

**M.Sc. DEGREE END SEMESTER EXAMINATION - APRIL 2025****SEMESTER 2 : AQUACULTURE AND FISH PROCESSING****COURSE : 24P2AQCT05 : ECOLOGY OF CULTURE SYSTEMS AND AQUATIC BIOLOGY***(For Regular 2024 Admission and Improvement/Supplementary 2023/2022/2021 Admissions)*

Duration : Three Hours

Max. Weights: 30

**PART A****Answer any 8 questions****Weight: 1**

1. Define El Niño and its relation to fisheries. (U, CO 3, CO 4)
  2. Ammonification. (R, CO 7, CO 8)
  3. Explain thermal stratification in a pond. (U, CO 1, CO 2)
  4. Name four methane producing bacteria. (U, CO 7, CO 8)
  5. What is the role of carbon dioxide in providing buffering system to pond water? (U, CO 1, CO 2)
  6. Define Meiobenthos. (R, CO 1, CO 2)
  7. Define Biological productivity of an ocean. (E, CO 3, CO 4, CO 5)
  8. Describe Food web in an aquatic ecosystem. (An, CO 1, CO 2, CO 3, CO 4, CO 5)
  9. Explain petrifilm and its use. (U, CO 7, CO 8)
  10. Define plankton. (U, CO 7, CO 8)
- (1 x 8 = 8)**

**PART B****Answer any 6 questions****Weights: 2**

11. Biological nitrogen fixation. (U, CO 1, CO 2)
  12. Describe Benthic algae in brackish water ponds giving examples. (U, CO 1, CO 2)
  13. Describe dissolved oxygen concentration in relation to temperature in aquatic medium. (An, CO 1)
  14. Expand MPN and describe the MPN method. ( )
  15. Zonation of fresh water habitat. (U, CO 1)
  16. Estimation of sediment bacterial count. (U, CO 7, CO 8)
  17. Describe the pyramid of biomass with a suitable example from the aquatic environment. (E, CO 1, CO 2)
  18. How marine environment is divided/classified? (U, CO 4)
- (2 x 6 = 12)**

**PART C**  
**Answer any 2 questions**

**Weights: 5**

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|-----|---|-----------------------|
| 19. | Describe statistical sampling methods for enumeration of bacteria.  | (E, CO 7, CO 8)       |
| 20. | What is turbidity? Classify turbidity. How can you measure and control turbidity in a pond? Explain the chemistry of colloid clay suspension. | (U, CO 1)             |
| 21. | Illustrate the ecological energetic of pond with reference to productivity.   | (E, CO 1, CO 2)       |
| 22. | What are the major estuaries systems of India? Describe the characteristics of any one major estuary in India.                                | (E, CO 3, CO 4, CO 5) |
- (5 x 2 = 10)**

**OBE: Questions to Course Outcome Mapping**

CO	Course Outcome Description	CL	Questions	Total Wt.
CO 1	Understand the basic ecology and aquatic biology as applicable to aquaculture organisms in captivity and controlled conditions	U	3, 5, 6, 8, 11, 12, 13, 15, 17, 20, 21	24
CO 2	Evaluate the ways and means of circumventing, ecological imbalances for production of better aquaculture yield	U	3, 5, 6, 8, 11, 12, 17, 21	15
CO 3	Understanding the basic features of fisheries oceanography	U	1, 7, 8, 22	8
CO 4	Understanding the physico-chemical characteristics of marine environment	U	1, 7, 8, 18, 22	10
CO 5	Describing mud banks in capture fisheries	E	7, 8, 22	7
CO 7	Enumeration different types of major groups of microbes from culture ecosystems	U	2, 4, 9, 10, 16, 19	11
CO 8	Understand the growth and reproduction of microbes in relation to different physico-chemical conditions in pond	U	2, 4, 9, 10, 16, 19	11

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