

**UNIVERSITY OF SWAZILAND**

**MAIN EXAMINATION PAPER 2014**

**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)**

**QUESTION 1**

Invertebrates are a diverse group of animals which have significant impact on mankind and environment. Using named examples from the diversity of invertebrates studied in this course, enumerate their importance with regard to the following (copy the table below and answer in tabular form as shown):

	<i>Phylum</i>	<i>Example</i>
<i>Applied value</i> 1. Research (genetics) 2. Research (regeneration)		
<i>Agriculture</i> 3. Crop pollination 4. Major competitors for food 5. Pest control		
<i>Ecological importance</i> 6. Invertebrates are food 7. Decomposers/reducers 8. Biological indicators		
<i>Medical importance</i> 9. Cause animal, human or plant diseases. 10. Transmit animal, human or plant diseases 11. Medicine production, e.g. anti-tumour agents, anti-coagulants, etc. 12. Bioassays for disease		
<i>New material for human needs</i> 13. Produce useful products (not medicinal)		

[Total = 25 marks]

**SECTION B**

**QUESTION 2**

Identify the diseases caused and discuss in detail the economic and social problems caused by each of the following parasites:

- i. *Babesia bovis* (5)
- ii. *Ancylostoma duodenale* (6)
- iii. *Plasmodium falciparum* (8)
- iv. *Schistosoma mansoni* (6)

[Total = 25 marks]

QUESTION 3

a. Using illustrations, discuss in detail the embryonic development of a benthic protostome which produces isolecithal eggs. (15)

b. Briefly discuss the adaptive advantage of holometabolous development. (10)

[Total = 25 marks]

QUESTION 4

a. The phylum Porifera has varying body forms. Elaborate on these and describe the flow of water within each type using any of the following: excurrent canal; ostium; choanocyte chamber; osculum/a choanocyte chambers; incurrent canal; prosopyle; apopyle. (15)

b. Elaborate on the ecological importance of coral reefs. (10)

[Total = 25 marks]

QUESTION 5

a. Discuss the morphological changes in the molluscan body plan which transformed the Coleoidea into fast swimming predators. (13)

b. Define adaptive radiation and discuss the term with regard to the Bivalves. (12)

[Total = 25 marks]

QUESTION 6

Write short notes on two of the following:

- i. Rotifera
- ii. Onychophora
- iii. Tardigrada
- iv. Lophophorate phyla

[Total = 25 marks]