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: NOVEMBER 2024	**PAPER:** 1
DURATION: 3 HOURS	**MARKS:** 100

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

INSTRUCTIONS
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:
1. None-programmable calculator
2. Examination paper
3. Examination script

ATTACHMENTS
1. None

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

QUESTION 1
Define the following:

1.1. Resource and give one example, (2)

1.2. Water Use Efficiency, (2)

1.3. Energy Efficiency, (2)

1.4. Agroecology, and (2)

1.5. Organic farming. (2)

[10]

QUESTION 2
2.1. Name any 5 principles of Agroecology. (5)

2.2. Name 5 United Nations Sustainable Development Goals. (5)

2.3. Name 5 ways how conservancies contribute to the conservation and sustainable use of natural resources. (5)

[15]

QUESTION 3
3.1. Discuss the consequences of the following human impacts on the land. How can these consequences be minimized to avoid environmental degradation? (15)
- Overgrazing
- Land clearing (large scale)
- Ploughing
- Spreading alien species
- Constructing barriers (fences)

3.2. Discuss any five (5) main ecological support services with special emphasis on their contribution to agroecology. (15)

[30]

QUESTION 4
4.1. Discuss five (5) practical methods to rotate wildlife on a game farm to rest the veld on a certain area of the farm. (10)

[10]

QUESTION 5
5.1. For a population of 11 200 which registers 95 births and 20 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 2011. (4)

[10]

QUESTION 6
6.1. Suppose you census the weevils in a compost heap by randomly trapping and marking 90 of them, releasing them back into the heap and an hour later randomly trapping 60 of which 6 are marked. Estimate the population of weevils in the heap. (3)

6.2 Suppose you record 36 francolin calls along the route of your daily walk in a park. You then harvest 12 francolins from the park and next day repeat the census in the same way. This time you record 30 francolin calls. Estimate the current number of francolins remaining in the park. (4)

[7]

QUESTION 7
7.1. Name and shortly discuss 9 strategies to ensure improved water use efficiency (WUE) in crops. (18)

[18]

END OF QUESTION PAPER