JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY

SCHOOL OF BIOLOGICAL AND PHYSICAL SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF EDUCTION SCIENCE WITH IT

2ND YEAR 1ST SEMESTER 2016/2017 ACADEMIC YEAR

MAIN CAMPUS - REGULAR

COURSE CODE:	**SZL 202**
COURSE TITLE:	**BASIC ECOLOGY**
VENUE:	**STREAM: (BED. SC)**
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**

SECTION A: SHORT ANSWER QUESTIONS (30 MARKS)

1. Give definition of the term ecology according to the following scientists. (3 marks)
    a. Ernest Haekel.
    b. Charles Elton.
    c. Odum Eugene.
2. Distinguish between fundamental niche and realized niche with reference ecological studies. (3 marks)
3. Using one example in each case, give any three types of symbiotic associations in ecosystems. (3 marks)
4. Explain "carrying capacity" in ecological terms. (3 marks)
5. Briefly explain why transfer of food energy from the source plants through series of organisms is never 100%. (3 marks)
6. Outline three features that determine biological structure within a community. (3 marks).
7. Using a diagram, explain the effect of the amount of an essential nutrient on the growth of an organism or population size of a species. (3 marks)
8. Outline any three steps that should be taken by students of Jaramogi Oginga Odinga University of Science and Technology to conserve biodiversity within Bondo town. (3 marks)
9. Distinguish between intraspecific and interspecific competition giving one example of each from a named ecosystem. (3 marks)
10. State three main differences between r-selected and k-selected species. (3 marks)

SECTION B: ESSAY QUESTIONS (40 MARKS)

11. Explain how you can measure primary productivity in an ecosystem by the following methods and mention their limitations. (20 marks)
    a. Harvest method.
    b. Light and dark bottle method.
12. Describe the carbon cycle and explain the consequences of continued increase of carbondioxide in the atmosphere. (20 marks)
13. Discuss the factors that regulate populations in ecosystems. (20 marks)
14. Critically analyze the various methods of species conservation. (20 marks)