JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY

SCHOOL OF BIOLOGICAL AND PHYSICAL SCIENCES

UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN BIOLOGICAL SCIENCES

2nd YEAR 2nd SEMESTER 2018/2019 ACADEMIC YEAR

MAIN CAMPUS - REGULAR

COURSE CODE: SBI 3227

COURSE TITLE: BIOCHEMISTRY 1I

EXAM VENUE: LR 1   **STREAM: (BIO)**

DATE: 02/05/2019   **EXAM SESSION: 3.00-5.00PM**

TIME: 2 HOURS

Instructions:

1. **Answer ALL questions in Section A and Any two questions in Section B**

2. **Candidates are advised not to write on question paper**

3. **Candidates must hand in their answer booklets to the invigilator while in the examination room**

SECTION A: (30 MARKS) ANSWER ALL QUESTIONS

1. Identify and describe three types of simple proteins (3 Marks)

2. Describe three disorders of the endocrine system (3 Marks

3. Discuss three forces that maintain the structural integrity of biological membranes (3 Marks)

4. Explain the terms chromoproteins, glycoproteins and lipoproteins (3 Marks)

5. Using a clearly labeled diagram, describe the Fluid Mosaic model of bio-membranes

(3 marks)

6. Outline three major differences between hormones and enzymes (3 Marks)

7. Describe the steps involved in chemical synaptic transmission (3 Marks)

8. Describe three important interactions that are found in a tertiary structure of a protein.

(3 Marks)

9. Discuss three factors that affect enzyme activity (3 Marks)

10. i) Explain what a proenzyme is? (1 Mark)

   ii) Identify two examples of proenzymes and show how they are activated (2 Marks)

SECTION B: ESSAY QUESTIONS (40 MARKS)

11. Describe the four levels of protein structure, giving an example in each case (20 Marks)

12. Discuss the classification of enzymes giving an example in each case (20 Marks)

13. Discuss the general characteristics and classification of vitamins. (20 Marks)

14. (a) using a diagram describe the lipid bilayer and identify the two types proteins of a

biological membrane (6 Marks)

(b) Discuss seven functions of biological membranes (14 Marks)