



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY

SCHOOL OF BIOLOGICAL AND PHYSICAL SCIENCES

**UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE
IN BIOLOGICAL SCIENCES**

THIRD YEAR FIRST SEMESTER 2018/2019 ACADEMIC YEAR

MAIN CAMPUS - REGULAR

COURSE CODE: SBI 3312
COURSE TITLE: PRINCIPLES OF ECOLOGY II
EXAM VENUE: STREAM: (BIO)
DATE: EXAM SESSION:
TIME: 2 HOURS

Instructions:

- 1. Answer ALL questions in Section A and Any two questions in Section B**
 - 2. Candidates are advised not to write on question paper**
 - 3. Candidates must hand in their answer booklets to the invigilator while in the examination room**
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SECTION A: SHORT ANSWER QUESTIONS (30 MARKS)

1. Define the following ecological terms a) Community b) Synecology. (3 marks)
2. Distinguish between:
 - a) Species richness and Species diversity (1.5 marks)
 - b) Beta and Gamma diversities (1.5 marks)
3. Distinguish between a) Interspecific- and intraspecific competitions b) exploitation and interference competitions. (3 marks)
4. A) Define the term “Ecological Niche”. B) Using an illustration, distinguish between fundamental and realized niche. (3 marks)
5. Explain 3 ways by which community structures can be delineated. (3 marks)
6. Briefly discuss the principle of competitive exclusion. (3 marks)
7. One of the ways of studying community structures is by grouping organisms at levels higher than the species, list three such levels. (3 marks)
8. Using an example, explain why pollination is regarded a co-evolutionary process between plants and animals (3 marks).
7. Distinguish between objective and subjective sampling of ecological communities. (3 marks)
8. A) Define the term “Ecological Niche”. B) Using an illustration, distinguish between fundamental and realized niche. (3 marks)
9. With an illustration, explain three types of plant responses to herbivory (3 marks)
10. Using an illustration, explain the sigmoid population growth curve (3 marks)

SECTION B: ESSAY QUESTIONS (40 MARKS)

11. The holistic and the individualistic community concepts have shaped our understanding of community structures today, discuss. (20 marks)
12. Discuss key ecosystem services derived from wetlands. (20 marks)
13. Discuss human influence on the structure and functions of ecological communities. (20 marks)
14. Discuss how vegetation structure and composition influence animal diversity in a community. (20 marks)