

 W1-2-60-1-6

**JOMO KENYATTA UNIVERSITY**

**OF**

**AGRICULTURE AND TECHNOLOGY**

 **UNIVERSITY EXAMINATIONS 2017/2018**

**END OF SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN ANIMAL HEALTH AND PRODUCTION**

**AAP 2107: BIOCHEMISTRY I**

**DATE: JANUARY 2018 TIME: 2 HOURS**

**INSTRUCTIONS: ANSWER ALL QUESTIONS IN SECTION A AND ANY TWO QUESTIONS IN SECTION B**

**SECTION A (30 MARKS)**

1. (a) Briefly discuss lipids as local hormones. [2 marks]

(b) What is the anomeric carbon in a monosaccharide’s structure? [2 marks]

(c) What are enantiomers? [2 marks]

(d) Name any FOUR non-essential amino acids. [4 marks]

1. Discuss the structure of glycogen and its role in bioenergetics of animal tissues. [4 marks]
2. Giving examples, discuss membrane sphingolipids. [6 marks]
3. Discuss the various structural levels of nucleic acids. [10 marks]

**SECTION B (40 MARKS)**

1. (a) Explain the Michaelis-Menten equation and its relevance/application to animal

 health. [10 marks]

(b) Discuss the secondary structure of proteins. [6 marks]

(c) Briefly discuss the roles of proteins in animal cells and tissues. [4 marks]

1. (a) Discuss the concept of pH and pKa [5 marks]

(b) Discuss the roles and applications of pH and pKa in animal health. [15 marks]

1. (a) Non-ruminants require dietary supplementation with essential amino-acids while

 ruminants do not. Explain. [2 marks]

(b) Discuss the physico-chemical properties of proteins. [18 marks]