# UNIVERSITY OF SWAZILAND
## Faculty of Health Sciences

## DEGREE IN ENVIRONMENTAL HEALTH
## FINAL EXAMINATION PAPER 2017

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| **TITLE OF PAPER** | : | MEAT PARASITOLOGY |
| **COURSE CODE** | : | EHM 403 |
| **DURATION** | : | 2 HOURS |
| **MARKS** | : | 100 |

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| **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 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 parthenogenitically
   E. It forms nodules on the walls of the intestines.

5. 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.

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

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

8. Which one of these statements is relevant 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.

9 Which one of these statements is relevant to Anaplasmosis in cattle?
   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 heart has petechial haemorrhage and is flabby

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

11. 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

12. -------- 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. Thysaniezia giardia*
    *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 is caused by;
    *A. Toxoplasma gondii*
    *B. Eimeria scabra*
    *C. Eimeria perforans*
    *D. Eimeria stiedae*
    *E. Eimeria zurnii*

18. 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 pigs

19. The larval stage of *Taenia multiceps* occurs in the brain and spinal cord of;
   A. sheep
   B. goats
   C. cattle
   D. man
   E. sheep, goats, cattle, and man

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 tickborne infection?
   A. Red water fever
   B. Black lung disease
   C. Coccidiosis disease
   D. Gall-sickness disease
   E. Both B and D

22. 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*

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. Babesiasis
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 may encounter an acute or chronic fascioliasis in cattle or sheep. Describe the characteristic difference in sheep or cattle having 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 others. [9]

**[25 Marks]**

**Question 3**

a) Describe the possible symptoms and lesions you would encounter when inspecting a cattle carcass suffering from Coccidiosis. [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) 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 necessary in the transmission of Coccidiosis in food animals. [5]

d) How would you control the spread of *Taenia saginata* (beef tapeworms) in human? [5]
e) Give causative agent for pimple guts in 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 failing and what other options can be suggested to reduce the infestation. **[25 Marks]**