



# MACHAKOS UNIVERSITY

University Examinations for 2020/2021 Academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

FOURTH YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (BIOLOGY)

SZL 415: ECOLOGY & SUSTAINABLE DEVELOPMENT

DATE: 20/8/2021

TIME: 11:00 – 1:00 PM

---

## INSTRUCTIONS

Answer Question One and Any Other Two Questions

### QUESTION ONE (COMPULSORY) (30 MARKS)

- a) Describe the concept of social sustainability (3 marks)
- b) Explain why ecologists disagree with the economists' description of sustainability (4 marks)
- c) Outline three ways by which world nations can demonstrate commitment to international sustainable development principles (3 marks)
- d) Outline the significance the commission for sustainable development (2 marks)
- e) Outline three main goals of sustainable agriculture (3 marks)
- f) Describe three indicators of biodiversity in an ecosystem (3 marks)
- g) Explain why biodiversity conservation/protection is important (3 marks)
- h) Explain how consumer behaviour may contribute to environmental decline (3 marks)
- i) Explain three factors that may contribute to decline of world aquatic species (3 marks)
- j) Describe three challenges faced by the social component of environmental impact assessment (3 marks)

**SECTION B: ANSWER ANY OTHER TWO QUESTIONS**

**QUESTION TWO (20 MARKS)**

Discuss global challenges in the advancement of sustainable development

**QUESTION THREE (20 MARKS)**

Some scientists have argued that intensification of agriculture is unnecessary and unsustainable. Discuss.

**QUESTION FOUR (20 MARKS)**

- a) Explain possible ecological effects of the construction of Thwake dam (10 marks)
- b) Describe mitigation measures that can be used to protect forest ecosystems (10 marks)

**QUESTION FIVE (20 MARKS)**

Discuss sustainable practices that should guide the development of world cities