

**UNIVERSITY OF RUHUNA**  
**BACHELOR OF SCIENCE IN FISHERIES AND MARINE SCIENCES**  
**DEGREE**

**Level IV Semester II Examination**

**Dec/Jan 2015/2016**

**LIM 4222 - Essay and Seminars**

**Time – 1 ½ hrs**

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**Select either part A or B and answer all questions of the selected part**

**Part A**

Following questions are based on the journal article Madsen *et al.* (2001). The interaction between water movement, sediment dynamics and submerged macrophytes. *Hydrobiologia* 444: 71-84.

- 1. Explain the mechanical properties of aquatic plants evolved in order to avoid physical variations of the environment.**  

**(30 marks)**
  
- 2. Describe the effects of sedimentation on eutrophication of lentic system and its impacts on the species composition of macrophytes**  

**(35 marks)**
  
- 3. Explain why water movement of surrounding environment of aquatic macrophytes is considered as the prime factor on their growth.**  

**(35 marks)**

## Part B

Following questions are based on the journal article Araujo *et al.* (2011). The ecological causes on individual specialization. *Ecology Letters* 14: 948-958

1. (i) How do you define individual specialization within a population?

(10 marks)

(ii) Briefly explain two indices that can be used to calculate the magnitude of individual specialization.

(20 marks)

2. Explain how the "Optimal Foraging Theory" would support individual specialization.

(30 marks)

3. Assess the concerns in designing quantitative analytical approaches for individual specialization.

(40 marks)