BINDURA UNIVERSITY OF SCIENCE EDUCATION
BIOLOGICAL SCIENCES DEPARTMENT
BScBZH/HBScED/BScED
PRINCIPLES OF ECOLOGY (BZH 114/ ECOLOGY / BZH 201)

EXAMINATION
2 HOURS (100 MARKS)

AUG 2024

INSTRUCTIONS TO CANDIDATES
Answer FOUR questions. You MUST answer QUESTION 1 (Section A) and any THREE questions from section B. Each question carries 25 MARKS. Where a question contains sub-divisions, the mark value of each sub-division is given in brackets. Illustrate your answer where appropriate with large clearly labelled diagrams. You should not spend more than thirty minutes on each question.

SECTION A (COMPULSORY)

1. In a study on a population of frogs, 80 individuals were marked and released. After some time, a second sample of 200 frogs was captured, and only 15 of them were marked.

(a) Calculate the estimated population size of frogs in the area using the Lincoln-Peterson Index formula. (5 marks)

(b) Describe assumptions and limitations of the mark and recapture method. (20 marks)

SECTION B

2. (a) Describe three types of survivorship curves. (15 marks)

(b) Describe and explain the logistic and exponential growth models of population growth. (10 marks)

3. Write short notes on any **FIVE** of the following terms:

(a) Population regulation (5 marks)
(b) Commensalism (5 marks)
(c) Keystone species (5 marks)
(d) Density dependent factors (5 marks)
(e) K-selection (5 marks)
(f) Causes of succession (5 marks)

4. Describe the process of population dispersion and provide examples of different types of dispersion patterns observed in nature.

5. Compare and contrast mutualism, commensalism, and parasitism, providing examples of each.

6. Discuss the factors that contribute to species diversity within a community.

END OF EXAMINATION QUESTION PAPER