

BIO 211



ALUPE UNIVERSITY

OFFICE OF THE DEPUTY PRINCIPAL
ACADEMICS, STUDENT AFFAIRS AND RESEARCH

UNIVERSITY EXAMINATIONS
2025 /2026 ACADEMIC YEAR
SECOND YEAR FIRST SEMESTER REGULAR EXAMINATION

**FOR THE DEGREE OF BACHELOR OF
EDUCATION SCIENCE**

COURSE CODE: BIO 211

COURSE TITLE: FUNDAMENTALS OF ECOLOGY

DATE: 17TH DECEMBER, 2025

TIME: 09.00AM – 12.00PM

INSTRUCTIONS TO CANDIDATES

- SEE INSIDE

THIS PAPER CONSISTS OF 8 PRINTED PAGES

PLEASE TURN OVER

BIO 211

REGULAR – MAIN EXAM

BIO 211: FUNDAMENTALS OF ECOLOGY

STREAM: BED (SCIENCE)

DURATION: 3 Hours

INSTRUCTIONS TO CANDIDATES

- i. Answer *ALL* questions from section A and any *FOUR* from section B.
- ii. Diagrams should be used whenever they serve to illustrate the answer.
- iii. Do not write on the question paper.

SECTION A

Question One

- a. List any THREE population distribution patterns. (3 Marks)
- b. Give any TWO factors affecting species distribution. (2 Marks)
- c. What is meant by the term minimum viable population? (3 Marks)
- d. What are the THREE patterns of population growth? (3 Marks)
- e. Differentiate between Synecology and Autecology. (4 Marks)

Question Two

- a. What are any THREE types of ecology levels in an ecosystem? (3 Marks)
- b. List any THREE edaphic factors that can affect an ecosystem. (3 Marks)
- c. What is ecological balance? (2 Marks)
- d. Give any FOUR environmental issues that are related to ecological imbalance. (4 Marks)
- e. List any THREE benefits that organisms derive from ecosystems (3 Marks)

SECTION B (40 MARKS)

Question Three

Populations within an ecosystem are dynamic as they can increase decrease or even remain constant in terms of numbers. Discuss any FIVE causes of such changes in any given ecosystem. (10 Marks)

Question Four

- a. What is meant by the following terms
 - i. Edge effect. (2 Marks)
 - ii. Edge species. (2 Marks)
 - iii. Ecotone. (2 Marks)
- b. List any FOUR ways in which ecotones are vital in an ecosystem. (4 Marks)

Question Five

- a. Explain any TWO ways through which climate change can affect the health of any population. (4 Marks)
- b. Discuss any THREE impacts of climate change on an ecosystem (6 Marks)

Question Six

- a. List any TWO laws of Thermodynamics governing the flow of energy within an ecosystem. (2 Marks)
- b. Discuss the FOUR trophic levels associated with an ecosystem (8 Marks)

Question Seven

Account for the process through which nitrogen is cycled within an ecosystem. (10 Marks)
