

UNIVERSITY OF SWAZILAND

MAIN EXAMINATION PAPER 2016/2017

TITLE OF PAPER: VERTEBRATE ZOOLOGY

COURSE CODE: BIO242/B302

TIME ALLOWED: THREE (3) HOURS

- INSTRUCTIONS:**
1. ALL QUESTIONS IN SECTION A ARE COMPULSORY. ANSWER ANY ONE QUESTION FROM SECTION B.
 2. 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

47

(Answer all questions in this section)

QUESTION 1*One-word answers (DO NOT write sentences or paragraphs)*

- 1) Are any Lepospondyli extant (still living today)?
- 2) During which geological period did the ostracoderms first appear in the fossil record?
- 3) Do the Myxinoidea have a venomous sting in the tail?
- 4) Do the Petromyzontida have a columella auris?
- 5) Does the ventral aorta take oxygenated blood to the gills?
- 6) Do any species of Sarcopterygii have a placenta?
- 7) Is the olfactory lobe of a typical shark well developed?
- 8) Do anurans have teeth on the dentary?
- 9) In the Osteichthyes, is the pelvic girdle attached to the cranium?
- 10) Is Eusthenopteron an early amphibian?
- 11) Is the astragalus a carpal bone?
- 12) Do the Holocephali have a hyostylic jaw suspension?
- 13) How many cervical vertebrae are present in the Anura?
- 14) Do the Apoda have pentadactyl limbs?
- 15) Do the Chondrostei have any bone in their skeleton?
- 16) How many extant orders are there in the class Agnatha?
- 17) During which geological period did the Chondrichthyes first appear in the fossil record?
- 18) Do snakes have a patella?
- 19) During which period did the first birds appear in the fossil record?
- 20) Name one African snake family in which no members have venom.
- 21) Do all Aves lay eggs?
- 22) Does *Sphenodon* have a diaphragm?
- 23) Does the crocodile have a copulatory organ?
- 24) Do pythons kill their prey using venom?
- 25) Do the Therapsida have an articular bone in the lower jaw?
- 26) Is the sex of offspring in chelonians determined by incubation temperature?
- 27) Did *Archaeopteryx* have a long tail supported by caudal vertebrae?
- 28) Do some reptiles lay eggs in the nest of other species?
- 29) Can albatrosses survive by drinking sea water?
- 30) Name the 3 middle ear ossicles in mammals.
- 31) Do herbivorous mammals have a crop?
- 32) What can the sensory pits of pit vipers "feel"?
- 33) Do vultures make use of thermals for flight?
- 34) Does the gizzard digest the food mechanically?
- 35) Do rodents have canines?

[1 mark each = 35 marks]

QUESTION 2

48

- 1) Sketch and fully label a diagram of the skull of a carnivorous mammal.
- 2) Illustrate by means of a diagram the locomotion of an elasmobranch.
- 3) Sketch and fully label the circulatory system of an amphibian.
- 4) By way of a sketch, illustrate how cranial kinesis results in the erection of fangs in vipers.

[10 marks each = 40 marks]

SECTION B

(Answer one question from this section)

07

QUESTION 3

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

[25 marks]

QUESTION 4

Describe in detail the brain and sensory organs of reptiles. Ensure that you cover the various groups of extant reptiles in your answer.

[25 marks]