Reg. No ..... Name **23P4034**

M. Sc. DEGREE END SEMESTER EXAMINATION : MARCH 2023

SEMESTER 4 : AQUACULTURE AND FISH PROCESSING

COURSE : **21P4AQCT14 : FISH MICROBIOLOGY AND QUALITY ASSURANCE**

(For Regular - 2021 Admission)

Duration : Three Hours Max. Weights: 30

PART A

Answer any 8 questions **Weight: 1**

1.	Write an account on saprophytic bacterias associated with fish.	(A, CO 2)
2.	What is the importance of peroxide value?	(A, CO 4, CO 7)
3.	Name two seafood toxins	(A, CO 4, CO 7)
4.	Pink discolouration in cured fish.	(A, CO 3, CO 7)
5.	What is meant by psychrophiles ?	(U, CO 3)
6.	Give the classification of bacterial according to the salt requirement.	(A, CO 5)
7.	What is meant by "botulism"?	(R, CO 3)
8.	Differentiate between faecal coliforms and non-faecal coliforms.	(An, CO 2)
9.	Explain chemical changes taking place during fish spoilage.	(An, CO 5)
10.	Explain the cleaning and disinfection procedures practiced in seafood industry.	(A, CO 4)

(1 x 8 = 8)

PART B

Answer any 6 questions **Weights: 2**

11.	Microbial indices of fish quality.	(A, CO 6)
12.	Comment on antibiotic residues in farmed fish	(A, CO 4, CO 6)
13.	Bacteriological standards of seafood for export.	(U, CO 6)
14.	What is TBC	(A, CO 2)
15.	Describe the microbiology of fish spoilage	(An, CO 1, CO 3)
16.	International standards for fish and fishery products	(U, CO 4)
17.	Important water quality parameters required to assess the quality of water in processing plant	(A, CO 3)
18.	Differentiate Pathogenic and spoilage bacteria with examples.	(E)

(2 x 6 = 12)

PART C

Answer any 2 questions **Weights: 5**

19.	Comment on national and international standards for fish and fish products.	(A, CO 6, CO 7)
20.	Give an account of seafood inspection that is practiced earlier and currently.	(E, CO 5, CO 6)

21. Briefly explain the different types of Spoilage in fresh fish and its prevention methods. (A)

22. Describe the principle and procedure of grams staining reaction. (A, CO 3)

(5 x 2 = 10)

OBE: Questions to Course Outcome Mapping

CO	Course Outcome Description	CL	Questions	Total Wt.
CO 1	Understand the trace metals in fins fish and shell fish	U	15	2
CO 2	Understand the general aspects of seafood quality and quality problems	An	1, 8, 14	4
CO 3	Understand the biological hazards in seafoods	U	4, 5, 7, 15, 17, 22	12
CO 4	Analyse the fish spoilage and quality assessments	An	2, 3, 10, 12, 16	7
CO 5	Understand the Good manufacturing practices in seafood processing	R	6, 9, 20	7
CO 6	Understand the Hazard analysis and critical control points in seafood industry	A	11, 12, 13, 19, 20	16
CO 7	Understand the National and international standards for fish and fish products	R	2, 3, 4, 19	8

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