



**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: JUNE 2024	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

FIRST 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 3 PAGES
(Including This Front Page)**

QUESTION 1

Define the following:

- | | | |
|------|------------------------|-----|
| 1.1. | Bush thickening | (2) |
| 1.2. | Biome | (2) |
| 1.3. | Vegetation type | (2) |
| 1.4. | Continuous grazing | (2) |
| 1.5. | Large Stock Unit (LSU) | (3) |
| 1.6. | Stocking rate | (2) |
| 1.7. | Rangeland | (2) |
- [15]**

QUESTION 2

- 2.1. Differentiate between “Grazing Capacity” and “Carrying Capacity” (4)
- 2.2. Name two (2) commonly used units in which “Grazing Capacity” and/or “Carrying Capacity” is expressed (2)
- 2.3. If a camp has a Carrying Capacity of 40 kg Animal Biomass / ha and it burned completely down. What would be its Carrying Capacity and Grazing Capacity at that point in time? (4)
- [10]**

QUESTION 3

- 3.1. Name five (5) conservation requirements of good pasture plants? (5)
- 3.2. Name any five (5) signs of veld deterioration in Namibia (5)
- 3.3. Name any five (5) sound principles of rangeland management (5)
- 3.4. Name any five (5) rotational grazing systems (5)
- [20]**

QUESTION 4

- 4.1. Discuss five (5) factors leading to the increase in undesirable plants. (15)
- 4.2. Discuss the benefits of veld in good condition as opposed to veld in poor condition in the same rainfall area with special emphasise on: (10)
- Dry material (DM) production
 - Root depth

- Supplementation
- Drought risk
- Root mass and storage of growth reserves

[25]

QUESTION 5

5.1. Discuss the factors influencing the number and sizes of camps in a livestock farming production system. (15)

QUESTION 6

A farmer decided to determine the grazing capacity in a camp on his/her farm. The farmer clipped 40 (1m²) quadrates with a yield of 25 kg of grass after it was dried in an oven.

6.1. Convert the clipped grass biomass to kg/ha (3)

6.2. Calculate grazing capacity in kg Animal Biomass / ha / year, using a 50% utilization factor. (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 advise this farmer and should he/she go ahead with the plan? (5)

6.4. What will be the correct stocking density of the 80-ha camp for a planned period of 240 days? (3)

[15]

END OF QUESTION PAPER