2, C2] 4.0
3.	(a)	Illustrate the techniques of artificial insemination (AI) in farm animals with suitable diagrams. What are the major applications of AI?	[CLO3, PLO2, C2] 5.0
	(b)	State the principles of semen collection using an artificial vagina (AV). Briefly describe and illustrate the procedure for semen collection from a bull using an assembled AV.	[CLO3, PLO2, C4] 3.0
4.	(a)	Provide an overview of bull semen processing, including collection, evaluation, dilution, and preservation, with the help of necessary diagram.	[CLO1, PLO2, C5] 4.0
	(b)	Define cloning and list its major types, applications, advantages, limitations, and ethical concerns. Illustrate the labelled steps of the Somatic Cell Nuclear Transfer (SCNT) process with a suitable diagram.	[CLO3, PLO2, C1] 4.0
5.	(a)	Provide an overview of the major methods used for pregnancy diagnosis in farm animals, with the help of suitable diagrams.	[CLO3, PLO2, C6] 4.0
	(b)	Illustrate and briefly discuss the major factors influencing fertility in farm animals.	[CLO3, PLO2, C2] 4.0