



“Investing in Africa’s future”

COLLEGE OF HEALTH, AGRICULTURE AND NATURAL SCIENCES

ANE 207: BIOTECHNOLOGY AND THE ENVIRONMENT

END OF SECOND SEMESTER EXAMINATIONS

APRIL/MAY 2019

LECTURER: Mr. Tabarira J.

DURATION: 3 HRS

INSTRUCTIONS

Answer any **five** questions

All questions carry equal marks (20).

DO NOT repeat material.

Write legibly.

Credit will be awarded for logical, systematic and neat presentations

Question 1

Make brief explanatory notes on the following:

- a. There is no waste in nature [5]
- b. Role of microorganisms in the food processing industry [5]
- c. Negative effects of man's activities to the environment [10]

Question 2

Discuss in support of the notion that: Organic farming is the answer to the current food security and environmental pollution challenges associated to agricultural production. [25]

Question 3

a. Define the following terms:

- i. Biotechnology, [1]
- ii. Environment, [1]
- iii. Pollution [1]
- iv. Bioremediation, [1]
- v. Bio waste, [1]
- vi. Poverty, [1]
- vii. Hazardous waste [1]
- viii. Transgenic crops, [1]
- ix. Bio fertilizer, and [1]
- x. Water pollution. [1]

b. Using a flow diagram, discuss the yoghurt processing procedure at Africa University. [10].

Question 4

- a. Demonstrate your understanding of any **four** abiotic components of the environment [12]
- b. State and explain the main pillars of food security [8]

Question 5

- a. With the aid of a diagram, explain the structure and functions of a bio-filter in air pollution control [10]
- b. Discuss briefly the attributes of Vesicular Arbuscular Mycorrhiza (VAM) which make it an effective bio-fertilizer in crop production systems. [10]

Question 6

- a. Define a pollutant and explain any four properties of pollutants. [10]
- b. State the objectives of composting bio-waste and discuss factors affecting the composting process. [10]

Question 7

Write explanatory notes on the following:

- a. Environmental concerns of adoption of GMO technology. [5]
- b. State and briefly explain attributes of an ideal bio-marker / bio-indicator. [5]
- c. Give a detailed account of the limitations in the use of bio-herbicides as a weed control method. [5]
- d. Crop production and food security concerns of GMO technology [5]

End of Paper
