NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

FACULTY OF HEALTH, NATURAL RESOURCES AND APPLIED SCIENCES

SCHOOL OF AGRICULTURE AND NATURAL RESOURCE SCIENCES

DEPARTMENT OF NATURAL RESOURCE SCIENCES

QUALIFICATION: BACHELOR OF NATURAL RESOURCES MANAGEMENT	
QUALIFICATION CODE: 07BNRS	LEVEL: 6
COURSE CODE: REM611S	COURSE NAME: RANGELAND ECOLOGY AND MANAGEMENT
DATE: JULY 2024	
DURATION: 3 HOURS	MARKS: 150

SECOND OPPORTUNITY/SUPPLEMENTARY EXAMINATION QUESTION PAPER	
EXAMINER(S)	Ms. E. N. Nghalipo
MODERATOR:	Prof. Ben Strohbach

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 4 PAGES (Excluding this front page)

QUESTION 1

Describe the following terms and phrases fully, as applied to Rangeland Ecology and Management.

1.1	Carrying capacity	(2)
1.2	Stocking rate	(2)
1.3	Decreaser grasses	(2)
1.4	Plant Succession	(2)
1.5	Prescribed Fire	(2)
1.6	Ground fire	(2)
1.7	Desertification	(2)
1.8	Bush encroachment	(2)
1.9	National Park Management Plan	(2)
1.10	Root cause analysis	(2)

[20]

QUESTION 2

2.1 Discuss the current status and trends of the Namibian rangelands, giving relevant examples, explain factors contributing to its state.   (10)

2.2 What does the current status of the Namibian rangelands mean in terms of the socio-economic aspect of the country?   (10)

[20]

QUESTION 3

3.1 What are the main objectives for assessing veld/rangeland conditions?   (5)

3.2 List 5 common bush encroacher species in Namibian rangelands.   (5)

[10]

QUESTION 4

4.1 You are the newly appointed Warden of Etosha National Park. You are given three years of veld monitoring data for one habitat type and are required to interpret them.   (15)

The data you have are as follows:

Results of 200-point step-point survey for the tree and woodland Savanna habitat type:

Year	Decreaser	Increaser I	Increaser II a	Increaser II b	Increaser II c
2016	90	50	20	20	20
2017	80	70	30	10	10
2018	100	60	20	10	10

Use the Ecological Index Method to compare veld condition for the tree and woodland savanna between 2016-2017-2018.

[15]

QUESTION 5
5.1 Explain the following terms and the consequences of each and how can they be prevented in communal areas? (15)
a) Overstocking

b) Overgrazing

[15]

QUESTION 6
6.1 Using a sketch/diagram to illustrate, explain the ecological succession process. (10)

[10]

QUESTION 7

7.1 Landscape Function Analysis (LFA) is a widely recommended approach for rehabilitation work in rangelands, mining industry and conservation. Explain why this approach is recommended. (8)

7.2 What aspects does LFA assess? (2)

[10]

QUESTION 8

8.1 Fire behaviour is influenced by different factors. Mention *five* factors, and briefly explain how these factors influence fire behaviour. (5)

8.2 Describe the factors that determine vegetation recovery after fire. (6)

8.3 Differentiate between a head fire and a backfire. (4)

[15]

QUESTION 9

During a road strip count, visibility distance is recorded at 100m intervals, and the distances are listed in the table below.

Sample	Width (m)
1	10
2	10
3	35
4	22
5	20
6	30
7	15
8	20
9	25
10	10

9.1 Explain why game count is an important aspect of wildlife management. (2)

9.2 During which types of wildlife surveys is the MSV used? (2)

9.3 Calculate the mean strip visibility from measurements that were taken in a study area (2) and are listed in the table above.

9.4 What is the length of the transect along which these measurements were taken? Show (2) your calculations.

9.5 What kind of vegetation type would you expect in this study area? (2)

[10]

QUESTION 10

10.1 Foot and Mouth Disease is a serious threat to the beef and tourism industry in (10) Namibia. Explain how this disease is *transmitted, the carriers, symptoms as well as the control measures.*

[10]

QUESTION 11

11.1 Littering is one of the problems that NUST main campus is facing. As a Natural (15) Resource Management student, you have been tasked by the department of Natural Resource Sciences to find solutions to the problem. **Conduct a root cause analysis on littering problem on NUST campus, clearly outlining the root causes, contributing factors as well as Corrective actions**

[15]

Total marks: 150

The END