



UNIVERSITY OF SWAZILAND
Faculty of Health Sciences

DEGREE IN ENVIRONMENTAL HEALTH
FINAL EXAMINATION PAPER 2019

TITLE OF PAPER : MEAT PARASITOLOGY

COURSE CODE : EHS 403

DURATION : 2 HOURS

MARKS : 100

- INSTRUCTIONS** :
- : ANSWER **ONLY FOUR** QUESTIONS
 - : QUESTION **ONE IS COMPULSORY**
 - : EACH QUESTION CARRIES 25 MARKS.
 - : READ THE QUESTIONS & INSTRUCTIONS CAREFULLY
 - : NO PAPER SHOULD BE BROUGHT INTO THE EXAMINATION ROOM.
 - : BEGIN EACH QUESTION ON A SEPARATE SHEET OF PAPER.

DO NOT OPEN THIS QUESTION PAPER UNTIL PERMISSION IS GRANTED BY THE INVIGILATOR.

Question 1

Multiple Choice Questions

(Choose the Best Answer)

1. Which statement is associated with *Bunostomum phlebotomum* parasite;
 - A. It is found in the bronchi of sheep or goats and in some ruminants it may appear as milk-white intestinal worms.
 - B. It causes bronchitis and pneumonia
 - C. The larvae may penetrate through skin or ingested
 - D. Only female species are seen, eggs are produced parthenogenetically
 - E. It forms nodules on the walls of the intestines.

2. Human fascioliasis is due to;
 - A. eating a liver infested with liver flukes
 - B. eating uncooked green leafy salads or grass infested with liver flukes.
 - C. eating uncooked green leafy salads infested with liver fluke cercariae or larvae.
 - D. eating uncooked green leafy salads infested with liver fluke eggs
 - E. eating a liver infested with cercariae or larvae.

3. In sheep, a swollen lower jaw indicates;
 - A. intestinal worms
 - B. liver flukes
 - C. actinomycosis
 - D. lump jaw
 - E. both A and B

4. In cattle, a swollen lower jaw indicates;
 - A. intestinal worms
 - B. liver flukes
 - C. actinomycosis
 - D. lumpy jaw
 - E. both C and D

5. Which one of these statements is associated with Heart water disease;
 - A. The parasite invades and parasitizes red blood cells.
 - B. The parasite attack and parasitize the epithelium of the intestinal tract
 - C. Though the red blood cells are parasitized, there is no haemoglobinuria.
 - D. Affected sheep have trouble walking, muscle twitching and loss of appetite.
 - E. The parasite, after the invasion of the red blood cells, they undergo both asexual and sexual multiplication.

- 6 Which one of these statements is associated with Anaplasmosis?
- A. It is mainly a disease of sheep but may also attack cattle.
 - B. The protozoa will parasitize red blood cells but does not destroy, so there is no haemoglobinuria.
 - C. There is continual movement of the limbs, head and jaw.
 - D. The vector of importance is *Amblyomma hebraeum*.
 - E. The gallbladder is highly distended.
7. African coast fever is mainly transmitted by;
- A. *Boophilus microplus*
 - B. *Rhipicephalus appendiculatus*
 - C. *Haemaphysalis punctata*
 - D. *Ixodes persulcatus*
 - E. *Rhipicephalus bursa*
- 8 Which of the following ticks are 2-host life cycle?
- A. *Rhipicephalus evertsi*
 - B. *Hyalomma punctata*
 - C. *Rhipicephalus appendiculatus*
 - D. *Boophilus annulatus*
 - E. Both A and C
- 9 ----- ticks are likely to have a 3-host life cycle.
- A. *Amblyomma hebraeum*
 - B. *Rhipicephalus evertsi*
 - C. *Haemaphysalis punctata*
 - D. *Boophilus annulatus*
 - E. Both A and C
- 10 Which of these tapeworms resides in the intestines of ruminants mainly sheep?
- A. *Thysaniezia giardia*
 - B. *Stilesia hepatica*
 - C. *Moniezia benedeni*
 - D. *Moniezia expansa*
 - E. *Taenia ovis*
- 11 Which of these tapeworms may infest rabbits or hares;
- A. *Taenia multiceps*
 - B. *Taenia hydatigena*
 - C. *Taenia serialis*
 - D. *Taenia pisiformis*
 - E. Both C and D

