

GWANDA STATE UNIVERSITY



FACULTY OF NATURAL RESOURCES MANAGEMENT AND AGRICULTURE

DEPARTMENT OF ANIMAL PRODUCTION AND HEALTH

BACHELOR OF SCIENCE HONOURS DEGREE IN ANIMAL SCIENCE

Rangeland Ecology Management NAP 2102

SECOND SEMESTER FINAL EXAMINATION

June 2024

Time Allowed: 3 hours
Total Marks: 100
Special Requirements: None
Examiner's Name: Dr. A.S. Hlatshwayo

Instructions to Candidates:

1. The paper consists of six questions, answer **ALL** questions in Section A and **ANY TWO** in Section B.
2. Marks for each question are shown in brackets. Where a question has subdivisions, the marks for each subdivision are given.
3. Illustrate your answer, where applicable, with large clearly labelled diagrams.

MARK ALLOCATION

QUESTION	MARKS
SECTION A	60
SECTION B	40
TOTAL ATTAINABLE MARKS	100

This paper consists of three printed pages including this one

SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION

Question 1

- i) Name any two ecosystem services provided by rangelands. [2 marks]
- ii) Write any four factors that indicate the importance of rangelands. [4 marks]
- iii) What is the significance of the principles of Rangeland Ecology Management? [4 marks]
- iv) How big is the semi-arid rangeland ecosystem? [2 marks]
- v) Describe the semi-arid rangeland ecosystem rainfall. [2 marks]
- vi) Name any four recreational areas in the semi-arid rangeland ecosystem. [4 marks]
- vii) Give the scientific name of Mopane [1 mark]
- (viii). How much area is covered by Savanna woodlands? [1 mark]

Question 2

- (i) Which animal species get most of their fodder from trees and shrubs. [2 marks]
- (ii) What do we call leaf-eating animals? [1 mark]
- (iii) Which four types of plants are found on the veld? [4 marks]
- (iv) Which grass-eating livestock are collectively known as grazers or grass-eaters? [5 marks]
- (v) Name any four grasses that supply different forms of food and feed to humans and livestock. [4 marks]
- (vi) Which are the three main groups of grasses? [3 marks]
- (vii) Which one is not liked by livestock? [1 mark]

Question 3

- i. Why is bare ground not recommended on a rangeland ecosystem? [3 marks]
- ii. Which nutrients are tested in a grass sample in a laboratory? [2 marks]
- iii. Explain what happens when crude protein (CP) content of a grass sample is above 13% and above 18% and when it is below 6 – 8%? [5 marks]
- iv. What is the grazing behaviour of animals when grass has a fibre content of below 30% and above 35%. [5 marks]

- a. Write the missing values in the table below **[5 marks]**

Quality	Crude protein (CP) (%)	Fibre (%)
Good	Above %% and below
Medium – 18%	30 – 35%
Poor	10% and below	Above 35%

SECTION B. ANSWER ANY TWO QUESTIONS IN THIS SECTION

Question 4

Describe what is likely going to happen when a rangeland ecosystem does not have good cover and what causes the situation. **[20 marks]**

Question 5

Identify and discuss any four vegetation types of Zimbabwe **[20 marks]**

Question 6

Explain why is the condition of a rangeland ecosystem important? **[20 marks]**

END OF QUESTION PAPER

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