

BINDURA UNIVERSITY OF SCIENCE EDUCATION

BACHELOR OF SCIENCE DEGREE

NR 120(2)

DEPARTMENT OF NATURAL RESOURCES

BSc PART I: Examination

PRINCIPLES OF ECOLOGY AND BIODIVERSITY

2 HOURS (70 MARKS)

 JUN 2023

INSTRUCTIONS

Answer **THREE** questions out of the following five questions. You must answer question **One** from **SECTION A** and any **Two** questions from **SECTION B**.

SECTION A (COMPULSORY)

1. (a) Distinguish between the following:

- | | |
|---|-----------|
| i. Ecosystem goods and ecosystem services | [4 MARKS] |
| ii. Ecological and economic carrying capacity | [4 MARKS] |
| iii. Primary and secondary succession | [2 MARKS] |

(b) With the aid of a well labelled diagram, describe the nitrogen cycle. [12 MARKS]

(c) Write short notes on the following:

- | | |
|-------------------|-----------|
| i. Niche breadth | [4 MARKS] |
| ii. Niche overlap | [4 MARKS] |

SECTION B

2. With the use of examples, describe the following biological interactions:

- | | |
|------------------|-----------|
| (a) Mutualism | [5 MARKS] |
| (b) Parasitism | [5 MARKS] |
| (c) Commensalism | [5 MARKS] |
| (d) Ammensalism | [5 MARKS] |

3. (a) Describe the characteristics of the savannah biome. [10 MARKS]
- (b) Distinguish between interspecific and intraspecific competition. [10 MARKS]

4. (a) Using a well labelled diagram, highlight the major phases of the logistic growth model. **[10 MARKS]**
- (b) Explain how the following factors affect population growth:
- (i) biotic **[5 MARKS]**
- (ii) abiotic **[5 MARKS]**
5. Discuss the impacts of climate change on global biodiversity. **[20 MARKS]**

END OF PAPER