



<b>FACULTY</b>	<b>AGRICULTURE, ENGINEERING AND NATURAL SCIENCES</b>
<b>SCHOOL</b>	<b>SCIENCE</b>
<b>DEPARTMENT</b>	<b>ENVIRONMENTAL SCIENCE</b>
<b>SUBJECT</b>	<b>ECOLOGICAL FIELD TECHNIQUES</b>
<b>SUBJECT CODE</b>	<b>EBL3632</b>
<b>DATE</b>	<b>OCTOBER/ NOVEMBER 2022</b>
<b>DURATION</b>	<b>3 Hours</b>
<b>MARKS</b>	<b>100</b>

### **REGULAR EXAMINATION**

**Examiners:** Dr C. Hay & Mrs M.A. Morkel

(University of Namibia)

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

This examination consists of 3 pages (including the front page)

#### ***Instructions***

- Answer **all** questions from Section A (**Total 70 marks**)
- Answer **only 1** question from Section B (**Total 30 marks**)
- The use of scientific calculators is allowed

**UNIVERSITY OF NAMIBIA EXAMINATIONS**

## SECTION A

Answer **all** questions from this section

### **Question 1** [20 marks]

- 1.1 Distinguish between field replicate samples and splits. (4)
- 1.2 You are planning to determine the average mass of the Namib Sand Gecko in a particular habitat in the desert. Explain the process to determine the optimum sample size. (2)
- 1.3 Students sampled vegetation at 10 different points in a habitat using quadrats. They decided to place five quadrats at every location sampling point. Explain why it is necessary to place five quadrats at each sampling point rather than just one? (3)
- 1.4 Identify the negative impacts non-native aquatic plant species can have on an aquatic ecosystem. (6)
- 1.5 You are planning to survey the waterfowl nests on the islands at Hardap Dam. Briefly describe the preventative measures you will take to minimise the disturbance of the birds when recording the data. (5)

### **Question 2** [20 marks]

- 2.1 You are doing research on earthworms and are required to remove them from the soil. Name the instrument you would use to extract the earthworms and explain how it works. (5)
- 2.2 Differentiate between the following pairs of terms:
- a) Sampling in time and sampling in space, (2)
  - b) Basal cover and canopy cover. (2)
- 2.3 What type of invertebrates can be collected using a pitfall trap? Explain why a preservative is often added to pitfall traps and what do we then call such traps? (5)
- 2.4 As an intern at the National Museum, you must collect bees and moths for preservation. Name the traps that you would use to catch each of these organisms and a disadvantage associated with each of these collection methods. (4)
- 2.5 List two methods of arranging small mammal traps. (2)

### **Question 3** [30 marks]

- 3.1 You are planning to capture large mammals in Etosha National Park by using traps. Explain the factors you need to consider before setting the traps to capture these animals. (10)
- 3.2 Explain the actions you can take to target certain fish species when using longlines. (5)

3.3 Explain the procedure involved in removing a bat from a mist net. (10)

3.4 What is a herbarium, and what are its two primary functions? (5)

**SECTION B**

Answer only **ONE** question from this section

**Question 1** [30 marks]

1.1 Rock lobster is an important resource which generates revenue for Namibia. Describe the fishing method you would use to harvest this species and discuss the advantages and disadvantages of the method. (15)

1.2 Describe the method to sample zooplankton. (15)

**Question 2** [30 marks]

You are tasked to sample vegetation in a woodland. Discuss the Line Intercept and Point Centred Quarter (PCQ) method as **plotless** sampling methods you would consider using and discuss their advantages and disadvantages.

-----END OF EXAMINATION-----