



FACULTY	AGRICULTURE, ENGINEERING & NATURAL SCIENCES		
DEPARTMENT	ENVIRONMENTAL SCIENCE		
SUBJECT	FUNCTIONAL BIODIVERSITY OF TERRESTRIAL ECOSYSTEMS		
SUBJECT CODE	EBB5972		
DATE	NOVEMBER 2021		
DURATION	3 HOURS	MARKS	120

REGULAR EXAMINATION

EXAMINERS: PROF. I. MAPAURE (UNIVERSITY OF NAMIBIA)
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This **question paper** consists of **four (4) pages** including the cover page

Instructions

- Candidates must answer ALL questions in Section A and ANY TWO questions in Section B.

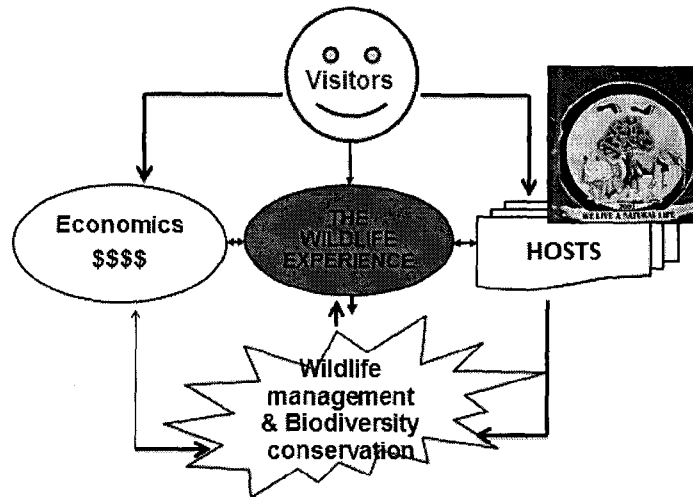
UNIVERSITY OF NAMIBIA EXAMINATIONS

SECTION A

Answer ALL questions in this Section.

Question 1.

Savanna ecosystems are used and managed for various purposes including for biodiversity conservation and wildlife-based tourism. Use the illustration below to review some important considerations required in order to balance these two objectives. (12 marks)



Source: [Mapaure \(2017\)](#)

Figure 1. Schematic illustration of the relationship between biodiversity conservation and wildlife-based tourism.

Question 2

Catenas are characterized by changes in soils texture and associated vegetation changes on a single slope. Explain the relationship between soil texture and vegetation physiognomy along a catena. (8 marks)

Question 3.

“Despite significant international and corporate commitments and declarations, deforestation and forest degradation are still increasing, or at best, not experiencing the level of reductions necessary” (WWF, 2021). Discuss 5 key reasons why this is the case. (10 marks)

Question 4.

Discuss how plant-available moisture and nutrients interact to influence the quantity and quality vegetation. (10 marks)

Question 5.

Figure 2 below shows variation in percent (%) moisture and relative humidity in an arid habitat.

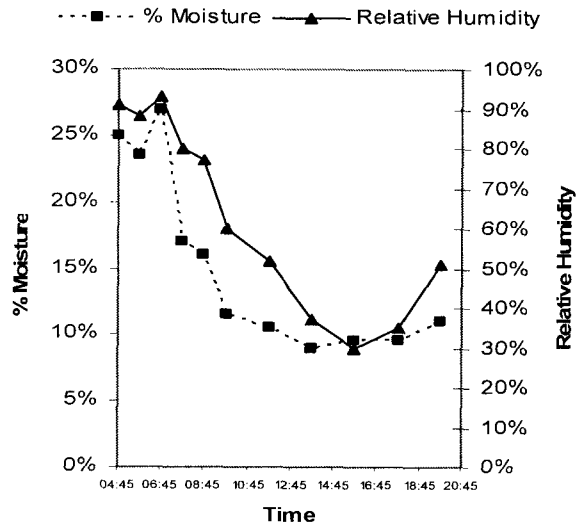


Figure 2. Temporal variation in percent (%) moisture and relative humidity in an arid habitat.

- Describe the trends revealed by results presented in Figure 1 (4 marks).
- With reference to physiological and behavioral adaptations of desert animals, suggest a foraging strategy which a desert-living small antelope should adopt during water shortage and temperature changes in the desert. (6 marks)

Question 6

Discuss the United Nations' (UN) guiding principles of ecological restoration. (10 marks)

Sub-total marks (Section A) = 60

SECTION B

Answer **ANY TWO** questions from this Section. Structure each answer **using clear sub-headings**, including an Introduction and a Conclusion.

Question 1

Critically review the primary causes and consequences of the 'empty forest syndrome'. The consequences must focus only on biodiversity and ecosystem functioning. (30 marks)

Question 2

Critically review the impacts of climate change on natural terrestrial biodiversity and ecosystem functioning. (30 marks)

Question 3

Namibia and other drier countries of the world are at high risk of Desertification. Discuss how desertification is manifested. (30 marks)

Sub-total marks (Section B) = 60

Grand Total Marks = 120

*****END OF EXAMINATION PAPER*****