



MACHAKOS UNIVERSITY

University Examinations 2016/2017

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

**FOURTH YEAR FIRST SEMESTER EXAMINATION FOR BACHELOR OF SCIENCE
(BIOLOGY)**

SZL 415: ECOLOGY FOR SUSTAINABLE DEVELOPMENT

DATE: 27/7/2017

TIME: 8:30 – 10:30 AM

INSTRUCTIONS

Answer Question One and Any Other Two Questions

1. a) Define the following terms:
 - i Sustainable development. (1 mark)
 - ii Water pollution. (1 mark)
 - iii Biodiversity (1 mark)
- b) i What causes eutrophication of water bodies? (2 marks)
- ii Human population growth is alarming especially in developing countries, explain three actions that can be taken to survive the overshoot. (3 marks)
- iii Outline the principles for achieving ecologically sustainable development. (2 marks)
- c) i Describe ways in which the concept of sustainable development can be enforced in high-density, low income countries. (2 marks)
- ii State the limitations of regeneration of biological resources. (3 marks)
- iii Explain the role of ecology in national development. (1 mark)

- d)
 - i Describe some of the principles of EIA. (2 marks)
 - ii What are the factors causing species extinction in agricultural ecosystems? (3 marks)
 - iii State the advantage of biological sampling compared to chemical methods? (1 mark)
- e)
 - i Discuss the three main indicators of biodiversity at the community level. (3 marks)
 - ii Describe the main human activities causing water pollution in Kenya. (2 marks)
 - iii State the objectives of The Convention on Biological Diversity. (3 marks)
- 2.
 - a) Discuss the factors that contribute to continued human population growth in Africa. (10 marks)
 - b) Outline the major problems caused by use of fossil energy in developed countries. (10 marks)
- 3.
 - a) Describe ways of protecting misuse of natural resources in developing countries. (10 marks)
 - b) What is the objective of EIA? Outline the main steps followed when carrying out EIA. (10 marks)
- 4.
 - a) Outline the threats facing the conservation of biodiversity in Kenya. (10 marks)
 - b) Waste management in most towns is a challenge, describe how water pollution can be monitored in L. Victoria. (10 marks)
- 5.
 - a) Explain how clearing forest to grow crops and graze livestock can have disastrous consequences on biodiversity. (10 marks)
 - b) Describe the significance of dams on control of floods. (10 marks)