



THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

A. M. E. C. E. A

MAIN EXAMINATION

AUGUST - DECEMBER 2015 TRIMESTER

FACULTY OF SCIENCE

DEPARTMENT OF BIOLOGY

REGULAR PROGRAMME

BIO 213: TECHNIQUES IN INDUSTRIAL MICROBIOLOGY

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Date: DECEMBER 2015

Duration: 3 Hours

INSTRUCTIONS: Answer Question ONE and ANY other THREE Questions

- Q1. a) Explain the following types of fermentation processes
- i Batch fermentation. (4 marks)
 - ii Continuous fermentation. (4 marks)
- b) State the properties of a useful industrial micro-organism. (3 marks)
- c) Briefly discuss FOUR types of culture media. (4 marks)
- d) Discuss factors that affect bio-remediation. (3 marks)
- e) List and explain THREE types of bio-deterioration. (3 marks)
- f) Explain characteristics of a good antibiotic. (3 marks)
- g) Briefly discuss the stages involved in scaling up. (10 marks)
- Q2. Discuss the application of micro-organisms in the production of household products and industrial products. (20 marks)
- Q3. State and explain the methods of microbe preservation used by microbiologist. (20 marks)

Q4. Discuss the characteristics of an ideal fermentation medium. **(20 marks)**

Q5. Discuss physical and chemical methods used to control micro-organisms.
(20 marks)

END