

LAIKIPIA



UNIVERSITY

## UNIVERSITY EXAMINATIONS

**SECOND SEMESTER 2023/2024 ACADEMIC YEAR**

**SECOND YEAR EXAMINATION FOR THE DEGREE OF  
BACHELOR OF SCIENCE IN AGRICULTURAL  
EDUCATION AND EXTENSION (AGED)**

**ZOOL 223: VERTEBRATE ANATOMY AND PHYSIOLOGY**

***STREAM: R***

***TIME: 2 HRS***

***DAY: TUESDAY [8.30A.M – 10.30A.M]      DATE: 16/04/2024***

**THIS QUESTION PAPER CONSISTS OF TWO (2) PAGES**

**PLEASE DO NOT OPEN UNTIL THE INVIGILATOR SAYS SO.**



**Instructions**

Answer all questions in Section A and any **TWO** in Section B  
 Section A is **40 marks** and Section B is **30 marks**

**SECTION A; ATTEMPT ALL QUESTIONS (40 MARKS)****QUESTION ONE**

State any **four** differences between Gnathostomata and Agnatha **(4 Marks)**

**QUESTION TWO**

Describe any **six** levels of structural organization in vertebrates. **(6 Marks)**

**QUESTION THREE**

State any **six** characteristic features of skeletal muscles. **(6 Marks)**

**QUESTION FOUR**

- a) Define the term adaptation  
 b) Describe birds/aves adaptation to their environment. **(7 Marks)**

**QUESTION FIVE**

Outline **any four** roles of cardiovascular system in vertebrate **(4 Marks)**

**QUESTION SIX**

State **in order the five** vertebral column bones **(5 Marks)**

**QUESTION SEVEN**

Describe nerve impulse propagation across the synapse **(8 Marks)**

**SECTION B; ASWER ANY TWO QUESTIONS. (30Marks)****QUESTION EIGHT**

Discuss **any five** clinical disorders, their symptoms and tissues involved that are associated with hormone deficiency and excess. **(15marks)**

**QUESTION NINE**

- a) State **five** anatomical features of phylum vertebrata **(5 Marks)**  
 b) Explain the evolutionary adaptation of **any five named** classes of vertebrates **(10 Marks)**

**QUESTION TEN**

Draw the structure of nephron and explain mechanism of urine formation and excretion **(15 Marks)**