



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

FACULTY OF HEALTH, NATURAL RESOURCES AND APPLIED SCIENCES

DEPARTMENT OF NATURAL RESOURCE SCIENCES

QUALIFICATION: BACHELOR of NATURAL RESOURCE MANAGEMENT HONOURS	
QUALIFICATION CODE: 08BNRH	LEVEL: 8
COURSE CODE: RGE811S	COURSE NAME: RANGELAND ECOLOGY
SESSION: JUNE 2025	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER(S)	Prof. Ben Strohbach
MODERATOR:	Dr Absalom Kahumba

INSTRUCTIONS
<ol style="list-style-type: none">1. Answer ALL four (4) questions.2. Candidates must correctly number their responses on the ANSWER sheet.3. Candidates are allowed to use calculators.

THIS QUESTION PAPER CONSISTS OF 2 PAGES (Including this front page)

Question 1: [20]

Define the following terms in Rangeland Science context.

- 1.1. Ecosystem (3)
- 1.2. Biome (3)
- 1.3. Veld/Vegetation type (2)
- 1.4. Carrying capacity (2)
- 1.5. Grazing capacity (2)
- 1.6. Stocking rate (3)
- 1.7. Livestock farmer (3)
- 1.8. Stability (2)

Question 2: [30]

Rangeland management in Namibia faces many challenges. Discuss challenges, but also opportunities faced by farmers in the !Karas and Hardap Regions of Namibia.

Question 3: [35]

Discuss the growth and development of a grass plant in detail with focus on growth point development, growth reserves, root growth and the growing cycle. What implications have these growth characteristics on rangeland management practises?

Question 4: [15]

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 12.5 kg of grass after it was dried in an oven.

- 4.1. Convert the clipped grass biomass to kg/ha (3)
- 4.2. Calculate grazing capacity in kg Animal Biomass / ha / year, using a 50% utilization factor (4)
- 4.3. The camp is 80 ha and the farmer is planning to stock the camp with 100 cows with an average mass of 450 kg for 240 days. How will you advice this farmer and should he/she go ahead with the plan? (5)
- 4.4. What will be the correct stocking rate of the 80 ha camp for a planned period of 240 days? (3)