



SPECIAL EXAMINATION

**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**SCHOOL OF AGRICULTURAL AND FOOD SCIENCES**

**UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN  
FOOD SECURITY**

**4<sup>TH</sup> YEAR 2<sup>ND</sup> SEMESTER 2020/2021 ACADEMIC YEAR**

**SPECIAL EXAM/RESIT**

---

**COURSE CODE:** AAS 3427

**COURSE TITLE:** Aquaculture and Apiculture

**EXAM VENUE:**

**STREAM:** BSc. (Food Security)

**DATE:**

**EXAM SESSION:**

**TIME:**

---

**Instructions:**

1. Answer ALL questions in section A and ANY other 2 Questions in section B.
2. Candidates are advised not to write on question paper.
3. Candidates must hand in their answer booklets to the invigilator while in the examination room.

**SECTION A (30 MARKS)**

**Answer ALL questions in this section**

1. Define aquaculture according to the FAO.(6marks)
2. Name the two indispensable hive accessories.(4marks)
3. What is freshwater aquaculture?(6marks)
4. Distinguish between aquaculture and apiculture. (5marks).
5. Name three types of bees, apart from the African honeybee, *Apis mellifera*.(3 marks)
6. State particular kinds of aquaculture. (6marks)

**SECTION B: (40 MARKS)**

**Answer ANY TWO questions from this section**

- 7i). What are the significance of the following in African honey bee (*Apis mellifera*) farming?
  - a). grease (3 marks)
  - b). hive tool (3 marks)
  - c). bee smoker (3 marks)
- ii). Name three types of fish based on their niches in various aquatic environments. (6marks)
- iii). Name five equipments (hive accessories) required for successful beekeeping/ farming (5marks)
- 8i). Discuss the role of the queen excluder in Langstroth beehive for promoting commercial beekeeping enterprise. (8marks)
- ii). What special features distinguish red bottle brush (*Callistemon citrinus*) and *Ocimum kilimanscharicum* from other melliferous plants. (3marks)
- iii). In particular why is the bottlebrush a more unique melliferous plant. (3marks)
- iv). Explain three differences and similarities between the queen and workers of the African honeybee, *A. mellifera*.(3marks)
- v). State three advantages of aquaculture over marine and inland fisheries. (3 marks)

9i). Discuss how the contribution of fishery activities to national economies is multifaceted.

(9marks)

ii). Briefly explain three differences between the Top bar and Langstroth beehives. (4marks)

iii). State three types of marine fisheries. (3marks)

iv). Explain why most marine fisheries are based near the coast. (4marks)