UNIVERSITY OF RUHUNA

BACHELOR OF SCIENCE IN FISHERIES AND MARINE SCIENCE DEGREE

Level II Semester I Examination

July/ August 2016

FSC 2112- Basic Ecological Principles

Time 01 ½ hours

Answer for any **three (03)** questions

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1. (a). What are the factors that determine the population growth?

   (b). Briefly describe how those factors are affected to the growth of population

   (c). Generally," population size is not possible to increase forever", justify this statement providing acceptable reasons

2. (a). What is meant by the niche of a species and how does it differ from the habitat?

   (b). Explain difference between realized niche and fundamental niche using a suitable example

   (c). Why is it impossible to evolve differences among species to reduce the completion for a limited resource?

   (d). "Predation is an ecologically important interaction", confirm this statement using suitable examples.

3. Write short notes on following
   a. Life tables
   b. Net Reproduction Rate (R_0)
   c. Aquatic succession
   d. Biotic potential of a species

4.

I. Primary production of an aquatic ecosystem is mainly performed by aquatic plants and algae where photosynthesis efficiency of this system accounts to 6.1 %. This ecosystem receives approximately 600, 000 kcal/m^2/year energy through sunlight and use for their primary production. Energy losses in the respiration of plants and algae are 28, 000 and 200 kcal/m^2/year respectively. The ratio between net primary production (NPP) of aquatic plant and algae is 1:4

a. Define the term "photosynthesis efficiency".
b. Calculate the NPP of aquatic plants and algae separately.

II. "Global climate changes impact to the primary production in aquatic ecosystems", describe this statement using suitable examples.