



RAJARATA UNIVERSITY OF SRI LANKA
FACULTY OF APPLIED SCIENCES

B.Sc. (Special) Degree in Applied Biology
Fourth Year - Semester I Examination – September/ October 2019

FAM 4204 - FISH NUTRITION AND GROWTH

Time: Two (02) hours

Answer ALL questions.

1. a) Incorporation of carotinoids in ornamental fish feed is important to increase the market price of fish". Analyse the above statement. (50 marks)
- b) i. A farmer is rearing fry stage of discus fish in 25 rearing tanks, each with a volume of 10 litres. If the discus fry requires five *Artemia* nauplii per ml per feeding time, calculate the weight of *Artemia* cysts that should be hatched per feeding time. (1 g contains 300,000 cysts. Hatching rate of *Artemia* cysts is 60 %.) (10 marks)
- ii. Formulate an artificial feed containing 50% crude protein with a supplement of fish meal (50% crude protein), soybean meal (45% crude protein), a grain mixture of corn (9% crude protein) and mung bean (12% crude protein) for discus fingerlings. The ratios of these ingredients in the feed should be fish meal 3 parts: soybean meal 2 parts: corn 10 parts: mung bean 5 parts. (15 marks)
- iii. The farmer stocked 2500 discus fingerlings each weighing 5g in a grow out tank and needs to feed them with the above formulated ration at a rate of 10% of its body weight. Calculate the amount of feed that should be provided per day and per meal if they are fed 4 times /day. (10 marks)
- iv. At the end of the production cycle, a total of 950 kg of discus were harvested from the tank and a total of 1100 kg of feed was fed to the fish during the production cycle. Calculate the FCR of the fish and comment on it. (10 marks)
- v. If each kilogram of feed costs Rs. 175/=, calculate the cost incurred to produce an average weight of 250 g of discus. (05 marks)

2. Discuss the chemical and biological contaminants in fish feeds and the precautions that could be taken to minimize them. **(100 marks)**
3. a) Discuss briefly the importance of feeding response of fish in the feed management in fish farm and the factors that affect the feeding response of fish. **(50 marks)**
b) How would a farmer assess the feeding response of fish? Emphasize the criteria that are adopted in judging the feeding response. **(50 marks)**
4. Write short notes on the following.
 - a) Culture of microworms
 - b) Preparation of hydrolysed feather meal
 - c) Importance of carbohydrates in fish nutrition
 - d) Procedure of fish feed preparation for a small scale fish farm **(25 marks each)**

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