UNIVERSITY OF SWAZILAND
Faculty of Health Sciences

DEGREE IN ENVIRONMENTAL HEALTH
FINAL EXAMINATION PAPER 2021

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 one of these parasitic worms reside in the lungs of pigs?
   A. *Strongyloides papillosus*
   B. *Metastrongylus salmi*
   C. *Trichostrongylus axei*
   D. *Ostertagia ostertagi*
   E. *Dictyocaulus viviparus*

2. ---------- is manifested by causing acute pulmonary emphysema and oedema in cattle.
   A. *Strongyloides papillosus*
   B. *Metastrongylus salmi*
   C. *Trichostrongylus axei*
   D. *Ostertagia ostertagi*
   E. *Dictyocaulus viviparus*

3. --------- causes Onchocerciasis in cattle with the formation of nodules in the brisket and hind limbs.
   A. Onchocerca linealis
   B. Onchocerca gutturosa
   C. Onchocerca volvulus
   D. Onchocerca gibsoni
   E. Onchocerca reticulate

4. 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.

5. Which statement is true in relation to Strongyloides papillosus 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.

6. 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 contaminated with liver fluke eggs
   E. eating a liver infested with metacercaria

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

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

9. Which one of these statements is true in relation to 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.

10. African coast fever is mainly transmitted by;
   A. Boophilus ticks
   B. Rhipicephalus ticks
   C. Haemaphysalis ticks
   D. Hyalomma ticks
   E. A, B and C ticks

10. Which tick (s) is (are) likely to have a 2-host life cycle?
   A. Haemaphysalis ticks
   B. Hyalomma ticks
   C. Rhipicephalus ticks
   D. Boophilus ticks
   E. A, B and C ticks

11. -------- ticks are likely to have a 3-host life cycle.
    A. Amblyomma ticks
    B. Dermacentor ticks
    C. Haemaphysalis ticks
    D. Boophilus ticks
    E. A, B and C

13 Which of these tapeworms resides in the intestines of ruminants mainly sheep?
    A. *Taenia hydatigena*
    B. *Stilesia hepatica*
    C. *Moniezia benedeni*
    D. *Moniezia expansa*
    E. *Taenia ovis*

14 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*

15 Coccidiosis in sheep is caused by;
    A. *Coccidia ovis*
    B. *Eimeria parva*
    C. *Eimeria perforans*
    D. *Eimeria fusca*
    E. *Eimeria zurnii*

16 Coccidiosis in rabbits is caused by;
    A. *Coccidia ovis*
    B. *Eimeria parva*
    C. *Eimeria perforans*
    D. *Eimeria fusca*
    E. *Eimeria zurnii*

17. Toxoplasmosis in cattle is caused by;
    A. *Toxoplasma gondii*
    B. *Toxoplasma bovis*
    C. *Eimeria perforans*
    D. *Eimeria parva*
    E. *Eimeria zurnii*

18. What is the characteristic sign for African Coast Fever (ACF)?
- A. nasal discharge
- B. lymph nodes enlargement
- C. lymph nodes atrophy
- D. anorexia
- E. hydropericardium

19. Which tick borne disease is likely to be transmitted by the (Blue tick)?
- A. anaplasmosis
- B. heart water
- C. sweating sickness
- D. theileriosis
- E. all of the above

20. 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

21. Which of these diseases is **not** a tick-borne disease?
- A. Red water fever
- B. Black lung disease
- C. Coccidiosis disease
- D. Gall-sickness disease
- E. Both B and D

22. ..... (milk tapeworms) affect young animals who are still feeding on milk, but it does not show symptoms in adults;
- *A.* *Dicrocoelium dendriticum*
- *B.* *Paramphistomum cervi*
- *C.* *Moniezia species*
- *D.* *Stilesia hepatica*
- *E.* *Fasciola gigantica*

23. *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

24. Which one of these diseases result in haemoglobinuria in cattle;
    A. coccidiosis
    B. heart water
    C. babesiosis
    D. anaplasmosis
    E. toxoplasmosis

25. 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

[25 Marks]

Question 2

a) During meat inspection, you encounter fascioliasis lesions in cattle or sheep. Describe the lesions in sheep and cattle, chronic or acute fascioliasis. [10]

b) Giving appropriate examples, explain why ante-mortem examination is important in meat inspection? [5]

c) Describe the life cycle of *Amblyomma hebraeum,* and *Boophilus microplus,* and then show how they transmit diseases from one animal to another. [10]

[25 Marks]

Question 3

a) Describe the post-mortem signs you are likely to encounter when inspecting a cattle carcass with Coccidiosis disease. [5]

b) 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]

[25 Marks]

Question 4

a) Briefly describe the life cycle of Ascaris lumbricoides in cattle. [6]
b) Briefly explain the major pathological problems associated with ascaris worms in food animals. [5]
c) Give the conditions that are necessary in the transmission of Coccidiosis within the food animals. [5]

d) How would you control the spread of *Taenia saginata* (beef tapeworms) in human? [6]

e) Give the causative agent for pimple guts or intestinal nodules on the gut of the following food animals; goats, pigs and cattle. [3]

[25 Marks]

Question 5

Tick-borne infestation has become an unstoppable menace in Swaziland and is threatening to wipe out the cattle herds and this problem hugely affects the meat industry. The present strategy of tick-borne infestation reduction is offering very little as a control. In your own assessment why is the current method of control are failing.

[25 Marks]