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RAJARATA UNIVERSITY OF SRI LANKA
FACULTY OF APPLIED SCIENCES, MIHINTALE

B.Sc. (Special) Degree in Applied Biology
Fourth year – Semester I Examination – October/ November 2015

ZOO 4308 - FISH NUTRITION AND GROWTH

Time: Three (03) hours

Answer six (06) questions only.

1. A fish farmer who lives at about 1 km distance from a fish landing site in Negombo has an integrated aquaculture farm. He wants to utilize the discarded fish and fish offal from the fish landing site to prepare;

- a) liquid feed and
 - b) dry feed ingredients to be used in the formulation of fish feeds.
- As an aquaculturist, briefly explain how you would instruct him in this regard.

2. a) Discuss the factors that affect the formulation of fish feeds.

b) Formulate a ration containing 30% crude protein (CP), using fish meal (70% CP) and soybean meal (50% CP) in the ratio of 1:2, together with maize (10% CP) and corn meal (10% CP) in the ratio of 1:1 as the energy source (Note that the ratios are when using more than one source of nutrients in the formulation of the ration). Indicate the amounts of each ingredient to be used in this formulation.

c) If fish larvae at a stage that require 05 *Artemia* nauplii/ml and are kept in 50 rearing tanks, each with 20 litres in volume, calculate the required weight of *Artemia* cysts, considering that 1 gram contains 200,000 *Artemia* cysts with 70% of hatching rate.

3. a) Describe the steps that should be followed in fish feed preparation for a small scale fish farm.

b) Briefly explain how the quality of the fish feeds can be controlled.

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4. a) Discuss the physical attributes of a good fish feed.
 - b) When a farmer is feeding the fish, evaluate the factors that should be focused on.
 - c) Critically discuss the different methods of feeding that could be adopted by fish farmers.
5. a) List the environmental factors that deteriorate the fish feeds during storage.
 - b) Discuss the main ingredients that would be emphasized in the detection of deterioration of fish feeds.
6. a) Briefly describe how a farmer should be trained on culturing micro worm to be used as a larval feed.
 - b) Giving suitable examples, explain how to enrich the larval diets.
7. Write short notes on the following.
 - a) Vitamin and mineral nutrition in fish.
 - b) Culture of microalgae
 - c) Moist fish feeds