



# MACHAKOS UNIVERSITY

University Examinations for 2020/2021 Academic Year

SCHOOL OF ENVIRONMENT AND NATURAL RESOURCES MANAGEMENT

DEPARTMENT OF ENVIRONMENTAL SCIENCES

FOURTH YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF ENVIRONMENTAL SCIENCE

ENS 456: AQUATIC ECOLOGY

DATE: 17/8/2021

TIME: 2.00-4.00 PM

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## **INSTRUCTIONS:**

Answer question ONE and any other TWO questions

### **QUESTION ONE (30 MARKS)**

- a) Using relevant examples, explain two basic concepts of ecology. (10 marks)
- b) Giving examples, explain five different classifications of aquatic organisms. (10 marks)
- c) The biota of rapidly and slowly flowing sections of a river are very distinct. Discuss using appropriate examples. (10 marks)

### **QUESTION TWO (20 MARKS)**

Discuss the anthropogenic activities affecting natural water quality in East African Lakes and Rivers.

### **QUESTION THREE (20 MARKS)**

Using examples, discuss abiotic environmental factors that influence distribution of organisms in lentic ecosystems.

### **QUESTION FOUR (20 MARKS)**

Bioindicators used in monitoring ecological integrity of aquatic ecosystems should be hierarchical to give reliable results. Discuss

### **QUESTION FIVE (20 MARKS)**

Discuss the behavioural, morphological and physiological adaptations of freshwater fishes to low dissolved oxygen.