



**SPECIAL EXAM III**

**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**

**REGULAR**

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**COURSE CODE: AAS 3427**

**COURSE TITLE: Aquaculture and Apiculture**

**EXAM VENUE: ONLINE**

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

**DATE: 3/12/2020**

**EXAM SESSION:**

**TIME:**

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**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. State three constraints to the smallholder in undertaking modern beekeeping. (6marks)
2. Name four by-products obtainable from fish. (8marks)
3. Name three types of fish based on their niches in various aquatic environments. (6marks)
4. Explain why most marine fisheries are based near the coast. (6marks)
5. i). State the maximum distance covered by bees in search of food and other materials. (1marks)  
ii). What is the significance of *Ocimum kilimanscharicum* in beekeeping? (3marks)

**SECTION B: (40 MARKS)**

**Answer ANY TWO questions from this section**

6. a). Briefly discuss the importance of silverfish in providing livelihoods to riparian communities of the East African lakes. (6marks)  
b). Define bee space and its significance for the African honey bee, *Apis mellifera*. (6marks)  
c). What is *Rastrineobola argetea*? (3marks)  
d). Giving examples, state three qualities of a good aquaculture species. (5marks)
- 7a). To the lay persons, all insects are generally perceived to be harmful or noxious. Explain, giving examples why this is not necessarily so. (8marks)  
b). Distinguish between finfish and shellfish. (5marks)  
c). Distinguish among queen, drones and worker bees in a colony of the African honeybee, *Apis mellifera*. (7marks)
- 8a). Explain the causes of swarming and how this phenomenon can be minimized or prevented in the African honey bee, *Apis mellifera*. (8marks)  
b). Define the terms predatory and weed fishes and explain why their control is important (6marks)  
c). Briefly explain why the relation of aquaculture to finfish and shellfish fisheries is analogous to the relation of agriculture to hunting and gathering. (3marks)  
d). Name two warm water and two cold water fish species. (3marks)