



(Knowledge for Development)

KIBABII UNIVERSITY
UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR

SECOND YEAR FIRST SEMESTER
MAIN EXAMINATIONS

**FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE
AND BIOTECHNOLOGY**

COURSE CODE: ABI 211/SBL112
COURSE TITLE: INTRODUCTION TO BIOTECHNOLOGY
DATE: 24TH JANUARY 2022 **TIME: 2 – 4 PM**

INSTRUCTIONS TO CANDIDATES

Answer Question ONE and any other TWO Questions.

TIME: 2 Hours

This paper consists of 2 printed pages. Please Turn Over



KIBU observes ZERO tolerance to examination cheating

QUESTION ONE

- a. Define the following terms.
 - i. Biotechnology - (2 marks)
 - ii. Traditional biotechnology (2 marks)
 - iii. Modern biotechnology (2 marks)
 - iv. Mutagenesis (2 marks)
 - v. Restriction enzymes (2 marks)
- b. Briefly describe the principles of recombinant DNA Technology (5 marks)
- c. List the four main organisms used as a source of single cell proteins (4 marks)
- d. List five legal issues of biotechnology in the society today. (5 marks)
- e. Define tissue culture and explain its importance in crop propagation. (6 marks)

QUESTION TWO

Giving examples, discuss the application of biotechnology in the following sectors

- i. Medicine (5 marks)
- ii. Agriculture (5 marks)
- iii. Processing industry (5 marks)
- iv. Forensics (5 marks)

QUESTION THREE

Discuss the important steps followed when coming up with an animal clone. (20 marks)

QUESTION FOUR

The concept of Genetically Modified Organisms (GMO) has for long been a controversial issue in the agriculture industry. Discuss the issues surrounding use of GMO's and how best to demystify the misleading ideologies in the society. (20 marks)

QUESTION FIVE

Discuss the challenges and opportunities facing the use of biotechnology in agriculture. (20 marks)