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International University

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

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

Level and Term: L-2, T-1 **Section: 251 (A+B)** **Course Teacher Initials: KMH & SBN**
Time: 02 Hours **Total Marks: 40**

			Marks
1.	(a) List the different methods of selection in farm animals. Briefly discuss Mass Selection and Pedigree Selection.	[CLO4, PLO2, C1]	4.0
	(b) Define Embryo Transfer (ET) and describe its advantages. Illustrate the ET process in dairy cattle with a properly labelled diagram.	[CLO6, PLO2, C1]	4.0
2.	(a) Explain the concept of *in vitro* fertilization (IVF) and outline its major steps. Illustrate the overall IVF process in mammals with a properly labelled diagram.	[CLO2, PLO2, C5]	5.0
	(b) Define Artificial Insemination (AI) and critically discuss its significance in modern animal breeding systems.	[CLO2, PLO1, C1]	3.0
3.	(a) List the methods and principles of semen collection in bulls using an Artificial Vagina (AV), and describe the step-by-step procedure for semen collection with an appropriate labelled diagram.	[CLO2, PLO2, C4]	4.0
	(b) Provide an overview of bull semen processing, including semen evaluation, dilution, and preservation.	[CLO3, PLO2, C6]	4.0
4.	(a) What is cloning, and what are its types? Diagrammatically illustrate the steps involved in the cloning of a lamb (Dolly).	[CLO1, PLO2, C1]	4.0
	(b) Enlist the methods of pregnancy diagnosis. Diagrammatically present the per-rectal palpation method used for pregnancy diagnosis in cattle.	[CLO1, PLO2, C4]	4.0
5.	(a) Illustrate the multifactorial nature of fertility in farm animals.	[CLO3, PLO1, C2]	3.0
	(b) Write short notes on (i). Nutrition and reproduction (ii). Tandem selection	[CLO1, PLO2, C3]	5.0

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