

UNIVERSITY OF ESWATINI

RESIT (SUPPLEMENTARY) EXAMINATION PAPER 2018/2019

- TITLE OF PAPER:** VERTEBRATE ZOOLOGY
- COURSE CODE:** BIO242 (B302)
- TIME ALLOWED:** THREE (3) HOURS
- INSTRUCTIONS:**
1. SECTION A IS COMPULSORY. ANSWER ALL QUESTIONS IN THIS SECTION.
  2. ANSWER ANY ONE QUESTION FROM SECTION B.
  3. ILLUSTRATE YOUR ANSWERS WITH LARGE AND CLEARLY LABELED DIAGRAMS WHERE APPROPRIATE.

**SPECIAL REQUIREMENTS:**

NONE

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

**SECTION A**

(Answer all the questions in this section)

**Question 1**

Single word answers (if more than one word appears then that answer will immediately be given a “zero”).

- A. Do toads kill their prey using venom?
- B. Does the efferent branchial arteries take deoxygenated blood to the gills?
- C. Do teleost fishes have teeth on the vomer?
- D. What vertebrate class does *Tiktaalik* belong to?
- E. Did *Archaeopteryx* have feathers?
- F. What is the main nitrogenous waste product of sharks?
- G. Does the stingray have any bone in its skeleton?
- H. Are monotremes ovoviviparous?
- I. What does the largest bird in the world (ostrich) feed on?
- J. Do marsupials have a quadrate bone in the upper jaw?
- K. Do Primates have a diastema?
- L. Do caecilians have a spiracle?
- M. Does a toad have a tympanum?
- N. What part of the brain is responsible for olfaction?
- O. Is the marine iguana insectivorous?

[15 marks]

**Question 2**

These two questions (2A and 2B) should be answered by way of sketches or diagrams, with a minimum of writing (except for labels).

**2A.** Draw and fully label a diagram of the skull of a hare. Make sure to include teeth, and specifically identify (on the diagram) those features typical of this group.

[20 marks]

**2B.** Draw a fully labeled diagram of the digestive of an impala.

[20 marks]

**Question 3**

These questions should be answered by, at most, a short paragraph (i.e. short answers).  
Five (5) marks per question. There is no need to present any diagrams.

- 3A.** Explain how a yellowfish respire (gaseous exchange).
- 3B.** By way of an example, describe the polygynous mating system of birds.
- 3C.** Describe the functioning of the organ of Jacobsen in reptiles.
- 3D.** Explain by what morphological adaptation, swifts have become manoeuvrable fliers.

**[20 marks]**

**SECTION B**

(Answer any one out of the two questions in this section)

**Question 4**

Discuss and compare the circulatory systems of Reptilia and Aves.

[25 marks]

**Question 5**

Describe in detail the brain and sensory organs of reptiles, and how they are used by the animals to perceive their environment. Ensure that you cover the various groups of extant reptiles in your answer.

[25 marks]