NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

FACULTY OF NATURAL RESOURCES AND SPATIAL SCIENCES

DEPARTMENT NATURAL RESOURCES AND AGRICULTURAL SCIENCES

QUALIFICATION: BACHELOR OF NATURAL RESOURCE MANAGEMENT HONOURS (NATURE CONSERVATION)	
QUALIFICATION CODE: 07BHNC	**LEVEL: 7**
COURSE CODE: NCE720S	**COURSE NAME**: NATURE CONSERVATION ECOLOGY 3
DATE: JANUARY 2019	**PAPER:** THEORY
DURATION: 3 Hours	**MARKS:** 100

SUPPLEMENTARY/ SECOND OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER(S)	MR. T. NZUMA
MODERATOR:	PROF. I. MAPAURE

INSTRUCTIONS
1. Answer ALL seven (7) questions. 2. Read all questions carefully before answering. 3. Number your answers clearly. 4. Make sure your student number appears on the answering script.

PERMISSIBLE MATERIALS

1. Examination paper.
2. Examination script.

THIS QUESTION PAPER CONSISTS OF 3 PAGES (Including this front page)

Question 1 **[20]**

Give any five examples of national laws that are relevant to conservation in Namibia, and explain their roles.

Question 2 **[25]**

Use the following information to answer Questions 2.1 and 2.2.

An engineer is planning the electricity supply for an isolated city. She wants to make the system as energy efficient and environmentally friendly as possible, but her options are limited. The two options she is considering are as follows.

Option 1: coal-burning power station on a coal field approximately 300 km from the Windhoek, with high-voltage transmission lines between them.
Option 2: diesel power station in the city of Windhoek, generating power at the desired voltage (250 V AC).
In Option 1, the efficiency of the various stages in the process is as follows.

- efficiency of the generating plant (coal to electricity) = 60%
- efficiency of the long-distance, high-voltage transmission lines = 90%
- efficiency of the transformers to convert high voltage to 250 V in the city = 90%

In Option 2, the diesel power station is approximately 60% efficient (oil fuel to electricity, ready to use).

2.1 Calculate what percentage of the coal's energy reaches the city. [5]

2.2 One kilogram of diesel-oil fuel used contains 8000 kJ of energy.
How much of the energy contained in the diesel-oil fuel is not converted to electricity when burnt in the power station? [5]

Question 3 **[20]**

Explain latitudinal gradients of species richness using examples.

Question 4 **[10]**

Using examples distinguish between an ecological resource and an economic resource.

Question 5 **[10]**

Name and explain any five distinct problems involved with captive breeding programs.

Question 6

What factors will determine whether a single large reserve or several small reserves will contain more species? Explain.

Question 7 **[20]**

7.1 Why do islands have such impressive numbers of endemic species? [5]

7.2 What is a biodiversity hotspot? [5]

7.3 Provide an example from your text or lectures that illustrates your understanding of over-exploitation and its threat to biodiversity. [10]

THE END

Total Marks: 100