

UNIVERSITY OF ESWATINI  
FACULTY OF SCIENCE AND ENGINEERING  
DEPARTMENT OF BIOLOGICAL SCIENCES  
MAIN EXAMINATION 2020/2021 ACADEMIC YEAR

**TITLE OF PAPER:** MAMMALOLOGY

**COURSE CODE:** BIO 454

**TIME ALLOWED:** THREE HOURS

**INSTRUCTIONS:**

1. ANSWER ALL QUESTIONS IN SECTION A (COMPULSORY)
2. ANSWER ANY THREE QUESTIONS IN SECTION B
3. START EACH QUESTION ON A NEW PAGE
4. ILLUSTRATE YOUR ANSWER WITH LARGE AND CLEARLY LABELLED DIAGRAMS WHERE APPROPRIATE

**SPECIAL REQUIREMENTS:** NONE

THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION HAS BEEN GRANTED BY THE  
INVIGILATORS

**SECTION A**

**QUESTION 1.**

Write only **SINGLE** words to answer the following questions.

- A. Do the Macroscelidea have a diastema?
- B. In civets, is the M<sup>1</sup> a carnassial tooth?
- C. Are Primates included in the group "Glires"?
- D. Do horses lack upper incisors?
- E. Were the therapsids endothermic?
- F. Do hindgut fermenters have a large caecum?
- G. Do elephants have canines?
- H. Do dogs have a well developed sagittal crest?
- I. Did mammals evolve from Pelycosaurs?
- J. Do mammals have the largest brain of all animals on the planet?
- K. Do hindgut fermenters have a 4 chambered stomach?
- L. Do the canines of rodents grow continuously?
- M. Does the mammalian skeleton have metatarsals?
- N. Do whales have a pelvic girdle?

**(14 Marks)**

**SECTION B**

**QUESTION 1.**

Using as many examples of species and studies that have been conducted in Eswatini, write a discussion on why rodents are good models for exploring the impacts of agricultural monocultures on ecosystems.

**(25 Marks)**

**QUESTION 2.**

Draw a fully labelled phylogeny for Mammals (class Mammalia). Make sure to include all the relevant orders and families.

**(25 Marks)**

**QUESTION 3.**

Write a discussion on Mammalian teeth as an example of adaptation to diet. Make sure to describe in detail the various types of dentition in mammals and how these are adapted for the specific mammalian diets. Include diagrams to illustrate your answer.

**(25 Marks)**

**QUESTION 4.**

Draw a fully labelled phylogeny for the order Cetartiodactyla. Make sure to include all the relevant families.

**(25 Marks)**

**END OF EXAMINATION PAPER**