

UNIVERSITY OF SWAZILAND

MAIN EXAMINATION PAPER 2008

TITLE OF PAPER : INVERTEBRATE ZOOLOGY

COURSE CODE : B204

TIME ALLOWED : THREE HOURS

INSTRUCTIONS :

1. THIS PAPER HAS TWO SECTIONS, A AND B
2. SECTION A IS COMPULSORY
3. ANSWER ANY THREE (3) QUESTIONS FROM SECTION B
4. WHEREVER POSSIBLE ILLUSTRATE YOUR ANSWERS WITH LARGE CLEARLY LABELLED DIAGRAMS

SPECIAL REQUIREMENTS: NONE

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

SECTION A (Compulsory)

Construct a phylogenetic tree using the following Metazoan phyla: Brachiopoda, Cnidaria, Onychophora, Chordata, Platyhelminthes, Tardigrada, Echinodermata, Porifera, Annelida, Phoronida, Arthropoda, Bryozoa, Hemichordata Mollusca, Rotifera, Nematoda. For each phylum, list the common name or one representative taxon. The following groupings should be indicated

Eumetazoa,
Radiata,
Bilateria,
Protostomia,
Ecdysozoa,
Lophotrochozoa and
Deuterostomia

Cite the distinguishing character for each main "branch."

[Total marks = 40]

SECTION B

Answer any **three (3)** questions

QUESTION 2

- a. What is the phylum and genus of the organism that causes toxoplasmosis? Describe, in detail, the parasite's lifecycle, the impact it has on its hosts as well as methods of prevention and control. (15)
- b. Illustrate the various routes of parasite transmission. (10)

[Total marks = 25]

QUESTION 3

- a. List the stages that characterize the ontogeny of most animal phyla. Briefly define each stage. (10)
- b. Aquatic habitats are split into three basic categories: marine, intertidal zone and freshwater. Briefly distinguish between these habitats, explaining the following:
- which habitat is the most favourable for invertebrates and why? (4)
 - what are disadvantages of the less favourable habitats to invertebrates? (5)
 - Cite two modes of adaptive strategies invertebrates have for each habitat. (6)

[Total = 25 marks]

QUESTION 4

Draw a diagram of a longitudinal section through a simple asconoid sponge, clearly indicating the distinct layers of the body wall. Indicate the direction water flow through the sponge. In your diagram, describe and show 5 different cell types.

[Total = 25 marks]

QUESTION 5

For each of the following phyla, describe their basic body plan and how they have solved the animal problems of feeding, reproduction, excretion, support and movement:

- i. Cnidaria
- ii. Turbellaria
- iii. Gastropoda

[Total = 25 marks]

QUESTION 6

Compare and contrast the body plan and lifestyle of the Hemichordata and Lophophorata.

[Total = 25 marks]