

**UNIVERSITY OF KABIANGA**

**UNIVERSITY EXAMINATIONS**

**20154/2015 ACADEMIC YEAR**

**FOURTH YEAR FIRST SEMESTER EXAMINATION**

**FOR THE DEGREE OF BACHELOR OF SCENCE IN BIOCHEMISTRY**

**COURSE CODE: BIO 414**

**COURSE TITLE: INDUSTRIAL BIOCHEMISTRY**

**DATE: 5TH DECEMBER, 2014**

**TIME: 2.00 .M-5.00 P.M**

**INSTRUCTIONS TO CANDIDATES:**

Answer **ALL** Questions.

**Question One**

1. Name the most commonly used microorganism for industrial production of citric acid.(1 marks)
2. Explain the microbial biosynthesis of citric acid. (4 marks)
3. Explain the factors affecting the regulation of citric acid production. (5 marks)

**Question Two**

1. Define antibiotics. (1 mark)
2. Explain the application of antibiotics. (4 marks)
3. Describe the biosynthesis of streptomycin. (5 marks)

**Question Three**

1. Explain microbial production of methane. (3 marks)
2. State and explain the factors affecting methane production. (3 marks)
3. Describe the process of biogas production. (4 marks)

**Question Four**

1. Define biotransformation. (1 mark)
2. How is penicillin G transformed? (5 marks)
3. Why is cell-free enzyme system in the form of immobilized enzymes most commonly used in transformation? (4 marks)

**Question Five**

1. Explain how single cell protein is produced from methanol. (5 marks)
2. State the advantages of using microorganisms for single cell protein production. (5 marks)

**Question Six**

1. Explain the levels of pollution monitoring agencies. (4 marks)
2. Define biosensor. (1 mark)
3. Describe the important biosensor used in environmental pollution monitoring. (5 marks)

**Question Seven**

1. What are ways in which oxygen gets dissolved in water? (2 marks)
2. State and briefly explain the nature of water pollutants. (8 marks)