

20



(University of Choice)

**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

UNIVERSITY EXAMINATIONS

2021/2022 ACADEMIC YEAR

SECOND YEAR SECOND SEMESTER EXAMINATIONS

FOR THE DEGREE

OF

**BACHELOR OF SCIENCE IN DASTER MITIGATION AND SUSTAINABLE
DEVELOPEMENT**

COURSE CODE: DSM 207

COURSE TITLE: AGRICULTURE, FOOD AND ENVIRONMENT

DATE: 19/04/2022

TIME: 12 – 2PM

INSTRUCTIONS TO CANDIDATES

Answer **ONE** and any other **TWO** questions

TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over.

Question ONE

- a) Using relevant examples, define the following terms:
- i) Agriculture system (2 Marks)
 - ii) Transgenic organism (2 Marks)
 - iii) Externality (2 Marks)
 - iv) Precision Agriculture (2 Marks)
 - v) Chronic food insecurity (2 Marks)
- b) Outline the importance of Agriculture on Environment and Health. (8 Marks)
- c) Explain the main impacts trade play on food security in Kenya. (8 Marks)
- d) Explain the relationship between environmental security and food security. (4 Marks)

Question TWO

The analysis of food security has progressively moved towards the concept of food systems and food and nutrition security. Discuss the main drivers informing the transition. (20 marks)

Question THREE

According to some research findings, elevated levels of Nitrogen and Phosphorus in Lake Victoria are linked to agricultural activities in the Lake's upper catchment. The same findings associate the rising level of the nutrients with proliferation of water hyacinth and subsequently reduced level of fish catch. You have been asked to present this cause-effect relationship and potential solutions to the problem of nutrient overload. Suggest and explain the main components of a model that will assist you to illustrate the finding and potential solutions. (20marks)

Question FOUR

- a) Discuss the main impacts of drought on:
- i). Agriculture (4 Marks)
 - ii). Environment (4 marks)
- b) Explain the main principles underling sustainable Agriculture and approaches to sustainable Agriculture. (8 Marks)
- c) Explain the relationship between energy use in agricultural production systems and climate change. (4 Marks)