

[Question of Term Final Examination]

Khulna university

School: **Life Science** Discipline: **Fisheries and Marine Resource Technology Discipline** Program: **Master of Science in Aquaculture**
Year: **MS 1st** Term: **2nd** Examination year: **2025** Session: **2024-2025**
Course code: **0521 06 Aqua-5201** Course Title: **Coastal Aquaculture and Mariculture**
Total marks: **60** Time: **3 hours** Credit: **03**

Instructions (if any): Use separate answer script for each section.

SECTION-A

Marks

There are **FOUR** questions in this section. Answer any **THREE** questions

- Q.1 a) Define coastal aquaculture and mariculture. How do they differ from inland aquaculture? [L2; CLO1] 03
- b) Compare recent trends of coastal aquaculture with other countries those are practicing modern aquaculture. [L3; CLO1] 04
- c) List 6 aquaculture supportive ingredients each with one function. [L4; CLO1] 03
- Q.2 a) What steps should be applied during fish farming to have higher production and quality product? [L3; CLO2] 02
- b) Prepare a suitable design and construction to conduct coastal aquaculture and mariculture in intertidal zone and open sea. [L6; CLO2] 04
- c) How shall you increase the carrying capacity of a culture pond? Discuss. [L5; CLO1,2] 04
- Q.3 a) Discuss the major challenges facing shrimp farming in Bangladesh focusing disease outbreaks, environmental pollution, and climate change. [L5; CLO2] 03
- b) Compare traditional, improved-traditional and semi-intensive culture of penaeid shrimp with special reference to farm preparation, stocking, food and feeding, water quality, total harvest and cost-benefit (suppose 1 hectare pond). [L5; CLO2] 05
- c) Calculate how many shrimp juveniles have to be stocked in 1 acre pond where stocking density is 20 juvenile/m². [L5; CLO2] 02
- Q.4 a) Explain the strategies that can be employed to minimize competition and cannibalism among the fingerlings of Asian seabass in nursery. [L3; CLO2] 03
- b) Discuss the culture procedure of mullet in the coast of Bangladesh. [L2; CLO2] 04
- c) How much bleaching powder should be applied in 0.75ha pond with 1.5m depth where dose is 50ppm. [L1; CLO1,4] 03

SECTION-B

There are **FOUR** questions in this section. Answer any **THREE** questions

- | | | | |
|-----|----|--|----|
| Q.5 | a) | Identify the potential 4 piscine and 4 non-piscine species for mariculture development in the coastal of Bangladesh. [L3; CLO3] | 02 |
| | b) | Justify the direct contributions of coastal shrimp farming in achieving the SDGs in Bangladesh. [L5; CLO3] | 04 |
| | c) | Analyze the major factors impeding the successful expansion of coastal aquaculture and mariculture in Bangladesh. [L4; CLO3] | 04 |
| | | | |
| Q.6 | a) | What do you mean by 'aqua mimicry system' for shrimp farming? [L2; CLO4] | 02 |
| | b) | Briefly describe the shrimp farming protocol in aqua mimicry system using fermented rice bran. [L1; CLO4] | 05 |
| | c) | Outline the major operating components and parameters affecting the functionality of a recirculatory aquaculture system (RAS). [L2; CLO4] | 03 |
| | | | |
| Q.7 | a) | 'Environmental sustainability takes precedence in IMTA, shaping the criteria for selecting species'—discuss it. [L2; CLO4] | 03 |
| | b) | Design a layout of IMTA system for the coastal region of Bangladesh showing the complementary roles of the selected species of different trophic levels. [L6; CLO4] | 04 |
| | c) | Identify the priority areas of research that need to be focused on advancing IMTA development in the coastal region of Bangladesh. [L4; CLO4] | 03 |
| | | | |
| Q.8 | a) | Distinguish between the concepts of biofloc technology, aquaponics and FLOCponics. [L6; CLO4] | 03 |
| | b) | Discuss how you will maintain the carbon and nitrogen ratio (C:N) in a biofloc culture tank. [L6; CLO7] | 04 |
| | c) | What are the comparative prospects of BFT over traditional aquaculture systems in fostering youth entrepreneurship and sustainable livelihoods in Bangladesh? [L4; CLO5] | 03 |

*Levels of Bloom's cognitive domain:[L1= Remember, L2= Understand, L3= Apply, L4= Analyze, L5= Evaluate, and L6= Create]