JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY

SCHOOL OF BIOLOGICAL AND PHYSICAL SCIENCES

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

1st YEAR 2nd SEMESTER 2018/2019 ACADEMIC YEAR

MAIN CAMPUS - REGULAR

COURSE CODE: SBT 104

COURSE TITLE: FUNDAMENTALS OF EOLOGY & CONSERVATION

EXAM VENUE: **STREAM: (BED/BIO)**

DATE: 26/4/19 **EXAM SESSION:12.00 – 2.00PM**

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. Using a well labeled diagram, illustrate the flow of energy and nutrients in an ecosystem (3 marks).
2. Describe your understanding of the following terms: (3 marks).
   a). Ecosytem, b) Community, c) Detrivores
3. Define "ecological succession" and explain how livestock grazing and browsing can initiate ecological succession in rangeland (3 marks).
4. Explain the significance of the following microorganisms to the nitrogen cycle (3 marks).
   a) Nitrosomonas b) Pseudomonas c) Nitrobacter
5. Compare the temperate and tropical grasslands using the following ecological attributes (3 marks).
   a) Primary productivity b). Large herbivore community c). Human use
6. Define the term "Competition Exclusion Principle" and explain its implication on population growth (3 marks).
7. Using appropriate diagrams, describe the three main types of population dispersions (3 marks).
8. Outline any THREE importances of National Parks and Game reserves in Kenya (3 marks).
9. Using appropriate examples in a terrestrial ecosystem, differenciate between interspecific and intraspecific competition (3 marks).
10. Outline any THREE implications of "global warming" (3 marks).

SECTION B: ESSAY QUESTIONS (40 MARKS)

11. Discuss the carbon cycle (20 marks).
12. Using well labeled diagrams, describe the
    a) Ecological pyramids (12 marks).
    b) Giving specific examples, discuss four abiotic factors that determine distribution and abundance of plant communities (8 marks).
13. Critically analyze "eutrophication" in aquatic ecosystems (20 marks).
14. Discuss adaptation strategies employed by xerophytes (20 marks).