

UNIVERSITY OF SWAZILAND

MAIN EXAMINATION PAPER 2020

TITLE OF PAPER : PARASITOLOGY

COURSE CODE : BIO446

TIME ALLOWED : THREE HOURS

INSTRUCTIONS :

1. THIS PAPER HAS TWO SECTIONS, A AND B
2. SECTION A IS COMPULSORY (ANSWER ALL QUESTIONS IN THIS SECTION)
3. ANSWER TWO (2) QUESTION 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

Climatic conditions are one of the primary determinants of parasite distribution. Using rainfall and temperature, discuss how climate change is likely to affect parasite distribution with regard to the following: Geographic distribution, survivorship, reproduction and transmission.

[Total = 25 marks]

QUESTION 2

Arthropods are important vectors. Copy and fill in the table below by placing the vector with the parasite:

Common name of vector	Scientific name of vector	Parasite transmitted by vector	Disease caused
Tsetse fly	<i>Glossina</i> sp.		
		<i>Plasmodium</i> spp.	
Head louse	<i>Pediculus humanus</i>		
			River blindness
	<i>Phlebotomus</i> spp.		
		<i>Leishmania</i> spp.	
		<i>Babesia</i> spp.	
		<i>Yersinia pestis</i>	
		<i>Dracunculus medinensis</i>	

[Total = 25 marks]

SECTION B

Answer only TWO (2) questions from this section.

QUESTION 3

a. Using the life cycle of *Schistoma mansoni*, discuss each of the following with regard to a parasitic lifestyle:

- i. High fecundity (5)
- ii. Free-living and distributive larvae (5)
- iii. Adapting to host's ecology (5)

b. Explain why nematode infections are said to be chronic. Using named examples of life-cycles, discuss their medical importance. (15)

[Total = 25 marks]

QUESTION 4

Differentiate between adaptive and innate immunity.

[Total marks = 25]

QUESTION 5

Using named parasites, discuss the following:

- i. Attachment devices (9)
- ii. Host manipulation (7)
- iii. Concomitant immunity (9)

[Total = 25 marks]

QUESTION 6

Invertebrate parasites face a number of challenges at various stages of their life cycles. Explain these and examine solutions used by parasites to overcome these challenges.

[Total = 25 marks]