



Technical University of Mombasa

Faculty of Applied and Health Sciences

DEPARTMENT OF **ENVIRONMENT AND HEALTH SCIENCE**

DIPLOMA IN ENVIRONMENTAL SCIENCES

(DES 12S)

AES 2102: GLOBAL ECOSYSTEM

SPECIAL/SUPPLEMENTARY: EXAMINATIONS

SERIES: February 2013

TIME: 2 HOURS

INSTRUCTIONS:

You should have the following for this paper

- *Answer booklet*

This paper consists of **FIVE** questions.

Answer Question **ONE (compulsory)** and any other **TWO** questions

This paper consists of 2 PRINTED pages

Question ONE

- a) Define the following terminologies as used in global ecosystem
 - (i) Ecosystem (2marks)
 - (ii) Population (1mark)
 - (iii) Heterotrophy (1mark)
 - (iv) Species (1mark)
 - (v) Biosphere (1mark)
 - (vi) Biome (1mark)
- b) Differentiate between the following concepts
 - a) Realized niche and Fundamental niche (4marks)
 - b) Block factors and A biotic factors (2marks)
 - c) Energy flow and nutrient flow (2marks)
 - d) Macronutrients and micronutrients (2marks)
 - e) Cells and Tissues (2marks)
 - f) Intraspecific competition and interspecific competition (2marks)
- c) Explain briefly how anthropogenic activities have influenced the following cycle
 - a) Hydrological cycle (4marks)
 - b) Carbon cycle (3marks)
 - c) Name the different spaces interactions within an ecosystem (2marks)

Question TWO

Using a diagram illustrate the following concepts

- a) Food chain (5marks)
- b) Patterns of population growth (10marks)

Question THREE

- a) Using a diagram illustrate classification of ecosystems (5marks)
- b) Describe problems facing wetlands in Kenya and possible solutions (10marks)

Question FOUR

- a) Explain FIVE Biodiversity conservation conventions (5marks)
- b) Explain classification of levels of Organisms (5marks)
- c) Organisms are presenting divided into 5 Kingdoms, pick any two and explain their characters. (5marks)

Question FIVE

- a) Describe the challenges to urban ecosystems (10marks)
- b) Explain how we can mitigate global warming as an issue of global concern. (5marks)