



*(Knowledge for Development)*

**KIBABII UNIVERSITY**  
**UNIVERSITY EXAMINATIONS**  
**2020/2021 ACADEMIC YEAR**  
**FOURTH YEAR FIRST SEMESTER**  
**SPECIAL/ SUPPLEMENTARY EXAM**

**FOR THE DEGREE OF BACHELOR OF SCIENCE**

**COURSE CODE:** SBL 412

**COURSE TITLE:** ETHICS AND RISCKS IN BIOTECHNOLOGY

**DATE:** 10<sup>TH</sup> JANUARY 2022

**TIME:** 8.00 – 10.00 AM

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**INSTRUCTIONS TO CANDIDATES**

Answer question **ONE** [1] and **ANY** other **TWO** [2] questions

TIME: 2 Hours

This paper consists of 2 printed pages. Please Turn Over



KIBU observes ZERO tolerance to examination cheating

### **Question 1**

a). Define the following terms as used in physiology

- i). Biosafety (2 marks)
- ii). Genetic Engineering (3 marks)
- iii). Bioethics (3 marks)
- iv). Biorisk (2 marks)

b). State five points to consider in the design and submission of protocols for the transfer of recombinant nucleic acid molecules into human research participants (5 marks)

c). Explain the biological containment of GMO plants (5 marks)

d). what are the ethical issues that surround cloning as a new technology (5marks)

e). State some of the benefits of genetically modified plants (5marks)

### **Question 2**

Gene therapy is considered to be the newest frontier in the battle against disease. What are the major ethical concerns for the implementation of such a procedure? (20marks)

### **Question 3**

Explain the rationale of standard assays in biotechnology (20marks)

### **Question 5**

Describe the risks of genetically modified organisms (20marks)

### **Question 5**

Discuss the ethics and risks of recombinant DNA technology (20marks)