

**CHUKA**



**UNIVERSITY**

**UNIVERSITY EXAMINATIONS**

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN  
BIOLOGY**

**BOTA 436: INDUSTRIAL MICROBIOLOGY**

**STREAMS: BSC BIO**

**TIME: 2 HOURS**

**DAY/DATE: FRIDAY 17/04/2020**

**8.30 A.M. – 10.30 A.M.**

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**INSTRUCTIONS:**

- **Answer all questions in section A and any other TWO in section B.**

**SECTION A (30 MARKS)**

1. State the features of industrial processes. (3 marks)
2. Describe the qualities that an organism used in an industrial process must have. (4 marks)
3. Describe how you would keep a newly isolated industrial microorganism in a continuous metabolic state for a long time. (4 marks)
4. Explain the steps you would follow when running a processing plant to ensure that the products are of the highest quality. (5 marks)
5. State the advantages of a batch fermentation process. (4 marks)
6. Describe four non-beverage uses of ethanol. (4 marks)
7. Describe the applications of any six groups of industrial enzymes that are produced through bacterial fermentation. (6 marks)

**SECTION B (40 MARKS)**

**ANSWER ANY TWO QUESTIONS**

8. Discuss the production of single cell proteins (SCP). (20 marks)

9. Discuss the production of penicillin through fermentation. (20 marks)
10. (a) Discuss the hydrolysis of cellulose for industrial fermentation process. (10 marks)
- (b) Describe the ideal properties of a plasmid for use in genetic engineering of industrial process. (10 marks)
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