UNIVERSITY OF RUHUNA

FACULTY OF FISHERIES AND MARINE SCIENCES & TECHNOLOGY

Academic Year 2023/ 2024

Bachelor of Science Honors in Fisheries and Marine Sciences Degree

Level III, Semester II Examination – April/ May 2025

AQU 3212: Aquaculture III - Propagation **Time: 1 hour and 30 minutes**

Answer **any three (03)** questions **including question No. 1.**

1.

a. Write how rainy season simulation is done in captivity breeding. (07 marks)

b. "Using a target fish is a natural strategy to induce spawning naturally in fish". Justify. (05 marks)

c. Elucidate how cannibalism is prevented in fish breeding tanks. (13 marks)

d. List the key characteristics that a seed supply should possess to ensure the successful aquaculture of a particular species. (08 marks)

e. Briefly explain the three main approaches used for the propagation of cultivated fish, providing suitable examples for each. (12 marks)

f. Explain the purpose of mouth-clipping in male tilapia, particularly during breeding in hapas or tanks. (10 marks)

g. Explain the purpose of unilateral eyestalk ablation in female *Penaeus monodon* during hatchery operation. (10 marks)

h. Briefly explain the different methods available to induce the spawning in sea cucumbers. (20 marks)

i. Summarize the various methods that can be employed for the mass production of sea bass fry. (15 marks)

2.

a. Defend the following statements.

i. Nutrient requirements of brooders should be fulfilled properly for successful breeding. (20 marks)

ii. The social factors should be stable for a fish to ovulate. (10 marks)

b. "Furnishing a fish tank for breeding should mainly depend on the method of breeding." Justify this statement. (70 marks)

3.

c. Using appropriate diagrams, describe broodstock conditioning tank designs for bivalves with and without substrate requirements for burrowing. (50 marks)

d. Describe a suitable hatching system for berried *Macrobrachium rosenbergii* females, accompanied by an appropriate diagram. (50 marks)

4. Write short notes on **any four (04)** of the following.

e. Effects of environmental factors on fish breeding

f. Factors that should be considered when selecting parent fish for breeding

g. Behaviour of parent fish before, during and after spawning.

h. Stages in ovarian development of shrimp

i. Methods used for breeding tilapia

j. Rearing sea cucumber larvae

(100 marks)

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