



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

FACULTY OF HEALTH, NATURAL RESOURCES AND APPLIED SCIENCES

SCHOOL OF AGRICULTURE AND NATURAL RESOURCE SCIENCES

DEPARTMENT OF NATURAL RESOURCES SCIENCES

QUALIFICATION : BACHELOR OF NATURAL RESOURCES MANAGEMENT HONOURS	
QUALIFICATION CODE: 08BNRH	LEVEL: 8
COURSE: Conservation Biology	COURSE CODE: CSB810S
DATE: June 2023	
DURATION: 3 (three) hours	MARKS: 100

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER(S)	Dr T. Nzuma
MODERATOR:	Prof. H. Ndagurwa

INSTRUCTIONS
<ol style="list-style-type: none">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 2 PAGES (Excluding this front page)

Question 1

[20]

Define the following ecological terms, using examples.

- 1.1 Genetic stochasticity [2]
- 1.2 Carrying capacity [2]
- 1.3 Demographic trends [2]
- 1.4 Genetic diversity [2]
- 1.5 Habitat restoration [2]
- 1.6 Keystone species [2]
- 1.7 Population conservation [2]
- 1.8 Sustainable use [2]
- 1.9 Threatened species [2]
- 1.10 Wildlife corridor [2]

Question 2

[30]

- a) What are biodiversity indices? Describe the Shannon and Simpson's index, their respective formulas, and how they are used to measure biodiversity. [20]
- b) A community contains the following species and their respective abundances: [10]

Species	Abundance
A	50
B	30
C	20

Calculate the Shannon and Simpson's index for this community.

Question 3

[20]

What are the principles of conservation biology? Describe each principle and provide an example of its application in biodiversity conservation. [20]

Question 4

[30]

a) What are invasive alien species and why are they a threat to biodiversity? Describe the characteristics of invasive alien species and provide an example of their impact on ecosystems. [20]

a) A population of an invasive plant species is introduced to a new environment. The population grows from 50 individuals to 500 individuals in 10 years. Using the formula $r = \ln(N_t/N_0) / t$, what is the annual growth rate of the population? [10]

THE END

Total Marks: 100