

UNIVERSITY OF SWAZILAND

RESIT/SUPPLEMENTARY EXAMINATION PAPER 2017/2018

- 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 house snakes kill their prey using venom?
- B. Does the ventral aorta take oxygenated blood to the gills?
- C. Do teleost fishes have teeth on the dentary?
- D. What vertebrate class does *Ichthyostega* belong to?
- E. Did *Archaeopteryx* have teeth?
- F. What is the main nitrogenous waste product of mammals?
- G. Does the salamander have bone in its skeleton?
- H. Are sea snakes (Hydrophiinae) ovoviviparous?
- I. What does the largest fish in the world (whale shark) feed on?
- J. Do the Monotremata have an articular bone in the lower jaw?
- K. What is the gap between the incisors and molars (present in rodents and hares) called?
- L. Do batoideans use the spiracle for respiration?
- M. How many middle ear ossicles does a toad have?
- N. What part of the brain is responsible for coordination of complex muscular activity?
- O. Is the marine iguana vegetarian?

[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 carnivorous mammal. Make sure to include teeth, and specifically identify (on the diagram) those features typical of carnivores.

[20 marks]

2B. Draw a fully labeled diagram of the digestive, urinary and reproductive systems of a typical bird.

[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. Describe the movement (and condition) of blood through a mammalian heart.
- 3B. Describe the polyandrous mating system of birds and give an example of such a species.
- 3C. Describe the evolutionary development of jaws in vertebrates.
- 3D. Describe the way vultures gain altitude.

[20 marks]

SECTION B

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

Question 4

Discuss and compare the respiratory systems of Osteichthyes, Amphibia, Reptilia, Aves and Mammalia.

[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]