FACULTY OF HEALTH, NATURAL RESOURCES AND APPLIED SCIENCES

DEPARTMENT OF NATURAL RESOURCES SCIENCES

QUALIFICATION: BACHELOR OF NATURAL RESOURCES MANAGEMENT HONOURS	
QUALIFICATION CODE: 08BNRH	**LEVEL:** 8
COURSE CODE: RGE811S	**COURSE NAME:** RANGELAND ECOLOGY
DATE: JUNE 2024	
DURATION: 3 HOURS	**MARKS:** 100

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

INSTRUCTIONS
1. Answer ALL the questions.
2. Write clearly and neatly.
3. Number the answers clearly.

PERMISSIBLE MATERIALS

1. Examination question paper
2. Answering book
3. Calculator

THIS QUESTION PAPER CONSISTS OF 2 PAGES (Excluding 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)
		(2)

Question 2:   **[30]**

Discuss the main similarities and differences between the eastern Hardap, eastern Omaheke, eastern Otjozondjupa and Kavango East Regions, i.t.o. their biophysical environment and the associated opportunities and challenges for rangeland management.

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?

3.1.	Growth point development	(5)
3.2.	Growth reserves	(10)
3.3.	Root growth	(5)
3.4.	Growth cycle	(15)

Question 4:   **[15]**

A farmer decided to determine the grazing capacity in a camp on his/her farm. The farmer clipped 40 ($1m^2$) quadrates with a yield of 25 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 1500   (5)
ewes with an average mass of 55kg for 240 days. How will you advice this
farmer and should he/she go ahead with the plan?

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