



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

MAIN CAMPUS

UNIVERSITY EXAMINATIONS

2021/2022 ACADEMIC YEAR

THIRD YEAR SECOND SEMESTER EXAMINATIONS

SPECIAL/SUPPLEMENTARY EXAMINATION

FOR THE DEGREE OF

BACHELOR OF SCIENCE IN DISASTER PREPAREDNESS AND ENVIRONMENTAL TECHNOLOGY

COURSE CODE: DPE 310

COURSE TITLE: BIOTECHNOLOGY & DISASTER MANAGEMENT

DATE: 03/08/2022

TIME: 11 – 1 PM

INSTRUCTIONS TO CANDIDATES

Question one (1) is compulsory {total = 30 Marks}

Attempt any other two (2) {total = 40 Marks} from the remaining questions

Be brief and to the point

MMUST observes ZERO tolerance to examination cheating

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

SECTION I: COMPULSORY {30 MARKS}

Question ONE

- a) Identify and describe any two (2) aspects of modern technologies that are directly relevant to solving Africa's most critical challenges. **(10 Marks)**
- b) Using examples, differentiate between 'traditional biotechnology' and 'modern biotechnology'. **(10 Marks)**
- c) Illustrate the level of adoption of agricultural biotechnology in developing countries. **(10 Marks)**

SECTION II: ATTEMPT ANY OTHER TWO (2) QUESTIONS {40 MARKS}

Question TWO

- a) What specific challenges do farmers in Africa face as they practice agriculturally based biotechnology? **(10 Marks)**
- b) Identify and discuss any five (5) benefits that are generated from agricultural biotechnology. **(10 Marks)**

Question THREE

Describe the role that is played by the following systems in biotechnology:

- a) Industrial catalysts and chemicals **(5 Marks)**
- b) Fibers **(5 Marks)**
- c) Biosensors **(5 Marks)**
- d) Food **(5 Marks)**

Question FOUR

- a) Differentiate between pro-biotics and pre-biotics in agriculture. **(10 Marks)**
- b) Name and describe any two (2) factors that determine the success of investment in bio-based industrial products. **(10 Marks)**