

**UNIVERSITY OF KABIANGA**

**UNIVERSITY EXAMINATIONS**

**2015/2016 ACADEMIC YEAR**

**SECOND YEAR SECOND SEMESTER EXAMINATION**

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

**COURSE CODE: BIO 213**

**COURSE TITLE: BASIC BIOCHEMICAL TECHNIQUES**

**DATE: 6TH APRIL, 2016**

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

**INSTRUCTIONS TO CANDIDATES:**

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

**SECTION A; (40 MARKS)**

**QUESTION ONE**

1. Acetic acid has a p*k*a of 4.8. How many ml of 0.1 M acetic acid and 0.1 M sodium acetate are required to prepare 1 liter of 0.1 M buffer with a pH of 5.8? (5 marks)
2. What is the difference between colourimetry and spectrophometry? (3 marks)

**QUESTION TWO**

Briefly describe Iso-electric precipitation as a protein precipitation technique. (8 marks)

**QUESTION THREE**

Distinguish between native and SDS-polyacrylamide Gel Electrophoresis. (8 marks)

**QUESTION FOUR**

Briefly describe fixation, as a technique in tissue preparation. (8 marks)

**QUESTION FIVE**

Briefly discuss in Situ Hybridization, as a detection technique in tissue study. (8 marks)

**SECTION B; (30 MARKS)**

**QUESTION SIX**

Discuss in detail how DNA fragments can be separated and visualized in agarose gel electrophoresis. (15 marks)

**QUESTION SEVEN**

Stating its application, discuss in detail how separation of components can be done by thin layer chromatography. (15 marks)

**QUESTION EIGHT**

Discuss Gel filtration technique and how it can be used to determine the molecular weight of an unknown protein. (15 marks)