



**RAJARATA UNIVERSITY OF SRI LANKA
FACULTY OF APPLIED SCIENCES**

**B.Sc. (Special) Degree in Applied Biology
Fourth Year - Semester I Examination – October/November 2017**

ZOO 4308 - FISH NUTRITION AND GROWTH

Time: Three (03) hours

Answer any six (06) of the following questions.

1. A farmer, who is planning to culture seabass in the coastal region of Chilaw needs to formulate a low cost fish feed. He wishes to use trash fish for the feed formulation.
 - a) Name the liquid form of feed ingredient that he can prepare by processing trash fish. (05 marks)
 - b) Explain the steps that he should adopt to prepare the above mentioned feed ingredient. (45 marks)
 - c) How should he administer the above prepared feed ingredient to feed sea bass? (10 marks)
 - d) Discuss the nutritive value and negative properties of the above feed ingredient. (40 marks)

2.
 - a) Explain the role of feed additives in fish feeds. (25 marks)
 - b) What is the purpose of using immunostimulants in aquaculture? (25 marks)
 - c) "Application of probiotics and prebiotics in fish feeds will produce healthy fish." Comment on this statement. (50 marks)

3. With suitable examples, describe briefly the contaminants and toxins that could be present in fish feeds. (100 marks)

4. a) Discuss the factors that should be considered when selecting feed ingredients to formulate fish feeds. (40 marks)
- b) Describe how the quality of fish feed pellets is evaluated. (20 marks)
- c) i. Formulate a fish feed containing 12% crude protein (CP) using corn (8.8% CP) and fish meal (35% CP), with 3% rye (11.9% CP) and 7.5% milo (11.0% CP). (10 marks)
- ii. A farmer stocked 5000 tilapia fingerlings each weighing 2 g. He wants to feed a ration of 10% of its body weight. How much of the food should be given per day and per meal if they are fed 5 times /day? (10 marks)
- iii. At the end of the production cycle, a total of 1500 kg of tilapia were harvested from the pond and a total of 1250 kg of feed was fed to the fish during the production cycle. Calculate the FCR of the fish and comment on it. (10 marks)
- iv. If each kilogram of feed cost Rs. 150/=, calculate the cost incurred to produce 1 kg of tilapia. (10 marks)
5. Write a concise account on quality control in manufacturing fish feeds. (100 marks)
6. a) Explain the different procedures employed in mass culture of microalgae to be used in feeding fish larva. (25 marks)
- b) Discuss the disadvantages of each procedure that is mentioned in (a). (25 marks)
- c) Describe how the decapsulation of artemia cysts is performed. (25 marks)
- d) List the advantages of using decapsulated artemia cysts for feeding fish larvae. (25 marks)
7. Write short notes on the following.
- a) Physical attributes of a good fish feed
- b) Factors that influence the protein requirement of fish
- c) Different types of fish feeds according to their composition
- d) Advantages of using carotinoides in fish feeds (25 marks each)

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