



**KISII UNIVERSITY**  
**UNIVERSITY EXAMINATIONS**

**SECOND YEAR EXAMINATION FOR THE AWARD OF THE DEGREE OF  
BACHELOR OF SCIENCE AGRICULTURAL EXTENSION AND EDUCATION  
SECOND SEMESTER 2022/2023  
(JUNE - SEPTEMBER, 2022)**

**ZOOL 210: ECOLOGY**

**STREAM: Y2 S2**

**TIME: 2 HOURS**

**DAY: TUESDAY, 3:00 PM – 5:00 PM**

**DATE: 13/09/2022**

**INSTRUCTIONS:**

- 1. Do not write anything on this question paper.***
- 2. Answer ALL Questions in section A (Compulsory) and any other TWO***

**QUESTION ONE**

State the first law of Thermodynamics and give one application in ecological studies. (2marks)

**QUESTION TWO**

Briefly explain the meaning of the following terms as used in ecological studies

- Lotic and lentic systems (2 marks)
- Resilience (2 marks)
- Eutrophication (2 marks)
- Carrying capacity (2 marks)
- Homoeotherms and poikilotherms (2 marks)

**QUESTION THREE**

State and explain the process which takes place in the FIVE stages of Nitrogen cycle. (5 marks)

**QUESTION FOUR**

Giving an example in each case explain briefly the TWO aspects of protective mimicry (4 marks)

**QUESTION FIVE**

Outline how the animals found in xeric areas are adapted to carry out their functions. (5 marks)

**QUESTION SIX**

Describe any four causes of greenhouse effect (4 marks)

**QUESTION SEVEN**

The following data was collected by Kisii University during a field work. Use it to answer the questions that follow.

Species

	Pond A	Pond B
Phytoplanktons	110,000	60,000
Water hyacinth	300	500
Herring	250	300
Mudfish	10	17
Tilapia	20	15

- Calculate the Shannon Weiner diversity index for pond A and B (5 marks)
- Which pond has more diverse species than the other (1mark)
- Give FOUR reasons for higher diversity in (b) above (4marks)

**SECTION B****QUESTION EIGHT**

Discuss the causes, effects, and control mechanisms on green global warming (15 marks)

**QUESTION NINE**

- What is meant by the term ecological succession? (1 mark)
- Discuss the THREE types of ecological succession (3 marks)
- Briefly explain the FOUR stages of ecological succession (8 marks)
- Explain the THREE causes of ecological succession (3marks)

**QUESTION TEN**

Discuss FIVE major methods of estimating population in ecological studies

(15 marks)