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	
QUALIFICATION CODE: 07BNRS	**LEVEL: 7**
COURSE CODE: CSE721S	**COURSE NAME:** CONSERVATION ECOLOGY 3
DATE: NOVEMBER 2024	
DURATION: 3 HOURS	**MARKS:** 100

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER(S)	Ms Vimbai Marufu
MODERATOR:	Dr Christopher Brown

INSTRUCTIONS
1. Answer ALL the questions.
2. Write clearly and neatly.
3. Number the answers clearly.

PERMISSIBLE MATERIALS

1. Examination question paper
2. Answering book

THIS QUESTION PAPER CONSISTS OF 2 PAGES (Excluding this front page)

SECTION A: GENERAL KNOWLEDGE [25]
QUESTION 1: MULTIPLE CHOICE QUESTIONS [5]
Evaluate the statements in each numbered section and select the most appropriate answer

1.1   For what does the abbreviation HPD stand in ecology?
   a) Holistic Park Development
   b) Hierarchical Patch Dynamics
   c) Histrionic Personality Disorder
   d) High Performance Designs
   e) Hyperspectral Presence Detection
   a)

1.2   The abbreviation NDVI is used in ecology for:
   a) Non Dependant Vegetation Index
   b) Near Difference Vegetation Index
   c) Nano Dimension Vegetation Index
   d) Normalised Difference Vegetation Index
   e) None of the above

1.3   How would you evaluate the effectiveness of a given patch's size in supporting a specific species' population viability in a fragmented landscape?
   a) By measuring the distance between patches
   b) By establishing a correlation between patch size and species population density
   c) By comparing the biodiversity of different habitats
   d) By assessing the nutrient availability in the soil
   e) All of the above

1.4   For what is the abbreviation CAS used in ecology?
   a) Close Air Support
   b) Confirmation of Acceptance for Studies
   c) Complex Adaptive Systems
   d) Central African States
   e) Central Authentication Service
   b)

1.5   Which of the following is a form of heterogeneity:
   c) Pit and mound microtopography.
   d) Plant neighbourhoods
   e) Boundary effects
   f) All of the above
   g) None of the above.

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QUESTION 2: CONCEPTS [20]

2.1 Define density dependence. [4]

2.2 Define the concept patch dynamics. [4]

2.3 List the various aspects of the non-equilibrium theory. [5]

2.4 Define Landscape connectivity. [2]

2.5 List and explain the three states in which a patch can exist. [3]

2.3 Define the concept of metapopulation. [2]

SECTION B: LONG ANSWER QUESTIONS [75]

Please answer ALL of the questions in this section.

QUESTION 3: Landscape ecology and metapopulations [35]

What is Landscape ecology? In a Namibian context, using a landscape as an ecological management unit, choose one of the following natural resources and explore a) the appropriate landscape scale of managing the resource and b) how different components interact within this landscape. Also discuss what information you need for managing these resources.

Choice of natural resources to manage (choose one):
Water resources
Game
Grazing
Protected species

QUESTION 4: Evidence-based management: [40]

To effectively manage an ecological problem, one needs to find the root cause of the problem and apply a holistic approach to solving the problem. *Opuntia stricta* is a major invader in Namibian savannas. To manage the problem effectively, if you were assigned to prepare a management plan, **what information do you need** to prepare such a management plan? Where can you source such information? How trustworthy are such information sources?

END OF QUESTION PAPER