



**EMBU UNIVERSITY COLLEGE**  
**(A Constituent College of the University of Nairobi)**

---

2015/2016 ACADEMIC YEAR

SECOND SEMESTER EXAMINATION

SECOND YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE  
(MICROBIOLOGY AND BIOTECHNOLOGY)

SZL 203 A: FUNDAMENTALS OF AQUATIC ECOLOGY

**DATE: APRIL 14, 2016**

**TIME: 02:00-04:00**

---

**INSTRUCTIONS: Answer any ten (10) questions (7 marks each)**

---

1. Discuss briefly the ecological importance of the high water specific heat capacity.
2. Explain briefly how phytoplankton communities are adapted to live in lentic habitat.
3. a) Define the term water residence time. (2 Marks)  
b) Outline the methods used to establish the residence time. (5 Marks)
4. Discuss briefly the phosphorus cycle in a lentic ecosystem.
5. Briefly discuss the importance of macrophytes in fresh water ecosystems.
6. a) Differentiate between natural and cultural eutrophication. (4 marks)  
b) State three problems associated with cultural eutrophication of water bodies (3 Marks)
7. Discuss various types of drainage networks.
8. Explain the stream ordering method by Horton Strahler (1952).
9. Describe the major functional feeding groups of insects in rivers.
10. Describe briefly the zones in a lake ecosystem.
11. Describe briefly the river channel morphology from the source to the mouth.

12. Explain the gradients of thermal stratification of a temperate lake in summer.

--END--