

# TECHNICAL UNIVERSITY OF MOMBASA

## FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF ENVIRONMENT & HEALTH SCIENCES

UNIVERSITY EXAMINATION FOR:

BTRE15S, BTAP15S & BSMM15S SEMESTER II

AES 4101- ENVIRONMENTAL STUDIES SEMESTER EXAMINATION

SERIES: APRIL/MAY 2016

TIME: 2 HOURS

### *Instructions to Candidates*

This paper consists of FIVE questions

Answer question ONE (COMPULSORY) and any other TWO questions

*This paper consists of two printed pages.*

### **Question One (Compulsory)**

- a. Define the following terms (**5 marks**)
  - i. Primary energy
  - ii. Biological Oxygen Demand (BOD)
  - iii. Holocoenosis
  - iv. Genetic erosion
  - v. Animate energy
- b. Explain the functional components of an ecosystem (**3marks**)
- c. Describe the principle components of the earth (**4marks**).
- d. Describe the forces driving the hydrological cycle (**4marks**).
- e. Giving examples, explain the forms of pollutants that exist in the environment. (**3marks**).
- f.
  - i. Define the term 'biogeochemical cycle'. (**1mark**)
  - ii. Describe the importance of biogeochemical cycle in an ecosystem. (**4marks**)
- g. Describe the environmental impacts of mining as a land use in Kenya. (**4marks**)
- h. Describe three measures that can be taken by the Kenyan government to prevent the expansion of human population in the cities. (**3 marks**).

### **Question Two**

Discuss ways in which humans alter the biogeochemical cycle in Kenya today (**20marks**).

### **Question Three**

Using a well labeled diagram, describe the nitrogen cycle indicating the component processes where necessary. (**20marks**).

### **Question Four**

Discuss the potential environmental impacts of agricultural land uses along River Tana and the effective management strategies (**20marks**).

### **Question Five**

Discuss the environmental impacts (pros and cons) of the discovered oil fuels in Turkana region of Kenya. (**20marks**).