



FACULTY OF SCIENCE

DEPARTMENT OF ZOOLOGY

MODULE ZOO 1B10

ANIMAL DIVERSITY

CAMPUS APK

NOVEMBER 2016 EXAMINATION

DATE 25 NOVEMBER 2016

SESSION 08:30

ASSESSOR(S)

DR L MOKAE

DR A. NEL

INTERNAL MODERATOR

DR F DURAND

DURATION: 3HOURS

MARKS: 130

NUMBER OF PAGES: 3 PAGES

INSTRUCTIONS:

- 1. ANSWER ALL THE QUESTIONS**
- 2. KEEP PARTS OF THE SAME QUESTION TOGETHER (in one page)**
- 3. HAND IN BOTH EXAM PAPER AND ANSWER SHEET**

QUESTION 1**[5]**

Define the following terms:

- 1.1 Typhlosole
- 1.2 Ctenidia
- 1.3 Eutely
- 1.4 Saprophagous
- 1.5 Cladists

QUESTION 2**[15]**

Use labelled illustrations to discuss the embryological development of the **zygote to the gastrula** stage. Label all the developmental stages and the changes occurring in each stage. Use specific colours to indicate the different germ layers.

QUESTION 3**[15]**

- 3.1 List five (5) unique features that occur due to the sperm entry in the fertilisation process. (5)
- 3.2 Compare and discuss four (4) differences in protostome and deuterostome organisms. (4)
- 3.3 List four (4) advantages of coelom development. (4)
- 3.4 List two (2) contributions made by Carl von Linne towards the taxonomy subdiscipline. (2)

QUESTION 4**[15]**

- 4.1 Draw a labelled cross section of the **flatworm** and include all structures seen in this cross section. (11)
- 4.2 Write down the classification (phylum, class, order and genus) to which the flatworm belongs and indicate why you placed the flatworm in the different taxa. (8 x ½ = 4)

QUESTION 5**[15]**

The following questions are about the nematodes:

- 5.1 Draw a cross section of the nematode.
- 5.2 Number all structures visible in the cross section (1 to n).
- 5.3 Below the above drawing, draw a four column table write down the **numbers in (5.2), structure, derivative and function** of each corresponding structure in the cross section.

QUESTION 6**[7]**

Discuss, using labelled diagrams, the possible origin of the **blood vascular system** in Eucoelomates.

QUESTION 7**[20 x ½ ==10]**

7.1 Onychophorans share many characteristics (structures) with both the Annelids and Arthropods and have therefore been regarded as the evolutionary link between the two phyla.

Discuss this statement by means of a labelled illustration of a cross-section through Onychophoran. Indicate all structures visible in cross section and those not seen in the cross section.

QUESTION 8**[5]**

8.1 The presence of certain structures/characteristics among certain Arthropoda undoubtedly contributes to their success as terrestrial animals." List and discuss five (5) features in terrestrial arthropods that have enhanced their success in terrestrial environment.

QUESTION 9

[13]

- 9.1 The presence of a water vascular system is unique to Echinoderms. Describe, with labelled diagrams the water vascular system of the asteroids. (9)
- 9.2 List four (4) unique characteristics of members of Phylum Chordata. (4)

TOTAL 100