



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY**  
**SCHOOL OF BIOLOGICAL, PHYSICAL, MATHEMATICS AND ACTUARIAL SCIENCES**  
**UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE**  
**SECOND YEAR SPECIAL EXAMS 2020/2021 ACADEMIC YEAR**

**MAIN CAMPUS - REGULAR**

---

**COURSE CODE:** SBI 3217  
**COURSE TITLE:** FUNDAMENTALS OF AQUATIC ECOLOGY  
**EXAM VENUE:** \_\_\_\_\_  
**DATE:** \_\_\_\_\_ **EXAM SESSION:** \_\_\_\_\_  
**TIME: 2 HOURS**

---

**Instructions:**

- 1. Answer ALL questions in Section A and Any two questions in Section B**
- 2. Candidates are advised not to write on question paper**

**Candidates must hand in their answer booklets to the invigilator**

**SECTION A: SHORT ANSWER QUESTIONS (30 MARKS)**

1. Define the following terms as used in Ecology (3 marks)
  - i. Ecosystem
  - ii. Succession
  - iii. Synecology
2. In a diagram, illustrate horizontal zonation in an aquatic ecosystem. (3 marks)
3. Give brief description of vertical zonation a lentic ecosystem. (3 marks)
4. With the help of diagrams give three examples of food chains in an aquatic ecosystem (3 marks)
5. Explain the concept of Fundamental Niche in ecology (3 marks)
6. Explain what is meant by Primary productivity of an ecosystem. (3 marks)
7. Differentiate between LOTIC and LENTIC aquatic ecosystems, giving specific example of each. (3 marks)
8. What are the properties of water that make it suitable for habitation by living organisms? (3 marks)
9. State any THREE adaptations of phytoplankton organisms. (3 marks)
10. Outline causes of aquatic pollution in Kenya. (3 marks)

**SECTION B: ESSAY QUESTIONS (40 MARKS)**

11. Discuss the process of primary succession in a named aquatic ecosystem. (20 marks)
12. Describe the process of nitrogen cycle in a lentic habitat. (20 marks)
13. Using relevant examples describe adaptations of organisms for aquatic life. (20 marks)
14. Explain the process of thermal stratification in aquatic ecosystems. (20 marks)