



MACHAKOS UNIVERSITY

University Examinations for 2018/2019 Academic Year

SCHOOL OF ENVIRONMENT AND NATURAL RESOURCES MANAGEMENT

DEPARTMENT OF ENVIRONMENTAL SCIENCES

SECOND YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR IN ENVIRONMENTAL STUDIES (RESOURCE CONSERVATION

BACHELOR IN ENVIRONMENTAL STUDIES (COMMUNITY DEVELOPMENT)

ENS 241: BIODIVERSITY CONSERVATION

DATE: 25/7/2019

TIME: 11.00-1.00 PM

INSTRUCTIONS:

Answer question ONE and any other TWO questions

QUESTION ONE (30 MARKS)

- a) Describe the levels of measuring biodiversity (9 marks)
- b) Illustrate how the Simpson's Diversity Index is expressed and what it represents. (7 marks)
- c) Explain briefly why it is unlikely that the true figure of living species will ever be known (3 marks)
- d) How does biodiversity enhance our appreciation and enjoyment of nature? (4 marks)
- e) Explain briefly how climate change contributes to biodiversity loss. (4 marks)
- f) Explain why larger animals are comparatively less diverse compared to insects. (3 marks)

QUESTION TWO (20 MARKS)

- a) All species have an inherent right to exist regardless of their use to human beings and should at least be preserved naturally. Discuss briefly and critically whether you will apply this idea to anopheles mosquitoes that transmit malaria. (10 marks)
- b) Explain why a managed ecosystem like a farmland is much more susceptible to ecological invasions than a natural ecosystem. (10 marks)

QUESTION THREE (20 MARKS)

- a) Explain briefly why life is not distributed uniformly in the biosphere. (10 marks)
- b) Explain how alien/exotic species can negatively affect biodiversity and ecosystem health. (10 marks)

QUESTION FOUR (20 MARKS)

- a) Explain the ecological value of biodiversity that warrants its conservation. (10 marks)
- b) Explain why alien plant species have become increasingly invasive in Africa. (10 marks)

QUESTION FIVE (20 MARKS)

Despite the influence of many conservation strategies/ and conventions in the world, the goals of conservation, resource management and environmental quality are not getting high priorities in developing countries.

- a) Discuss critically how biodiversity conservation objectives are being enhanced in Kenya. (10 marks)
- b) What are the underlying causes of biological diversity decline in Kenya? (10 marks)