UNIVERSITY OF SWAZILAND

MAIN EXAMINATION PAPER 2006

TITLE OF PAPER : **INVERTEBRATE ZOOLOGY**

COURSE CODE : **B204**

TIME ALLOWED : **THREE HOURS**

INSTRUCTIONS :
1. **THIS PAPER HAS SIX (6) QUESTIONS**
2. **ANSWER ANY FOUR (4) QUESTIONS**
3. **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

Question 1

Differentiate between the following:

i. Monophyletic and Paraphyletic
ii. Protonephridia and Metanephridia
iii. Ancestral and Derived feature
iv. Schizogony and Binary fission
v. Osmoregulation and osmoconforming

[Total marks = 25]

Question 2

a. Various patterns emerge as one progresses up the evolutionary tree. Using the words provided, fill in the table below:

Gastrulation, Neoteny, Appendages, Haemocoel, Body cavities, Lophophore, Mesodermal exoskeleton, Dorsal tubular nerve chord, Segmentation, Cephalisation.

Phylum/subphylum	**Evolutionary character**
Cnidaria	
Platyhelminthes	
Nematoda	
Mollusca	
Annelida	
Arthropoda	
Echinodermata	
Chordata	
Lophophorates	
Urochordata	

(10)

b. Discuss the importance of gastrulation and how invertebrates gastrulate. (15)

[Total marks = 25]

Question 3

Using the *Taenia* sp life-cycle, discuss each of the following with regard to a parasitic lifestyle:

i. High fecundity
ii. Free-living and distributive larval stages
iii. Adaptation to host's ecology
iv. Concomittant immunity

[Total = 25 marks]

Question 4

a. Both the classes Hydrozoa and Scyphozoa have alternation of generations. Explain what this means and using an example from each class, illustrate the life cycle of a representative to demonstrate this. (15 marks)
b. Briefly discuss distinctive characteristics which characterise arthropods. (10 marks)

[Total = 25 marks]

Question 5

Using named examples describe the following and briefly discuss their evolutionary significance:

i. Trochophore larvae (10)
ii. Paedomorphosis (10)
iii. Concomittant immunity (5)

[Total = 25 marks]

Question 6

Discuss the economic importance of the following groups:

i. Cnidaria (10)
ii. Diptera (10)
iii. Mollusca (5)

[Total = 25 marks]