



FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI

SCHOOL OF AGRICULTURE AND AGRICULTURAL TECHNOLOGY
DEPARTMENT OF FISHERIES AND AQUACULTURE TECHNOLOGY (FAT)

HARMATTAN SEMESTER EXAMINATION FOR 2016/2017 SESSION:

Course Code: FAT 309

TIME: 2½ HRS

Course Title: FISH NUTRITION

INSTRUCTION: ANSWER ONLY FOUR QUESTIONS, TWO QUESTIONS
FROM EACH SECTION

SECTION A

1. How do you describe levels of fish culture based on feeding levels?
2. What are the notable nutritional differences between fishes and terrestrial farm animals?
3. a. Describe the physical properties required in fish feed.
b. What information are needed to determine minimum cost feed formulation?

SECTION B

4. a. Discuss any four methods of formulating and highlight the advantages and disadvantages of each method.
b. Relate fish feeding habits as pre-requisites for nutrient requirements of fish
5. a. With the aid of formulae describe the following fish feed evaluation parameters:
 - i. Specific growth rate
 - ii. Feed conversion ratio
 - iii. Feed efficiency
 - iv. Protein efficiency ratio
 - v. Weight gain
b. What is the difference between?
 - i. Feed and feeding
 - ii. Ration and diet
 - iii. Vitamin E and Vitamin C
 - iv. Omega-3 and Omega-6
 - v. Basal feed and concentrate feed
6. a. Differentiate between nutrient composition and nutrient specification
b. What are the basic requirements necessary for formulating feed for fish?



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HARMATTAN SEMESTER EXAMINATION FOR 2017/2018 SESSION

Course Code: FAT 309

TIME: 2HRS 30MIN

Course Title: FISH NUTRITION

INSTRUCTION: ANSWER FOUR QUESTIONS ONLY, AT LEAST ONE FROM EACH SECTION

SECTION A

- Name the essential amino acids for warm water fishes.
 - What factors determine the biological value of a protein source for fish?
- What roles do dietary lipids play in fish?
 - Name the four common fatty acids in fish and explain their importance in fish production.

SECTION B

- Bent back bone and dark coloration are symptoms of deficiency of which vitamins? Which are also known as ...
 - Classify the identified vitamins in (a) above
 - A particular fat soluble vitamin has similar functions with a certain water soluble vitamin. Name them fully and mention their functions.
 - What is feed pelleting and do you pellet?
- Define non-nutrient feed additives and state how they are classified
 - What are the general functions of macro and micro minerals
 - Mention five (5) non-nutrient feed additives that are very important in fish nutrition and state their functions

SECTION C

- Discuss in detail the process of formulating feed for different species of fish using pelleting machine.
 - What factors are considered while formulating feed for fish
- With the aid of formulae, explain how to evaluate the following parameters for fish:
 - Weight gain
 - Specific growth rate
 - Feed conversion ratio (FCR)
 - Protein efficiency ratio (PER)
 - Feed efficiency ratio (FE)

