



FACULTY	HEALTH SCIENCES AND VETERINARY MEDICINE		
SCHOOL	SCHOOL OF VETERINARY MEDICINE		
DEPARTMENT	PARACLINICAL STUDIES		
SUBJECT	VETERINARY PARASITOLOGY I		
SUBJECT CODE	V3731AP		
DATE	JUNE 2025		
DURATION	3 hours	MARKS	150
SECOND OPPORTUNITY EXAMINATION PAPER			

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Examiner 2: Dr E. Hoebes
Internal moderator: Dr A. Samkange
External moderator: Prof B. Penzhorn (UP)

This examination consists of four (4) sections: A, B, C and D.

Instructions

1. This paper consists of **7 pages**, including this cover sheet.
2. Write your student number clearly on each page.
3. Carefully read the instructions at the start of each section.
4. Read the questions carefully.
5. Write clearly and concisely.
6. Any form of malpractice is unacceptable.

Section A: GENERAL INTRODUCTION TO HELMINTHS [20 marks]

1. State whether the following statements are **True** or **False**.
 - a. A paratenic host is the same as a biological host. [1 mark]
 - b. Vectors are required for direct life cycles. [1 mark]
 - c. Donkeys usually show clinical signs when infested with lungworms. [1 mark]
 - d. One of the control principles of control for haemonchosis is selective breeding. [1 mark]
 - e. In refugia-based control strategies, all animals in the herd are treated with anthelmintics. [1 mark]
 - f. There is trans-mammary transmission in *Ancylostoma tubeforme* infection. [1 mark]
 - g. *Gaigeria* species are primarily associated with dogs. [1 mark]
 - h. *Strongylus vulgaris* has a non-migratory life cycle. [1 mark]
 - i. *Spirocerca lupi* can be associated with malignant tumours. [1 mark]
 - j. The male *Oxyuris equi* parasites cause anal irritation. [1 mark]
2. Define the following terms about parasitology. [2 marks per definition, 10 marks].
 - a. Pre-patent period. [2 marks]
 - b. Intermediate host. [2 marks]
 - c. Indirect life cycle. [2 marks]
 - d. Biological vector. [2 marks]
 - e. Anhydrobiosis. [2 marks]

SECTION B: NEMATODES [80 marks]

1. Which group of animals are at risk of getting infected with *Cooperia* species? [1 mark]
2. What is the veterinary and public health significance of *Gaigeria* species? [4 marks]
3. Answer the following questions concerning *Ancylostoma caninum*.
 - a. List the parasite factors which are of epidemiological importance. [4 marks]
 - b. Outline the control measures one can institute. [5 marks]
4. Answer the following questions concerning *Trichinella* species.
 - a. Explain how *Trichinella* species appear on post-mortem examination of an infected carcass. [2 mark]
 - b. Name the specific equipment used for confirmation of diagnosis. [1 mark]
 - c. What is the preferred sample for diagnosis? [1 mark]
 - d. At which phase of migration is it possible to treat *Trichinella* species? [1 mark]
5. Answer the following questions in relation to *Dirofilaria* species.
 - a. Name the vector. [1 mark]
 - b. State the predilection sites for the following species. [3 marks]
 - i. *Dirofilaria immitis*. [2 marks]
 - ii. *Dirofilaria repens*. [1 mark]
6. Write brief notes on periparturient egg rise. [5 marks]
7. *Oesophagostomum dentatum* is an important parasite in pigs.
 - a. Discuss the control measures that you would implement in a piggery. [4 marks]
 - b. What is the goal of a control program at a piggery? [2 marks]

8. Answer the following questions in relation to *Toxocara canis*.
- List four (4) ways that a dog can acquire infection. [4 marks]
 - What is the most significant epidemiological feature of *T. canis* which assists in the transmission of the parasite? [2 marks]
9. Answer the following questions in relation to *Spirocerca lupi*.
- State the predilection sites. [2 marks]
 - What is the intermediate host. [1 mark]
 - State the final host. [1 mark]
 - Name any paratenic host. [1 mark]
 - List any three (3) types of pathological lesions observed in different organs or tissues after *S. lupi* infection. [3 marks]
 - State two (2) measures that you can use to control *Spirocerca lupi* infection. [2 marks]
10. In a table, compare and contrast *Chabertia ovina* and *Oesophagostomum columbianum* in sheep. [10 marks]

	<i>Chabertia ovina</i>	<i>Oesophagostomum columbianum</i>
Infective stage	a	b
Stage that penetrates mucosa	c	d
Stage that undergoes hypobiosis	e	f
Sensitivity of eggs and L3 to desiccation	g	h
Immunity development after initial exposure	i	j

11. Discuss the pathogenesis and pathology of Cyathostomins in horses. [10 marks]

12. *Onchocerca cervicalis* and *Onchocerca reticulata* are two important filarial worms of equines. Briefly discuss the pathogenesis and pathology associated with parasite presence in the following organs:

a) Ligamentum nuchae. [5 marks]

b) The skin. [5 marks]

SECTION C: CESTODES (30 MARKS)

1. Name the cestode species where humans can act as both intermediate and final host. [1 mark]
2. Name the genus and species of Cestodes (tapeworms) that cause Taeniosis in humans. [2 marks]
3. Name two methods that can be used to 'treat' metacestode-infested beef prior to human consumption. [2 marks]
4. What is the common intermediate host in the life cycle of *Anoplocephala* and *Moniezia* species? [1 mark]
5. What is the predilection site for *Stilesia hepatica*? [1 mark]
6. What is the economic importance of *Stilesia hepatica*? [1mark]
7. List the risk factors for the transmission of *Taenia saginata* from humans to cattle? [4 marks]
8. Outline the control and prevention of *Echinococcus granulosus* transmission [8 marks]
9. Describe the characteristics of each of the various transmission patterns of *Taenia saginata* (hyperendemic, endemic, and epidemic). [10 marks]

SECTION D: TREMATODES (20 MARKS)

1. Name the primary and secondary intermediate hosts of *Dicrocoelium* species. [2 marks]
2. Mention three (3) measures on which the efficiency of *Fasciola* control depends. [3 marks]
3. List seven (7) economic effects of chronic fasciolosis. [7 marks]
4. Answer the following questions concerning blood flukes.
 - a) Name (genus and species) of the blood fluke that is considered the most pathogenic. [2 mark]
 - b) How should you control schistosomiasis in cattle? [6 marks]

Section D: Trematodes [20 marks]

1. Compare and contrast fasciolosis and schistosomosis under the following sub-headings. [20 marks]

	Fasciolosis	Schistosomosis
Morphology of parasite (4 marks)	a	b
Compare the developmental stages of the parasite. (5 marks)	c	d
Sexuality (2 marks)	e	f
Predilection sites (2 marks)	g	h
Developmental stage that causes most pathology (2 marks)	i	j
Routes of infection or transmission (3 marks)	k	l
Intermediate host (1 mark)	m	n
Veterinary public health significance (1 mark)	o	p