



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

**FACULTY OF HEALTH, NATURAL RESOURCES AND APPLIED SCIENCES
SCHOOL OF AGRICULTURE AND NATURAL RESOURCES SCIENCES
DEPARTMENT OF AGRICULTURAL SCIENCE AND AGRIBUSINESS**

QUALIFICATIONS: BACHELOR OF SCIENCE IN AGRICULTURE	
QUALIFICATIONS CODE: 07BAGA	LEVEL: 7
COURSE CODE: RRG611S	COURSE NAME: RANGELAND REGENERATION
DATE: JULY 2024	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

SECOND OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER:	DR. JEROME BOYS
MODERATOR:	DR. HILMA RANTILLA AMWELE

INSTRUCTIONS
<ol style="list-style-type: none">1. Answer all questions.2. Please write neatly and legibly.3. Do not use the left side margin of the exam paper. This must be allowed for the examiner.4. No books, notes and other additional aids are allowed.5. Mark all answers clearly with their respective question numbers.

PERMISSIBLE MATERIALS:
<ol style="list-style-type: none">1. None-programmable calculator

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

**THIS MARKING SCHEME CONSISTS OF 2 PAGES
(Including This Front Page)**

QUESTION 1

Define the following:

- | | |
|---------------------------|-------------|
| 1.1. Rotational grazing | (2) |
| 1.2. Indicator plants | (2) |
| 1.3. Problem plants | (2) |
| 1.4. Ecosystem | (3) |
| 1.5. Ecotone | (2) |
| 1.5. Plant community | (2) |
| 1.6. Secondary succession | (2) |
| | [15] |

QUESTION 2

Discuss the Dwarf Shrub Savanna veld type in detail, with special focus on:

- It's location in Namibia,
- Broad plant composition,
- Adaptability of plants,
- Grazing/fodder availability throughout the year, and
- It's suitability for livestock farming.

[10]

QUESTION 3

- | | |
|---|-----|
| 3.1. What does the acronym BECVOL stand for? What is it used for? | (5) |
| 3.2. Name the five (5) biomes in Namibia ranking them from highest plant density to least plant density | (5) |
| 3.3. Name any five (5) sound principles of rangeland management | (5) |
| 3.4. Name any five (5) nutritional requirements of good pasture plants | (5) |

[20]

QUESTION 4

4.1. Discuss the effect of stocking rate on animal production with special emphasize on:

- | | |
|-------------------------|-----|
| • Production per animal | (2) |
| • Production per ha | (2) |

- Optimum economic return (2)

Also draw a schematic diagram to put the above discussion on context. (9)

4.2. Discuss five (5) reasons for burning veld, using a controlled fire. (10)
[25]

QUESTION 5

5.1. Discuss a rangeland benchmark in full with special emphasis on its:

- Characteristics, (3)
- The need, (3)
- Usefulness, (3)
- Size, and (3)
- Area to construct a benchmark (3)

[15]

QUESTION 6

A farmer decided to determine grazing capacity in a single camp on his/her farm. The farmer clipped 40, (0.5m x 0.5m) quadrates with a **TOTAL** yield of 15 kg of grass after it was dried in an oven.

6.1. Convert the clipped grass biomass to kg/ha. Show all your calculations. (3)

6.2. Calculate the grazing capacity from the dry matter yield for a year (365 days) in kg Animal Biomass / ha / year, using a 50% utilization factor. Show all your calculations. (4)

6.3. The camp is 80 ha and the farmer is planning to stock the camp with 1500 ewes with an average mass of 55kg for 240 days. How will you advice the farmer and should he/she go ahead with the plan? Show all your calculations. (5)

6.4. What will be the correct stocking density of sheep (in numbers) on the 80-ha camp for the planned 240 days? Show all your calculations. (3)

[15]

END OF QUESTION PAPER