12. Coccidiosis in sheep is caused by;
- A. *Coccidia ovis*
 - B. *Eimeria parva*
 - C. *Eimeria perforans*
 - D. *Eimeria fusca*
 - E. *Eimeria zurnii*
13. Coccidiosis in rabbits is caused by;
- A. *Coccidia ovis*
 - B. *Eimeria parva*
 - C. *Eimeria perforans*
 - D. *Eimeria fusca*
 - E. *Eimeria zurnii*
14. Toxoplasmosis in human is caused by;
- A. *Toxoplasma gondii*
 - B. *Eimeria scabra*
 - C. *Eimeria perforans*
 - D. *Eimeria stiedae*
 - E. *Eimeria zurnii*
15. The larval stage of *Taenia hydatigena* is found hanging in the peritoneal cavity of;
- A. sheep
 - B. goats
 - C. cattle
 - D. pigs
 - E. sheep, goats, cattle, and wild ruminants
16. The larval stage of *Taenia multiceps* occurs in the brain and spinal cord of;
- A. sheep
 - B. goats
 - C. cattle
 - D. sheep, goats, hares and deer
 - E. sheep, and goats
17. In *Cysticercus ovis*, the adult reside;
- A. dogs or fox
 - B. sheep and goats
 - C. dogs and sheep
 - D. cattle and sheep
 - E. All of the above

18. Which of these diseases is **not** a tickborne infection?
- A. Red water fever
 - B. Black lung disease
 - C. Coccidiosis disease
 - D. Gall-sickness disease
 - E. Both B and D
19. Which one of these parasitic worms does not reside in the cattle liver?
- A. *Fasciola hepatica*
 - B. *Dicrocoelium dendriticum*
 - C. *Paramphistomum cervi*
 - D. *Stilesia hepatica*
 - E. *Fasciola gigantica*
20. *Hyostrongylus rubidus* resides in;
- A. Stomach lining of cattle forming nodules and giving rise to gastritis.
 - B. Stomach lining of pigs, forming nodules and giving rise to severe gastritis.
 - C. Stomach lining of sheep and forming nodules.
 - D. Stomach lining of rabbits & hares, forming nodules
 - E. Stomach lining of fowls and forming nodules
21. Which one of these diseases results in haemoglobinuria in cattle?
- A. Coccidiosis
 - B. Heart water
 - C. Babesiosis
 - D. Anaplasmosis
 - E. Toxoplasmosis
22. A sheep infested with hydatid cysts have;
- A. 8% fertile cysts
 - B. 92% fertile cysts
 - C. 20% fertile cysts
 - D. 90% fertile cysts
 - E. 10% fertile cysts
23. Inco-ordination of movement in pigs may be caused by;
- A. T.b meningitis
 - B. Swine fever
 - C. Pregnancy toxemia
 - D. Swine erysipelas
 - E. Pig paratyphoid

24. In pigs, swollen joints (chronic arthritis) may indicate;
- A. Swine fever
 - B. Swine pox
 - C. Swine erysipelas
 - D. Swine paratyphoid
 - E. Both A and C
25. Which parasitic worm causes residual lesions or necrosis or fibrosis in the liver? (milk spots)?
- A. *Fasciola hepatica*
 - B. *Ascaris lumbricoides*
 - C. *Stilesia hepatica*
 - D. *Dicrocoelium dendriticum*
 - E. *Onchocerca gutturosa*

[25 Marks]

Question 2

- a) During meat inspection, you observe that the liver has symptoms of fascioliasis. How would you differentiate the symptoms in sheep or cattle and chronic or acute fascioliasis? [10]
- b) Giving appropriate examples, explain why ante-mortem examination is important in meat inspection? [6]
- c) Describe the life cycle of *Amblyomma hebraeum*, and *Boophilus microplus*, and show how they transmit diseases from one animal to another. [9]

[25 Marks]

Question 3

- a) How would you control the spread of Hydatid diseases in human? [5]
- b) Using appropriate examples, explain the parasitic effects in food animals. [12]
- c) What do you understand by direct or indirect parasitic infestation spread? [6]
- d) *Strongyloides papillosus*, produce eggs parthenogenetically. What do you understand by this term? [2]

[25 Marks]

Question 4

- a) Describe the life cycle of ascaris species in cattle. [6]
- b) Briefly explain the major pathological problems associated with ascaris worms in food animals. [6]
- c) Describe the conditions that are associated with the transmission of ascaris in food animals. [4]
- d) How would you control the spread of *Fasciola hepatica* (Liver flukes) in human? [6]
- e) Give the causative agent for pimple guts in the following food animals; goats, pigs and cattle. [3]

[25 Marks]

Question 5

- a) Meat inspection is a mandatory requirement for all animals that are slaughtered and used as food for man. This requirement is to ensure that meat is safe for human consumption. Explain the steps that should be followed in routine post-mortem cattle meat inspection in Swaziland. [20]
- b) Why is meat inspection mandatory in Swaziland? [5]

[25 Marks]