UNAM
UNIVERSITY OF NAMIBIA

FACULTY	**AGRICULTURE, ENGINEERING AND NATURAL SCIENCES**
SCHOOL	**SCIENCE**
DEPARTMENT	**ENVIRONMENTAL SCIENCE**
SUBJECT	**ECOLOGICAL FIELD TECHNIQUES**
SUBJECT CODE	**EBL3632**
DATE	**NOVEMBER 2021**
DURATION	**3 hours**
MARKS	**120**

REGULAR 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)

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 in Section A.

Question 1 **[25 marks]**

1.1. Briefly describe which factors you need to consider when planning your data collection for a study on fish in the Kavango River? (7)

1.2. Briefly explain how you will determine the optimum sample size when studying the diversity of grass species in the savanna. (3)

1.3. A 200 m^2 area is covered with species A. The total number of species A counted in this area is 1000. Only 100 m^2 is suitable for this species. Calculate (show calculation) the following: (4)

a) The Absolute Density of species A
b) The Ecological Density of species A

1.4. Describe all the features of a light trap for catching insects. (7)

1.5. Explain the performance curve. (4)

Question 2 **[25 marks]**

2.1. State the points you need to consider when labelling scientific specimens in the field. (7)

2.2. State any FIVE important considerations when collecting blood samples from an animal. (5)

2.3. Explain the method you will use to catch live squid. (5)

2.4. Highlight the importance of developing a hypothesis before starting a research project. (8)

Question 3 **[40 marks]**

3.1. Which features of submerged aquatic plants render them excellent indicators for environmental assessment? (9)

3.2. Emphasise the differences/similarities between a mist net and a harp net when catching bats. (10)

3.3. Which elements do you need to consider when live baiting small mammals? (11)

3.4. Which factors can influence the number of plant/ animal species you record during a survey? (4)

3.5. Describe the thermal stratification layers in lentic systems. (6)

Sub-total marks (Section A) = 90

SECTION B

Answer only **ONE** question from Section B.

Question 1 **[30 marks]**

Identify any THREE large mammal surveying techniques. For each discuss the disadvantages, methodological considerations and types of information / data that can be obtained. (30)

Question 2

A management tool was developed in New Zealand using selected features of submerged aquatic plants to measure the conditions of a water body. This is called the Lake Submerged Plant Indicators or LakeSPI. Discuss this concept in detail. Also, highlight the advantages of using submerged plants. (30)

Sub-total marks (Section B) = 30

Grand Total Marks =120

***END OF QUESTION PAPER ***