



MACHAKOS UNIVERSITY

University Examinations 2019/2020 Academic year

SCHOOL OF HEALTH SCIENCES

DEPARTMENT OF PUBLIC AND COMMUNITY HEALTH

SECOND YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE IN PUBLIC HEALTH.

HPH 204: ECOLOGY AND HEALTH

DATE: 5/12/2019

TIME: 2.00-4.00 PM

INSTRUCTIONS

This paper consists of two sections A and B

Section A is compulsory

Section B choose any two (2) questions

SECTION A: COMPULSORY (30 MARKS)

QUESTION ONE (30 MARKS)

- a) Define the following
 - i. Ecosystem
 - ii. Eutrophication
 - iii. Trophic level
 - iv. Per capita population growth rate (4 marks)
- b) Differentiate between the following
 - i. Biotic and Abiotic
 - ii. Autotrophs and Heterotrophs
 - iii. Genetic and Ecosystem diversity (6 marks)
- c) Highlight the basic ecological determinants of Health (3 marks)
- d) “The climax stage of an ecosystem is not completely permanent”. Explain (3 marks)
- e) Briefly explain two factors that determine an ecosystem stability (3 marks)

- f) Explain three (3) aspects covered under the waste management regulations in Kenya towards ecological preservation (3 marks)
- g) “The greater the number of alternative pathways in a food web, the more stable is the community of living things” Explain (3 marks)
- h) Identify two (2) goals of biological monitoring in an ecosystem (2 marks)
- i) Highlight three (3) health impacts of global warming (3 marks)

SECTION B:

Specific Instructions

- This section has four (4) question
- Answer any two (2) questions
- Each question is 20 Marks

QUESTION TWO (20 MARKS)

- a) With the aid of a diagram discuss the Nitrogen cycle (10 marks)
- b) Discuss how air pollution affects the ecosystem and diversity (10 marks)

QUESTION THREE (20 MARKS)

- a) Human activity is a major threat to the planet's biodiversity. Discuss the effects of unsustainable farming as a major threat to ecosystems biodiversity (15 marks)
- b) Discuss the process of natural selection (5 marks)

QUESTION FOUR (20 MARKS)

- a) Discuss the effects of human activity on the water cycle (8 marks)
- b) An ecosystem has the following organism-plants, sheep, rabbits, hyenas, snakes, vultures, leopards, giraffes, zebra, bacteria and fungi, lions.
- i. Develop three food chains and a food web that exist in this ecosystem (10 marks)
 - ii. Explain what will happen if lions and leopards were removed in this ecosystem (2 marks)

QUESTION FIVE (20 MARKS)

- a) Explain five core functions of National Environmental Management Authority in Kenya. (10 marks)
- b) With an aid of a diagram describe the carbon cycle. (10 marks)