

UNIVERSITY OF SWAZILAND

MAIN EXAMINATION PAPER 2016

TITLE OF PAPER : INVERTEBRATE ZOOLOGY

COURSE CODE : B204/BIO251

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**

Illustrate the life cycle of the two parasites below. For each, identify the diseases caused and control measures used:

- i. *Plasmodium falciparum* (13)
- ii. *Schistosoma mansoni* (12)

[Total = 25 marks]

QUESTION 3

a. What is a larva? Using the various phyla studied, discuss the purpose of having a larval stage. (10)

b. Using named examples and illustrations, distinguish the following modes of reproduction:

- i. Fragmentation (3)
- ii. Schizogony (4)
- iii. Conjugation (8)

[Total = 25 marks]

QUESTION 4

a. Using named examples, briefly define and explain the adaptive advantage of the following:

- i. Dorsoventral flattening (5)
- ii. Hermaphroditism (5)
- iii. Multiple reproductive cycles in parasites (5)

b. Offspring are often not identical to their parents. Explain what causes variation between parents and their offspring. (10)

[Total = 25 marks]

QUESTION 5

Write short notes on *two* of the following:

- i. Water vascular system
- ii. Body modifications in Bivalvia
- iii. Invertebrate excretory organs
- iv. Gastrulation

[Total = 25 marks]

QUESTION 6

Elaborate on the ecological importance of the following

- i. Coral reefs. (10)
- ii. Oligochaeta (10)
- iii. Mollusca (5)

[Total = 25 marks]