



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY

SCHOOL OF BIOLOGICAL AND PHYSICAL SCIENCES

**UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE
(BIOLOGICAL SCIENCES)**

2ND YEAR 1ST SEMESTER 2016/2017 ACADEMIC YEAR

MAIN CAMPUS - REGULAR

COURSE CODE: SBI 3212

COURSE TITLE: INTRODUCTION TO ANIMAL PHYSIOLOGY

EXAM VENUE: BIO LAB STREAM: (BIO)

DATE: 25/04/16

EXAM SESSION: 2.00 – 4.00 PM

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**
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SECTION A: ANSWER ALL QUESTIONS (30 MARKS)

1. Define the following terms:
 - a. Physiology. (1 mark)
 - b. Homeostasis. (1 mark)
 - c. Thermoregulation. (1 mark)
2. Give three types of muscles found in mammals. (3 marks)
3. Outline three functions of skeletal system. (3 marks)
4. Briefly describe four ways by which animals exchange heat with the surrounding environment. (3 marks)
5. Differentiate between plasma and serum. (3 marks)
6. Briefly describe the process of gaseous exchange between alveoli and blood. (3 marks)
7. Give any three functions of minerals in the animal's body. (3 marks)
8. Briefly describe role of lungs in acid-base balance. (3 marks)
9. Define the following terms:
 - a. Tidal Volume (1 mark)
 - b. Respiratory frequency (1 mark)
 - c. Expiratory reserve volume (1 mark)
10. Give the function of the following blood cells:
 - a. Basophils. (1 mark)
 - b. Lymphocytes. (1 mark)
 - c. Eosinophils. (1 mark)

SECTION B: ANSWER ANY TWO QUESTIONS (40 MARKS)

11.
 - a. Describe the roles of T-tubules and sarcoplasmic reticuli in muscle contraction in animals. (10 marks)
 - b. The interaction between myosin, ATP, actin and calcium is responsible for muscle contraction. Describe in details the processes involved in muscle contraction. (10 marks)
12. Describe the functional organization of the mammalian digestive system. (20 marks)
13.
 - a. Describe the formation, flow and composition of lymph fluid. (10 marks)
 - b. Outline the main functions of lymphatic system. (10 marks)
14. Describe in details the concept of negative feedback mechanism in mammals. Give examples. (20 marks)