

<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>JANUARY 2022</b>
<b>DURATION</b>	<b>3 Hours</b>
<b>MARKS</b>	<b>120</b>

## **SUMMER EXAMINATION**

**Examiners:** Dr. C. Hay (University of Namibia)

Dr. L. Hart (University of Namibia)

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

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

- Answer all questions from Section A (Total 90 marks)
- Answer only 1 question from Section B. (Total 30 marks)
- The use of scientific calculators is allowed

## Section A

Answer **all** questions from Section A

### **Question 1** [25 marks]

- 1.1. Describe what a beating tray is, how it is used, what organisms are collected with them and give an advantage of this particular collection method. (7)
- 1.2. Discuss the basic components of species diversity. (4)
- 1.3. Explain how *Utricularia* spp. obtain nutrients from the aquatic ecosystem. (4)
- 1.4. Describe the method when sampling phytoplankton. (10)

### **Question 2** [25 marks]

- 2.1. Name four live trapping techniques for reptiles and amphibians and state the type of organisms they are most likely to trap. (8)
- 2.2. Why is it necessary/important to randomize sampling? (6)
- 2.3. Highlight the points you need to consider when collecting a plant specimen. (6)
- 2.4. Discuss the advantages and disadvantages of longline fishing. (5)

### **Question 3** [40 marks]

- 3.1. You are interested to study small mammals in Etosha. Describe the steps that you would undertake during your planning phase? (15)
- 3.2. Marine fish play a very important role in the Namibian economy. Trawling is one of the methods used by fishing companies for harvesting. Explain this method using different types of trawls to emphasise your answer. (12)
- 3.3. Explain the method you would follow to estimate the butterfly population size in an open area. (8)
- 3.4. List the information you need to record when sampling zooplankton. (5)

***Sub-total marks (Section A) = 90***

## **Section B**

Answer only **one** question from Section B

### **Question 1** [30 marks]

Describe in detail (include equipment and training) the health and safety considerations you need to keep in mind when sampling in an aquatic ecosystem. Discuss this in relation to sampling from a shore, lake or along the coast, from a boat and from rivers and streams. (30)

### **Question 2** [30 marks]

You have been requested to study the abundance, cover and distribution of the submerged aquatic plant species in the Von Bach Dam and in the area near Rundu in the Kavango River. Explain in detail the different methods you will be using to record your data. (30)

*Sub-total marks (Section B) = 30*

*Grand Total Marks =120*

**\*\*\*END OF QUESTION PAPER \*\*\***