UNIVERSITY OF SWAZILAND

RESIT EXAMINATION PAPER 2019/20

TITLE OF PAPER : INVERTEBRATE ZOOLOGY

COURSE CODE : BIO251

TIME ALLOWED : THREE HOURS

INSTRUCTIONS :
1. THIS PAPER HAS TWO SECTIONS, A AND B
2. SECTION A IS COMPULSORY
3. ANSWER ANY TWO (2) 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):

	Phylum	*Example*
Applied value 1. Research (genetics) 2. Research (regeneration) 3. Research (evolution)		
Agriculture 4. Crop pollination 5. Major competitors for food 6. Pest control		
Ecological importance 7. Invertebrates are food 8. Decomposers/reducers 9. Soil aeration 10. Biological indicators		
Medical importance 11. Cause animal, human or plant diseases. 12. Transmit animal, human or plant diseases 13. Medicine production, e.g. anti-tumour agents, anti-coagulants, etc. 14. Bioassays for disease		
New material for human needs 15. Produce useful products (not medicinal)		

[Total = 30 marks]

Question 2

For each of the structures/characteristics listed below, identify a Phylum where observed and their function.

Structure	Phylum	Function
i. radula		
ii. radiole		
iii. operculum		

Structure		Phylum	Function
iv.	lophophore		
v.	chaetae/setae		
vi.	chelicerae		
vii.	Malpighian tubules		
viii.	Corona		
ix.	Cuverian tubules		
x.	Pharyngeal basket		

[Total = 20 marks]

SECTION B

Question 3

a. Using sponges as an example, define bioerosion and briefly discuss the advantages and disadvantages of this process within the marine ecosystem. (10)

b. Briefly discuss the various types of excretory organs observed in invertebrates. (15)

[Total = 25 marks]

Question 4

Using named examples, write short notes on *two* the following:
   i)   Paedomorphosis
   ii)   Polymorphism
   iii)   Evisceration

[Total = 25 marks]

Question 5

a. Draw a table similar to the one below in your answer sheet and fill it in.   (8)

Characteristic	Protostomes	Deuterostomes
i. Cleavage pattern		
ii. Fate of blastopore		
iii. Fate of blastomeres		
iv. Prototype larvae		

b. Briefly discuss factors which have limited the evolution of Cephalopods. (10)

c. Platyhelminthes are considered to be primitive organisms. Briefly explain why this is so. (7)

[Total = 25 marks]

Question 6

One of the primary concerns within marine ecosystem is coral bleaching. Explain how this arises and discuss why this is of ecological and economic concern.

[Total = 25 marks]