



MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF PURE AND APPLIED SCIENCES

DEPARTMENT OF BIOLOGICAL SCIENCES

DECEMBER SESSION EXAMINATION FOR

BACHELOR OF EDUCATION SCIENCE

SZL 200: VERTEBRATE ZOOLOGY

DATE: SCHOOL BASED

TIME : 2 HOURS

INSTRUCTIONS

1. Answer Question 1 (compulsory) and **any two** questions in Section B.
2. Use clean well labelled diagrams wherever appropriate.

SECTION A (COMPULSORY)

QUESTION ONE (30 MARKS)

- a) Outline the hallmarks of Chordates (3 marks)
- b) Distinguish between Protochordates and Craniata (3 marks)
- c) Explain the Urochordate theory (3 marks)
- d) Citing examples discuss the characteristics of super-classes Agnatha (3 marks)
- e) Discuss the economic significance of Chondrichthyes (3 marks)
- f) Differentiate between the following fins: (3 marks)
 - i) Placoid
 - ii) Ctenoid
 - iii) Cycloid
- g) Write brief notes on the following: (3 marks)
 - i) Order Apoda
 - ii) Order Anura
 - iii) Urodela
- h) How amphibians are adapted to terrestrial life. (3 marks)
- i) There are no reptiles in the Antarctica. Justify the statement (3 marks)

- j) Amniotes have a higher reproductive ability than other vertebrates. Explain (3 marks)

SECTION B: ANSWER ANY OTHER TWO QUESTIONS (40 marks)

QUESTION TWO (20 MARKS)

- a) Illustrate how organisms in the bathypelagic zone overcome their challenges. (10 marks)
- b) Chordates are unique from other vertebrates. Discuss (10 marks)

QUESTION THREE (20 MARKS)

- a) Embracing farming of members of class Osteichthyes can turn around the lives of many across the world. Discuss (10 marks)
- b) An organism from a tropical lake was found to have long fins, a 3 lobed tail, more cartilage on the skeleton than bone and a reduced airbladder. Identify the subclass to which the organism belongs and how it moves, breaths and feeds in its environment. (10 marks)

QUESTION FOUR (20 MARKS)

- a) Discuss the vertebrate modes of feeding (10 marks)
- b) How is the vertebrate skin adapted to its functions? (10 marks)

QUESTION FIVE (20 MARKS)

How have recent fossil findings changed the understanding of how the first tetrapods evolved to adapt to life on land?