

UNIVERSITY OF SWAZILAND

MAIN EXAMINATION PAPER 2011/2012

TITLE OF PAPER: VERTEBRATE ZOOLOGY

COURSE CODE: B302

TIME ALLOWED: THREE (3) HOURS

- INSTRUCTIONS:**
1. ANSWER ANY FOUR QUESTIONS.
 2. EACH QUESTION CARRIES TWENTY FIVE (25) MARKS.
 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**

ANSWER ANY FOUR (4) OUT OF THE SIX (6) QUESTIONS

QUESTION 1

What three features evolved in the ancestral jawless vertebrate form giving rise to present day gnathostomes? Describe how these arose and the advantages they give to the organisms where found.

[25 marks]

QUESTION 2

Using named examples from each taxon, discuss why the following are of conservation concern:

- a. Chondrichthyes (8)
- b. Osteichthyes (7)
- c. Amphibia (10)

[25 marks]

QUESTION 3

What are temporal fossae and what are their functions? Using illustrations, give a comprehensive account of the anapsid, parapsid, synapsid and diapsid skulls. Give examples of organisms that exhibit these skulls.

[25 marks]

QUESTION 4

- a. What features characterise the vertebrates? (10)
- b. What changes were critical for the transition of vertebrates from aquatic to terrestrial habitats? (15)

[25 marks]

QUESTION 5

Discuss in detail how the teeth of mammals are adapted to their diets.

[25 marks]

QUESTION 6

Write explanatory notes on the following. State the appropriate taxon associated with the term. (5 marks each)

- a. Heterodonty
- b. Swim bladder
- c. Organ of Jacobsen
- d. Ammocoete larva
- e. Cranial kinesis

[25 marks]