GWANDA STATE UNIVERSITY

FACULTY OF NATURAL RESOURCES MANAGEMENT AND AGRICULTURE

DEPARTMENT OF CROP SCIENCE

PROGRAMME: BSc HONOURS HORTICULTURE AND CROP PRODUCTION

LCS 1201 INTRODUCTION TO ENTOMOLOGY AND PARASITOLOGY

FINAL EXAMINATION

JUNE-JULY 2023

This examination paper consists of 3 pages

Time Allowed:	3 hours
Total Marks:	100
Special Requirements:	graph paper, pictorial keys, ruler (supplied by GSU), calculator, pencil
Examiner's Name:	**Dr A Banda**

Instructions

1. Answer **ALL** questions in Section A
2. Answer any **TWO (2)** questions in Section B

Mark allocation

Question	**Marks**
Section A	60
Section B	40
Total attainable marks	100

SECTION A: Answer **ALL** questions.

Question 1

a) Match the pathogenic protozoa on the basis of the organ of locomotion and parasite example **8 Marks.**

Pathogenic protozoa	Organ of locomotion	Parasite example
rhizopoda	Exhibit no movement	Balantidium coli
mastigophora	Move with the help of pseudopodia	amoeba
sporozoa	Move with the help of cilia	trypanosoma
ciliata	Have elongated, thread like filaments, flagella	Malarial parasite

b) Citing a relevant example, explain the effects of parasites on the host **12 Marks.**

Question 2

a. Compare the life cycle of *Ascaris lumbricoides* with that of a hookworm **12 Marks.**

b. State the method of pathogeny diagnosis for *Taenia saginata* and malaria disease **8 Marks.**

Question 3

a. Describe the thorax region of the insect **10 Marks.**

b. Briefly explain the following insect abdomen modifications

(i) Sensory appendages **3 Marks.**

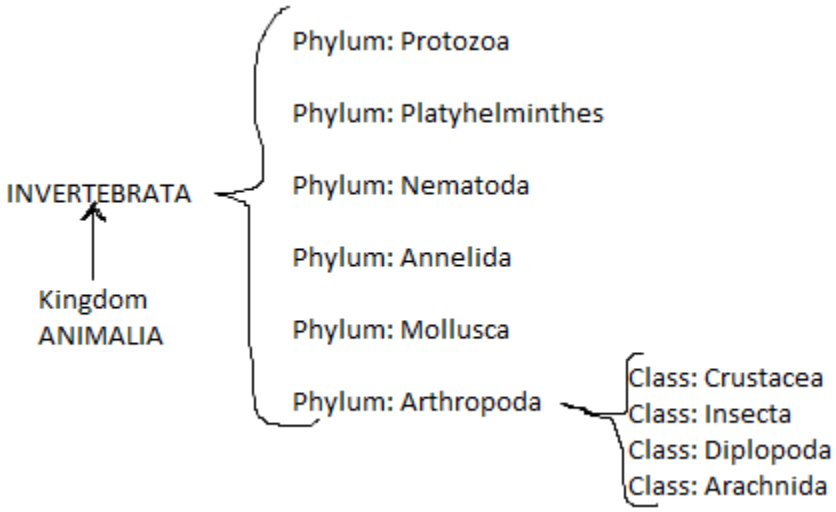
(ii) Defensive structures **3 Marks.**

(iii) Reproductive structures **4 Marks.**

SECTION B: Answer any **TWO** questions.

Question 4

a. Match one organism to their respective phylum and class under phylum Arthropoda using the diagram below: -Amoeba, sponges, Hydra, taenia, Ascaris, earthworm, snail, star fish, shrimp, housefly, millipede, spiders 9 **Marks.**

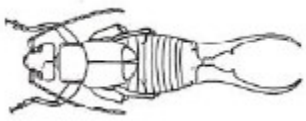
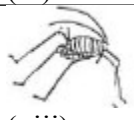


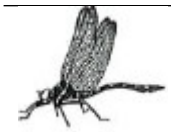
a. Draw a labelled diagram to show the structure of a named Platyhelmithes and a nematode **9 Marks.**

b. List the main difference between the two organisms **2 Marks.**

Question 5

State the orders of the insects below using the pictorial keys provided. **20 Marks.**

 (i)	 (ii)	 (iii)	 (iv)
 (v)	 (vi)	 (vii)	 (viii)

 (ix)	 (x)	 (xi)	 (xii)
 (xiii)	 (xiv)	 (xv)	 (xvi)
 (xvii)	 (xviii)	 (xix)	 (xx)

Question 6

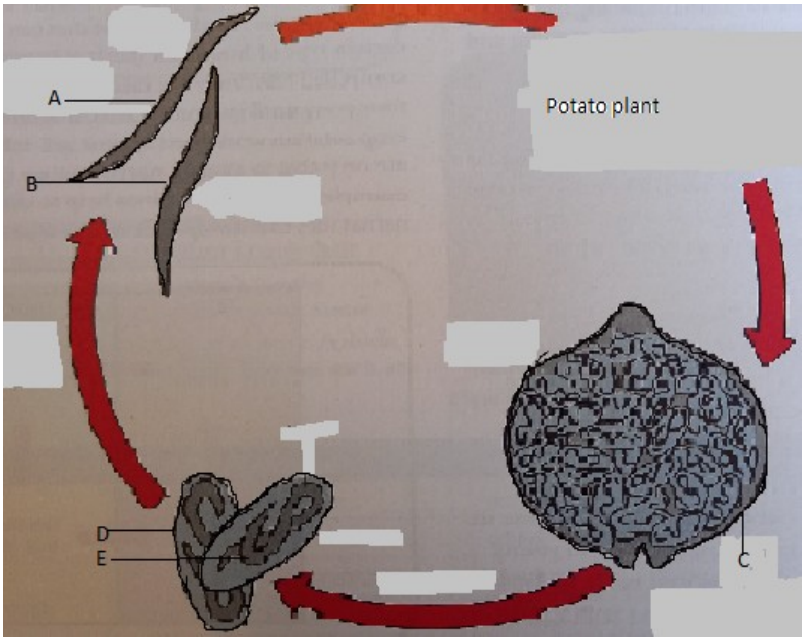


Figure 1 Life cycle of a potato cyst nematode

a. Label the diagram above **3 Marks.**
b. With the aid of the diagram above describe the life cycle of potato cyst nematode **5 Marks.**

c. Table 1 shows a specimen set of results

	Soil type	
	Continuously cropped with potatoes	Cropped with potatoes as part of a rotation
Total number of cyst per 100g of soil	24	10
Number of viable cysts out of the random sample of eight cyst	6	2
Percentage of viable cysts in the random sample	a----------	b----------

(i) Calculate the percentage of viable cysts in the random sample **2 Marks.**

(ii) Present the results in Table 1 as a bar chart on the graph paper provided **10 Marks.**

END OF QUESTION PAPER!!!