

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD DEGREE OF BACHELOR OF SCIENCE IN MICROBIOLOGY AND BIOTECHNOLOGY, BACHELOR OF SCIENCE IN BIOLOGY, BACHELOR OF EDUCATION SCIENCE

BOTA 443: APPLIED BIOTECHNOLOGY

STREAMS:

TIME: 2 HOURS

DAY/DATE: TUESDAY 18/4/2023

8.30 A.M. – 10.30 A.M.

INSTRUCTIONS: *Answer all questions in section A and any two in section B*

SECTION A:

1. Define the following terms (6 marks)
 - a. Somatic hybridization
 - b. Patent
 - c. Somaclonal variation
2. Discuss the types of biosensors. (6 marks)
3. Describe three tools of molecular biology. (6 marks)
4. Discuss the process of protein engineering. (6 marks)
5. Discuss the application of DNA sequencing. (6 marks)

SECTION B:

6. Discuss the applications of biotechnology. (20 marks)
7. Discuss types of genetic markers used in biological processes (20 marks)
8. a) Discuss the features of downstream processing processes for industrial fermentations. (10 marks)
- b) Describe the process of application for a patent in Kenya. (10 marks)