



MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF ENVIRONMENT AND NATURAL RESOURCES MANAGEMENT

DEPARTMENT OF ENVIRONMENTAL SCIENCES

SECOND YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF ENVIRONMENTAL STUDIES (RESOURCE MANAGEMENT)

BACHELOR OF ENVIRONMENTAL SCIENCE

ENS 241: BIODIVERSITY CONSERVATION

DATE: 23/11/2020

TIME: 8:30 – 10:30 AM

INSTRUCTIONS:

Answer question ONE and any other TWO questions

QUESTION ONE (COMPULSORY) (30 MARKS)

- a) Describe the three (3) levels of measuring biodiversity (6 marks)
- b) Illustrating the Simpson's Diversity Index, calculate and explain Species diversity as shown in the table below. (8 marks)

Species	Numbers of organisms
A	4
B	8
C	0
D	1
E	7

- c) Explain why alien invasive species have a competitive advantage over native species. (6 marks)
- d) Discuss how climate change contributes to biodiversity loss. (10 marks)

QUESTION TWO (20 MARKS)

All species have an inherent right to exist regardless of their use to human beings and should at least be preserved naturally.

- a) Critically discuss whether you would apply this idea to anopheles mosquitoes that transmit malaria. (10 marks)
- b) Discuss certain cases where and when preservation of natural environments is justifiable. (10 marks)

QUESTION THREE (20 MARKS)

- a) Explain how alien/exotic species can negatively affect biodiversity and ecosystem health. (10 marks)
- b) Discuss why alien plant species have become increasingly invasive in Africa. (10 marks)

QUESTION FOUR (20 MARKS)

- a) Explain briefly why life is not distributed uniformly in the biosphere. (10 marks)
- b) Discuss the importance of biodiversity conservation in Kenya. (10 marks)

QUESTION FIVE (20 MARKS)

Discuss the causes of biodiversity decline and the measures being undertaken to enhance it in Kenya.