Reg. No	Name	24P2048
Neg. NO	Name	2472040

M. Sc. DEGREE END SEMESTER EXAMINATION - MARCH 2024 SEMESTER 2 - AQUACULTURE AND FISH PROCESSING

COURSE: 21P2AQCT08 - GENETICS AND BIOTECHNOLOGY OF FIN FISH AND SHELL FISH

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

Duration : Three Hours		Max. Weights: 30			
	PART A				
	Answer any 8 questions	Weight: 1			
1.	Mention the name of three fish vaccines.	(U, CO 8)			
2.	Vernalisation of oocytes.	(U, CO 3)			
3.	Structure of RNA.	(U, CO 6)			
4.	Conserved sequence.	(U, CO 6)			
5.	Nucleotides.	(U, CO 6)			
6.	Point mutation.	(An, CO 1)			
7.	Gonochorist in fishes.	(U, CO 6)			
8.	Gynogenesis and Adrogenesis.	(U, CO 3)			
9.	Genetic markers.	(U, CO 6)			
10.	Semiconservative model of DNA replication.	(U, CO 6)			
		$(1 \times 8 = 8)$			
	PART B				
	Answer any 6 questions	Weights: 2			
11.	Write a short note on Mendelian genetics and its application.	(An, CO 1)			
12.	Methods of gene cloning.	(An, CO 2)			
13.	What are the different immune-stimulants used in fin fish aquaculture.	(An, CO 1)			
14.	Describe the non-polymerase chain reaction methods of nucleic acid detection.	(U)			
15.	Monosex culture.	(U, CO 1, CO			
16.	Cryopreservation of gametes.	2) (U, CO 3, CO 6)			
17.	Solid state fermentation.	()			
18.	Primary and secondary cell culture.	(U, CO 7)			
		$(2 \times 6 = 12)$			
PART C					
	Answer any 2 questions	Weights: 5			
19.	Explain various aspects of bioremediation and its application in aquaculture.	(U, CO 5, CO 6)			
20.	Fish cell cultures, development of cell lines and their applications.	(An, CO 7)			
21.	Methods of transgenic fish production.	(U, CO 6, CO 7)			
22.	Explain genetic improvement programme in aquaculture.	(An, CO 2) (5 x 2 = 10)			

OBE: Questions to Course Outcome Mapping

СО	Course Outcome Description	CL	Questions	Total Wt.
CO 1	Understand Induced breeding ,genetic improvement of the stock for better strains of cultural organisms	An	6, 11, 13, 15	7
CO 2	Genetic engineering and biotechnological principles for crop improvement	An	12, 15, 22	9
CO 3	Understand the principles of genetic technique in cytogenetics	U	2, 8, 16	4
CO 5	Describing different types of probiotics and its application in aquaculture	U	19	5
CO 6	Introduction to tools and techniques in modern biotechnology	U	3, 4, 5, 7, 9, 10, 16, 19, 21	18
CO 7	Analyze the developments of fish cell lines and their application in aquaculture	An	18, 20, 21	12
CO 8	Understanding the different types of vaccination in fish genetics	U	1	1

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