

CHUKA



UNIVERSITY

RESIT /SPECIAL EXAMINATION

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN
BOTA 436: INDUSTRIAL MICROBIOLOGY**

STREAMS:

TIME: 2 HOURS

DAY/DATE: WEDNESDAY 03/11/2021

11.30 A.M – 1.30 P.M

INSTRUCTIONS:

Answer all questions in section A and any two in section B

SECTION A (30 marks)

1. Define the following terms as used in an industrial process (2 marks)
 - i. Flocculation
 - ii. Mass transfer
2. Describe the growth of microorganisms under a batch culture (5 mark)
3. Explain situations where it may be necessary to use genetically engineered microbes in industrial processes. (4 marks)
4. State the uses of the ethanol produced through fermentation. (4 marks)
5. Explain how the quality of industrial products is maintained during the whole operation (5 marks)
6. State the disadvantages of a batch fermentation process. (4 marks)
7. Describe the preparation of inoculum during fermentation process (6 marks)

SECTION B (40 MARKS)

8. Discuss the characteristics of industrial microorganisms (20 marks)

9. Discuss the features of an industrial fermenter (20 marks)

10. a. Describe the ideal properties of a plasmid for use in genetic engineering of industrial microbes (10 marks)

b. Discuss the production of enzymes from microbes. (10 marks)
