



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF AGRICULTURAL AND FOOD SCIENCES**

**THIRD YEAR SECOND SEMESTER UNIVERSITY EXAMINATION FOR THE
DEGREE OF BACHELOR OF SCIENCE IN FOOD SECURITY
2023/2024 ACADEMIC YEAR**

REGULAR

COURSE CODE: SBI 3424:

COURSE TITLE: AQUACULTURE AND APICULTURE

DATE: APRIL, 2023

TIME: 2 HOURS

INSTRUCTIONS: Answer Question ONE and Any Other TWO Questions.

SECTION A (30 MARKS)

ANSWER ALL QUESTIONS

1. Differentiate the following terms.
 - i. Abrasion and Exophthalmos 1 Mark
 - ii. Toe and Levees 1 Mark
 - iii. Mariculture and Algaculture 1 Mark
 - iv. Integrated Multi-Trophic Aquaculture and monoculture 1.5 Marks
 - v. Freeboard and core trench 1 Mark
 - vi. Physiology and Anatomy 1 Mark
2. List four components of a fish pond. 2 Marks
3. List two importance of screening pond outlet and inlet. 2 Marks
4. Describe three criteria used in the selection of the ideal fishing gear in Lake Victoria. 3 Marks
5. Briefly explain three factors that can influence fish feeding behavior. 2 Marks
6. A leaking pond can lead to water loss, damaging the ecosystem and potentially causing structural issues. Discuss 3 Marks
7. Explain how Fish farming contributes to the Sustainable Development Goals (SDGs). 3 Marks
8. Briefly describe two modes of transmission of an infectious agent in aquaculture 3 Marks
9. Describe two fish nutritional diseases faced by farmers and state prevention and control measures in each 3 Marks
10. List one farmed finfish species and its taxonomic classification 3 Marks
11. Briefly explain two methods of mono-sex male tilapia production in aquaculture. 3 Marks

SECTION B (40 MARKS)

ANSWER TWO QUESTIONS

QUESTION TWO

i) Discuss five elements to consider when selecting a fishing method and gear in an aquatic ecosystem. 10 Marks

ii) Discuss two main classifications of fishing gear and give three demerits and merits of each.

6 Marks

iii) Describe and illustrate two methods of organic manure application in fish ponds 4 Marks

QUESTION THREE

i. Describe four techniques used to evaluate and locate fish stock in capture fisheries.

12 marks

ii. Explain three aquaculture systems.

8 marks

QUESTION FOUR

i). Discuss five logical sequences a farmer should follow when constructing a fish pond.

10 Marks

ii). Discuss three desirable characteristics of a cultured species in a recirculating aquaculture system.

6 Marks

iii). You are employed as a fishing gear expert in a company dealing in fishing activities and assigned duties to design a fishing gear for the company. Discuss the gear design process for your company.

4 Marks

QUESTION FIVE

i). Explain four basic procedures used in the final processing of fish products. 8 Marks

ii). Discuss factors affecting responses of organic fertilizers application in earthen ponds

6 Marks

iii). Discuss three managerial practices that help to prevent fish diseases in aquaculture

6 Marks