



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

FACULTY OF HEALTH, NATURAL RESOURCES AND APPLIED SCIENCES

SCHOOL OF AGRICULTURE AND NATURAL RESOURCES SCIENCES

DEPARTMENT OF AGRICULTURAL SCIENCES AND AGRIBUSINESS

QUALIFICATIONS: BACHELOR OF SCIENCE IN AGRICULTURE	
QUALIFICATIONS CODE: 07BAGA	LEVEL: 7
COURSE CODE: AGE721S	COURSE NAME: AGROECOLOGY
DATE: JANUARY 2025	PAPER: 2
DURATION: 3 HOURS	MARKS: 100

SECOND OPPORTUNITY EXAMINATION PAPER	
EXAMINER:	DR. JEROME BOYS
MODERATOR:	MRS. ANGELA LILUNGWE

INSTRUCTIONS
<ol style="list-style-type: none">1. Answer all the questions.2. Write neatly and clearly.3. Mark all answers clearly with their respective question numbers.4. All written work MUST be done in blue or black ink.5. No books, notes and other additional aids are allowed.

PERMISSIBLE MATERIALS:
<ol style="list-style-type: none">1. None-programmable calculator2. Examination paper3. Examination script

ATTACHMENTS
<ol style="list-style-type: none">1. None

**THIS QUESTION PAPER CONSISTS OF 3 PAGES
(Including This Front Page)**

QUESTION 1

Define the following:

- 1.1. Ecology, (2)
- 1.2. Water Use Efficiency, (2)
- 1.3. Resilience, (1)
- 1.4. Indicators species, and (2)
- 1.5. Species extinction. (2)

[9]

QUESTION 2

3.1. Name and discuss three (3) natural ways whereby different types of species had their populations controlled. (12)

[12]

QUESTION 3

3.1. What are the consequences of the following human impacts on the land. How can these consequences be minimized to avoid environmental degradation? (6)

- Ploughing
- Spreading alien species

3.2. Discuss the following ecological support services with special emphasize to their contribution to agroecology. (10)

- Soil protection
- Climate control
- Recycling
- Biodiversity
- Water purification

[16]

QUESTION 4

4.1. When farmers come up against a problem, their most common reaction is to try treating the symptoms. Mrs. Kadhikwa is a farmer in the Thornbush Savanna who faces the problem of severe bush encroachment on her land. She wants to declare war on *Senegalia mellifera* and eliminate it from her farm.

Advise her on what she should consider before attempting to eliminate the encroacher bush *Senegalia mellifera*. (10)

4.2. In your own words, explain how decent knowledge in agroecology can collectively alleviate both "zero hunger" and "no poverty" as United Nations Sustainable Development Goals. Also name any 5 other United Nations Sustainable Development Goals. (7)

4.3. Discuss the three (3) groupings of natural resources as a resource and give examples of each. (9)

[26]

QUESTION 5

5.1. For a population of 9 581 which registers 60 births and 67 deaths in one year, find:

- Birth rate, (2)
- Death rate, and (2)
- Growth rate. (2)

5.2. Find the doubling time for a population which increases from 73 381 in the year 2000 to 81 294 in the year 2018. (4)

[10]

QUESTION 6

A farmer calls you out to his game farm on short notice and wants to make use of your services for half a day only.

6.1. He can avail two Labourers on the farm and wants you to count his springbok in 60 x 200 m camp. What method will you use and why? (3)

6.2. He has traps available and wants to count rock hyrax as well. What method will you use and why? (3)

6.3. The farmer also has Kudu and during a driving through the farm you counted 75. The farmer decided to harvest 9. After two (2) hours you had a drive again and counted 67.

- Estimate the number of Kudus in the farm before the farmer harvested 9 Kudus. (3)
- Estimate the number of Kudus remaining on the farm after the harvest. (3)

[12]

QUESTION 7

7.1. Discuss 5 ways on how conservancies contribute to conservation and sustainable use of natural resources in Namibia. (10)

7.2. Explain the term “Tragedy of Commons” and in which land tenure system it is most common with an example related to the use of natural resources. (5)

[15]

END OF QUESTION PAPER