Reg. No ..... Name **25P2057**

M. Sc. DEGREE END SEMESTER EXAMINATION - APRIL 2025

SEMESTER 2 : AQUACULTURE AND FISH PROCESSING

COURSE : **24P2AQCT08/21P2AQCT08 : GENETICS AND BIOTECHNOLOGY OF FIN FISH AND SHELL FISH**

(For Regular 2024 Admission and Improvement/Supplementary 2023/ 2022/2021 Admissions)

Time : Three Hours Max. Weights: 30

PART A

Answer any 8 questions **Weight: 1**

1.	Selective Vs Differential medium	(U, CO 7)
2.	Tagging methods	(An, CO 1)
3.	Steroids used for sex transformation in fish.	(U, CO 5)
4.	Chromosome and its types	(An, CO 1)
5.	Biofertilzers	(U, CO 5)
6.	In-vitro fertilization	(U, CO 6)
7.	Fermentation	()
8.	Androgenesis	(U, CO 3)
9.	Embryonic stem cell (ESC)	(U, CO 7)
10.	Cifacryo	(U, CO 6)

(1 x 8 = 8)

PART B

Answer any 6 questions **Weights: 2**

11.	Approaches to genetic improvement	(An, CO 2)
12.	Cytogenetics techniques	(U, CO 3)
13.	Write a brief note on immunostimulants	(An, CO 1)
14.	Gene regulation	(An, CO 1, CO 2, CO 3)
15.	Inbreeding and cross breeding	(An, CO 1)
16.	Applications of cell-culture.	(U, CO 6, CO 7)
17.	Selection methods	(An, CO 1, CO 2)
18.	Write a short notes on Fluorescent In Situ Hybridization (FISH)	(U, CO 4)

(2 x 6 = 12)

PART C

Answer any 2 questions **Weights: 5**

19.	Describe the different types of immunostimulants and its effect in aquaculture.	(U)
20.	Comment on hybridization and ploidy as means of genetic improvement in aquaculture.	(U, CO 4, CO 6)

21. Molecular tools used in aquaculture (U, CO 6)

22. Properties of genetic code (An, CO 2)

(5 x 2 = 10)

OBE: Questions to Course Outcome Mapping

CO	Course Outcome Description	CL	Questions	Total Wt.
CO 1	Understand Induced breeding ,genetic improvement of the stock for better strains of cultural organisms	An	2, 4, 13, 14, 15, 17	10
CO 2	Genetic engineering and biotechnological principles for crop improvement	An	11, 14, 17, 22	11
CO 3	Understand the principles of genetic technique in cytogenetics	U	8, 12, 14	5
CO 4	Describing different hybridization techniques	U	18, 20	7
CO 5	Describing different types of probiotics and its application in aquaculture	U	3, 5	2
CO 6	Introduction to tools and techniques in modern biotechnology	U	6, 10, 16, 20, 21	14
CO 7	Analyze the developments of fish cell lines and their application in aquaculture	An	1, 9, 16	4

Cognitive Level (CL): Cr - CREATE; E - EVALUATE; An - ANALYZE; A - APPLY; U - UNDERSTAND; R - REMEMBER;