



# MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

(Main Campus)

UNIVERSITY EXAMINATIONS  
2022/2023 ACADEMIC YEAR

## Main Examination

THIRD YEAR SECOND SEMESTER EXAMINATIONS

FOR THE DEGREE OF

BACHELOR OF SCIENCE IN DISASTER PREPAREDNESS & ENVIRONMENTAL  
TECHNOLOGY

COURSE CODE: DPE 310

COURSE TITLE: BIOTECHNOLOGY AND DISASTER MANAGEMENT

DATE: 18/4/2023 TIME: 8-10 AM

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### Instructions to Candidates

- This paper contains FOUR (4) questions
- Question **one 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 1: COMPULSORY {30 MARKS}**

### **Question ONE**

- a) The use of living organisms to carry out defined biochemical processes for industrial applications, i.e., organisms, in the manufacturing or service industry, like genetic fingerprinting is the technology to embrace for sustainable development. Using examples classify the technology in question (15 marks)
- b) State and explain the main benefits and challenges encompassing Environmental biotechnology emphasizing on any three (3) branches of Biotechnology (15 marks)

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

### **Question TWO**

The Green Revolution succeeded in tripling the food supply, yet it was not enough to feed the growing human population? Discuss and JUSTIFY the statement (20 marks)

### **Question THREE**

The recombinant DNA technological processes have made immense impact in healthcare by enabling mass production of safe and more effective therapeutic drugs. Using the knowledge of biotechnology, elaborate on the statement (20 marks)

### **Question FOUR**

*Advanced agricultural biotechnology* can contribute to meeting the challenges experienced in agricultural food security in the country. CRITIC the statement (20 marks)