



<b>FACULTY</b>	AGRICULTURE, ENGINEERING & NATURAL SCIENCES		
<b>DEPARTMENT</b>	ENVIRONMENTAL SCIENCE		
<b>SUBJECT</b>	DISTURBANCE AND RESTORATION ECOLOGY		
<b>SUBJECT CODE</b>	EBL 3802		
<b>DATE</b>	NOVEMBER/DECEMBER 2022		
<b>DURATION</b>	2 HOURS	<b>MARKS</b>	70

**REGULAR EXAMINATION**

**Examiner:** Dr W. C. Nesongano (University of Namibia)

**Internal Moderator:** Prof I. Mapaure (University of Namibia)

**External Moderator:** Prof C.T. Downs (University of KwaZulu-Natal)

This examination paper consists of three (3) pages including the cover page.

***Instructions***  
**SECTION A:** answer ALL questions  
**SECTION B:** answer only ONE question.

**UNIVERSITY OF NAMIBIA EXAMINATIONS**

### Section A

Answer all questions in this section. This section is worth 45 marks.

1. Urbanization is a serious problem in Namibia, which has culminated into the loss/fragmentation of natural habitats for a lot of organisms. Recommend four ways to reduce the influx of people to urban areas. (4)
2. Succession used to be viewed as “a steady process towards a predetermined community in equilibrium with the environment”. This is no longer the case in modern ecology. What is reflected in the modern views of succession? (5)
3. Explain why the uprooting of a tree in a woodland is a form of a disturbance. (5)
4. Use an example to explain the Intermediate Disturbance Hypothesis to a second-year ecology class. (7)
5. Compare and contrast small and large herbivores in terms of their impacts on the environment. (8)
6. You were able to trap individuals of a species of small mammals from few sites in Namibia. Your wish is to produce a map showing the distribution range of the species in the country but you do not have money to sample further. However, you have information such as temperature, precipitation rate, soil types, vegetation cover etc., for the whole country. How would you produce the map without having to go back to the field? (5)
7. When is seeding / planting necessary in ecological restoration? (4)
8. The use of nurse/ cover species is common in ecological restoration.
  - (i) What is a nurse plant species? (2)
  - (ii) How are such species important in ecological restoration? (5)

*Sub-total marks (Section A) = 45*

## SECTION B

Answer only one question from this section. This section is worth 25 marks.

### Question 1

Many ecological systems have an evolutionary history and with several types of disturbances, to which organisms have learned to adapt. Discuss the different adaptive strategies plants have evolved towards:

(a) Herbivory (10)

(b) Fire (10)

Three marks will be allocated to general introduction and two to concluding remarks. (5)

OR

### Question 2

You are a young female ecology student who just completed a study on the impact of grazing in the communal area of the Kunene region. You found that the area is overgrazed and is moving towards a desertified state.

Write an Essay using the guidelines below:

(i) Provide a brief introduction about grazing as a disturbance in savanna ecosystems, and its effects on ecosystems. (5)

(ii) Explain how you expect the almost decade-long drought that the area has experience to further affect the ecosystem. (3)

(iii) Provide recommendations for mitigating the effects of grazing under drought conditions. (7)

(iv) Explain the possible obstacles you might encounter before and after sharing your finding with the people living in the area, and how you will overcome such obstacles. (8)

(v) Round off your essay with concluding remarks. (2)

*Sub-total marks (Section B) = 25*

*Grand Total Marks = 70*

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END OF EXAMINATION