

**UNIVERSITY OF RUHUNA**  
**Bachelor of Science in Fisheries & Marine Sciences Degree Examination**  
**Level III - Semester II, Dec. 2016/Jan. 2017**

**AQU 3212 – Aquaculture III: Propagation**

**Time – 02 hours**

**Answer only Four (04) questions selecting at least one (01) from each of the sections**

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**SECTION I**

01. Describe the behavioural patterns of oviparous ornamental fish, which are considered to be important by an aquarist when preparing breeding tanks.
02. (i) Mention the artificial methods adopted for breeding of fish and briefly describe the situations for which they are adopted.
- (ii) Describe a method adopted for androgenesis of fish in captivity.

**SECTION II**

03. (i) Briefly explain the process of eye stalk ablation and its importance to induce the spawning of *Penaeus monodon*.
- (ii) Write a short account on the general health assessment in larval rearing of *Penaeus monodon*.

**04. Either**

- A (i). Discuss the hatchery techniques used for the larval rearing of lobsters in a commercial production.
- (ii). Briefly describe the indications that can be used for identification of mature male and female lobsters.

**Or**

B Write short notes on the following.

- (i) Induced spawning methods of sea cucumbers
- (ii) Rearing of mud crab (*Scylla serrata*) larvae in a hatchery
- (iii) Larval development of sea cucumbers

### SECTION III

05. Write short accounts on **any three** of the following

- i. Differentiation of sexes in groups of molluscs
- ii. Induced spawning of clams
- iii. Fertilization and embryonic development of bivalves
- iv. Briefly explain the reproductive cycle of abalone

06. (a) As a technician in molluscan hatchery, different techniques can be used to produce viable eggs from mature oysters. Briefly describe the different techniques that could be adopted indicating the important steps to be followed to fulfill the above task.

(b) Describe the major steps required to be followed during spawning of monoecious species of molluscs and for their larval rearing.