JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY

SCHOOL OF BIOLOGICAL AND PHYSICAL SCIENCES

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

SECOND YEAR FIRST SEMESTER 2018/2019 ACADEMIC YEAR

MAIN CAMPUS - REGULAR

COURSE CODE:	**SBI 3212**
COURSE TITLE:	**INTRODUCTION TO ANIMAL PHYSIOLOGY**
EXAM VENUE:	**STREAM: (BSC)**
DATE:	**EXAM SESSION:**
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: SHORT ANSWER QUESTIONS (30 MARKS)

1. Distinguish between tissue and system. (3 marks)
2. Give three characteristics of smooth muscles. (3 marks)
3. Describe contraction of the heart muscle. (3 marks)
4. Outline three mechanisms instituted by temperature control systems in mammalian body when body temperature becomes too low. . (3marks)
5. Describe the composition of plasma. . (3 marks)
6. Describe process of gaseous exchange between alveoli and blood. (3 marks)
7. Define the following:
    a. Tidal Volume (1 mark)
    b. Respiratory Frequency (1 mark)
    c. Expiratory Reserve Volume (1 mark)

8. Give the functions of vitamins E, K and B complex. (3 marks)
9. Outline the function(s) of the following blood cells:
    a. Neutrophils (1 mark)
    b. Lymphocytes (1 mark)
    c. Eosinophils (1 mark)
10. Describe role of lungs in acid-base balance. (3 marks)

SECTION B: ESSAY QUESTIONS (40 MARKS)

11.
    a. Demonstrate an understanding of the roles of T-tubules and sarcoplasmic reticuli in muscle contraction . (10 marks)
    b. The interaction between myosin, ATP, actin and calcium is responsible for muscle contraction. Describe fully the process involved in muscle contraction. (10 marks)
12. Analyze fermentative digestion of fiber in ruminant stomach. (20 marks)
13. Evaluate, with examples, the concept of negative feedback mechanisms in mammals. (20 marks)
14.
    a. Describe the formation, flow and composition of lymph. (10 marks)
    b. Outline the main functions of lymphatic system. (10 marks)