

**UNIVERSITY OF KABIANGA**

**UNIVERSITY EXAMINATIONS**

**2015/2016 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: 4TH DECEMBER, 2015**

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

**INSTRUCTIONS TO CANDIDATES:**

Answer **ALL** Questions in **section A** and any other **TWO** from **section B**.

**SECTION A; (40 MARKS)**

**Question One**

Discuss the microbial production of citric acid. (8 marks)

**Question Two**

1. Explain the enzyme technology and the principles of applied genetics. (4 marks)
2. With the aid of a flow chart, outline the production of enzymes of microorganisms. (4 marks)

**Question Three**

With the aid of a flow chart, discuss all the steps for the production of beer. (8 marks)

**Question Four**

1. Define microbial transformation and give the types of chemical reactions that occur in biotransformation. (3 marks)
2. Discuss the sources of biocatalysts and techniques for biotransformation. (5 marks)

**Question Five**

Describe the physical properties of Chemical fuels. (8 marks)

**SECTION B; (30 MARKS)**

**Question Six**

Explain the various methods used in genetic manipulation of microorganisms for desired characteristics. (15 marks)

**Question Seven**

Describe the process involved in Sewage treatment. (15 marks)

**Question Eight**

Describe microbial production of methane (biogas). (15 marks)