



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY
SCHOOL OF BIOLOGICAL AND PHYSICAL SCIENCES
UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN
BIOLOGICAL SCIENCES
FOURTH YEAR FIRST SEMESTER 2018/2019 ACADEMIC YEAR
MAIN CAMPUS - REGULAR

COURSE CODE: SBI 3438
TITLE: AQUATIC ECOLOGY
EXAM VENUE: STREAM: (BIO)
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**
 - 3. Candidates must hand in their answer booklets to the invigilator while in the examination room**
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SECTION A: SHORT ANSWER QUESTIONS (30 MARKS)

1. Explain how dissolved substances affect salinity, turbidity and pH of a fresh water ecosystem. (3 marks)
2. Describe characteristics of a named river from the source to the mouth. (3 marks)
3. Explain the causes and importance of hypoxia and anoxia in a Lake. (3 marks)
4. Describe two processes responsible for the diffusion of dissolved substances in lakes. (3 marks)
5. Using a diagram, describe the cycling of nitrogen in an estuary. (3 marks)
6. Explain how nutrients from the benthic zone is availed to photic zone in a tropic lake ecosystem. (3 marks)
7. Describe three biological features that make planktons successful organisms. (3 marks)
8. Describe lotic aquatic environment based on the nature of habitat (3 marks)
9. Explain three factors that determine the nature of the Lake bottom. (3 marks)
10. Discuss trophic relationship in fresh water organisms. (3 marks)

SECTION B: ESSAY QUESTIONS (40 MARKS)

11. Discuss the relation between the distribution and adaptations of flora and fauna in a named aquatic ecosystem. (20 marks)
12. Write an essay on the relationship between density and temperature during seasonal stratification of a deep Lake located in a continental temperate climate. (20 marks)
13. Assuming you visited a shallow eutrophic inland lake ecosystem during a recent field excursion.
 - a) Compare daily and annual net primary productivity at various depths. (10 marks)
 - b) Describe oxygen distribution depth curves (10 marks)
14.
 - a) Discuss the effects of density dependent and density independent controls on stream organisms. (10 marks)
 - b) Using a well labeled diagram, describe the life zones in a tropical lake. (10 marks)