



**MASENO UNIVERSITY**  
**UNIVERSITY EXAMINATIONS 2016/2017**

**THIRD YEAR FIRST SEMESTER EXAMINATIONS FOR THE  
DEGREE OF BACHELOR OF SCIENCE AND BACHELOR OF  
EDUCATION SCIENCE WITH INFORMATION TECHNOLOGY**

**MAIN CAMPUS**

**SZL 313: APPLIED ECOLOGY**

Date: 1<sup>st</sup> December, 2016

Time: 12.00 - 3.00 pm

---

**INSTRUCTIONS:**

- Answer ALL questions in SECTION A and any TWO in SECTION B.

---

BACHELOR OF SCIENCE WITH IT AND BACHELOR OF EDUCATION  
(SCIENCE WITH IT)

**SZL 313: APPLIED ECOLOGY**

**INSTRUCTIONS:**

Answer all questions in this section

1. Briefly explain the negative effects of construction of railway passage across a national game park
2. Briefly explain how you would use wildlife abundance data from monitoring programmes in estimating status and trends.
3. Explain the two core principle objectives for ecosystem management.
4. With examples explain the ecological consequences of global warming on community ecosystems.
5. Explain the ecological significance of biological monitoring giving examples of the different categories of species used.
6. Explain "ecosystem stability" in light of disturbance and perturbations.
7. Explain the effects of stress at the different levels of biological organization and its management.
8. Explain the following concepts as used in population ecology:  
(a) Minimum viable population (b) Metapopulations.

**SECTION B (Answer any TWO questions)**

9. Discuss the concept of maximum sustainable yield (MSY) in the regulation of fisheries, forestry and game management.
10. Discuss the effects of xenobiotics on natural wildlife populations and highlight the steps involved in the engineering of microbes for environmental degradation of organic pollutants.
11. Discuss factors that would lead to loss of genetic variation in a population and highlight the criteria for the IUCN red listing.
12. Discuss the impact of increased human population on the ecosystem