

UNIVERSITY OF SWAZILAND

MAIN EXAMINATION PAPER 2018

TITLE OF PAPER : PARASITOLOGY

COURSE CODE : BIO302

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 NECESSARY, 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)

a. Match the term on the left with the most appropriate term on the right. (20 marks)

Statement (left)	Term (right)
1. Host's inability to eliminate parasite before establishment	A. transovarian transmission
2. One factor determining the pathogenicity of <i>Entamoeba histolytica</i> depends on:	B. definitive host
3. Where do the sporozoites of <i>Plasmodium</i> sp. go after being transferred into the blood stream of the victim?	C. zoonosis
4. Exhibit eutely	D. facultative parasite
5. What specialized organelle is responsible for penetrating host cells and tissues in the Apicomplexa?	E. myiasis
6. What do sporozoites become after multiple divisions in the liver?	F. factitious host
7. Infective form develops in hind gut of vector	G. miracidium
8. Most common specimen for diagnosis of intestinal parasite infection	H. susceptibility
9. Where does the fertilization of gametocytes of <i>Plasmodium</i> sp. take place?	I. hookworm larvae
10. Parasite which can survive without host in a free living state	J. Nematoda
11. Parasite which cannot survive without a host	K. cercaria
12. Host where parasite undergoes sexual reproduction	L. obligate parasite
13. Host not normally invaded in natural environment, only in artificial environments	M. merozoites
14. Diseases/infections naturally transferrable between vertebrate animals and man	N. faeces
15. Transmission from mother to offspring in <i>Babesia</i> sp.	O. liver
16. Infestation of tissue of vertebrate animals by Dipteran larvae	P. fleas
17. Free-living dispersive larvae in <i>Schistosoma mansoni</i>	Q. parasite virulence
18. Infective larval stage in <i>Schistosoma mansoni</i>	R. stercorarian
19. Causes ground itch at site of penetration	S. mosquito gut
20. Transmits bacterium causing bubonic plague	T. apical complex

b. For each of the following characteristics, indicate whether it is a characteristic of either a platyhelminth, nematode or protozoan. (10 marks)

1. kinetoplast
2. miracidium
3. cuticle
4. acetabulum
5. eutely
6. scolex
7. oocyst
8. unicellular
9. gynecophoral canal
10. pleurocercoid

c. For each of the following sources, identify a potential parasite. (20 marks)

Source of infection	Parasite
1. water	
2. soil	
3. domestic animals	
4. Arthropods i. blood sucking	
ii. myiasis	
iii. mechanical	
5. blood transfusion	
6. congenital infection	
7. sexual intercourse	
8. green salad	

[Total marks = 50]

SECTION B

QUESTION 2

With special reference to Swaziland, discuss how behavioural strategies in the Family Culicidae pose a problem in the control of its members. How are these organisms generally controlled?

[Total marks = 25]

QUESTION 3

The parasites *Ancylostoma duodenale*, *Plasmodium* spp. and *Schistosoma mansoni* cause diseases referred to as the “world’s greatest scourges”. For any two of these:

- i. illustrate the life cycle,
- ii. disease caused,
- iii. diagnosis and methods of control.

[Total marks = 25]

QUESTION 4

- a. What is an immune response? Briefly discuss the two main types of responses in vertebrates.
- b. How do parasites evade detection by their host's immune system?

[Total marks = 25]

QUESTION 5

List the major characteristics of the Cestodes. Using illustrations and named examples, differentiate between Cyclophyllidae and Pseudophyllidean development.

[Total marks = 25]