

**UNIVERSITY OF KABIANGA**

**UNIVERSITY EXAMINATIONS**

**2015/2016 ACADEMIC YEAR**

**FOURTH YEAR SECOND SEMESTER EXAMINATION**

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

**COURSE CODE: BIO 417**

**COURSE TITLE: CURRENT TOPICS IN BIOCHEMISTRY**

**DATE: 7TH APRIL, 2016**

**TIME: 9.00 A.M-12.00 NOON**

**INSTRUCTIONS TO CANDIDATES:**

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

**SECTION A; (40 MARKS)**

**Question One**

1. How are nucleic acids separated? (3 marks)
2. How can we visualize DNA? (2 marks)
3. Why are sticky ends important in cloning? (3 marks0

**Question Two**

1. What is cloning? (5 marks)
2. What is the purpose of genetic engineering? (3 marks)

**Question Three**

1. i. Define gene therapy. (1 mark)

ii. Name the two major gene therapy strategies. (2 marks)

1. Explain the two approaches to achieve gene therapy and why is that somatic cell gene therapy is preferred? (5 marks)

**Question Four**

Explain the advantages and disadvantages of biotechnology to agricultural products. (8 marks)

**Question Five**

Describe the role of biotechnology in the chemical synthesis of vaccines. (8 marks)

**SECTION B; (30 MARKS**

**Question Six**

Discuss how Restriction Endonucleases works. (15 marks)

**Question Seven**

Explain polymerase Chain Reaction. (15 marks)

**Question Eight**

Explain how DNA fingerprinting are used in forensic sciences. (15 marks)