



UNIVERSITY OF SWAZILAND
Faculty of Health Sciences

DEGREE IN ENVIRONMENTAL HEALTH
FINAL EXAMINATION PAPER 2015

TITLE OF PAPER : MEAT PARASITOLOGY

COURSE CODE : EHM 403

DURATION : 2 HOURS

MARKS : 100

INSTRUCTIONS : ANSWER ONLY FOUR QUESTIONS

: QUESTION ONE IS COMPULSORY

: EACH QUESTION CARRIES 25 MARKS.

: WRITE NEATLY

: 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 most appropriate answer.

1. Which one of these parasitic worms reside in the pig's lungs;
 - A. *Angiostrongylus spp*
 - B. *Dictocaulus viviparus*
 - C. *Trichostrongylus axei*
 - D. *Metastrongylus salmi*
 - E. *Strongyloides papillosus*

2. Which one of these parasitic worms reside in the human intestines?
 - A. *Fasciola hepatica*
 - B. *Taenia solium*
 - C. *Diphyllobothrium latum*
 - D. Both B and C
 - E. *Echinococcus granulosus*

3. In Swaziland human fascioliasis is caused by;
 - A. *Distomum hepatica*
 - B. *Lymnaea truncatula*
 - C. *Fasciolopsis buski*
 - D. Both A and C
 - E. *Fasciola gigantica*

4. *Haemonchus contortus* in cattle resides in the;
 - A. rumen
 - B. reticulum
 - C. omasum
 - D. abomasum
 - E. both A and B

5. Which of these tapeworms are likely to be found in the intestines of ruminants mainly sheep?
 - A. *Thysaniezia giardia*
 - B. *Stilesia hepatica*
 - C. *Moniezia benedeni*
 - D. *Moniezia expansa*
 - E. *Taenia ovis*

6. 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

7. Coccidiosis in sheep is caused by;
- A. *Coccidia ovis*
 - B. *Eimeria scabra*
 - C. *Eimeria perforans*
 - D. *Eimeria faurei*
 - E. *Eimeria zurnii*
8. Coccidiosis in rabbits is caused by;
- A. *Coccidia ovis*
 - B. *Eimeria scabra*
 - C. *Eimeria perforans*
 - D. *Eimeria faurei*
 - E. *Eimeria zurnii*
9. The causative agent for Toxoplasmosis is;
- A. *Toxoplasma gondii*
 - B. *Eimeria scabra*
 - C. *Eimeria perforans*
 - D. *Eimeria stiedae*
 - E. *Eimeria zurnii*
10. Which one of these statements is **not correct**:
- A. A goat affected by Heart water disease exhibits a rapid rise in temperature followed by laboured respiration and muscular tremor
 - B. A sheep affected by Heart water disease shows a continual movement of the limbs, head, ears, tongue and jaw.
 - C. Heart water disease is caused by an intracellular parasite, *Cowdria ruminantium*
 - D. The parasite *Cowdria ruminantium* infect the red blood cells and set free haemoglobin content.
 - E. *Boophilus microplus* tick is a 1-host vector of Red water fever.
11. In pigs, a nasal discharge may be indicative of;
- A. flue fever
 - B. parasitic bronchitis
 - C. Bot-fly breeding in the nostrils
 - D. *Swine fever*
 - E. Both B and C
12. In sheep, a swollen lower jaw may be indicative of;
- A. intestinal worms
 - B. liver flukes
 - C. actinomycosis
 - D. Both A and B
 - E. lumpy jaw

13. In pigs, chronic arthritis (swollen joints) indicates;
- A. Swine erysipelas
 - B. Swine fever
 - C. Pig paratyphoid
 - D. Swine flue
 - E. A, B and C
14. In pigs, de-coloration of the skin may be indicative of;
- A. Swine erysipelas
 - B. Swine fever
 - C. Pig paratyphoid
 - D. Swine flue
 - E. A, B and C
15. Which statement is **not true** in relation to nematodes?
- A. indirect spread, is where the larvae enters the host, which is then eaten up by a definitive host
 - B. direct spread, is where the eggs hatch, larvae are free living and enter host by mouth or skin penetration.
 - C. nematodes are hermaphrodite parasites, there is no female or male
 - D. *Dictyocaulus viviparus* is a bovine lung parasite and it reside in the trachea And large bronchi.
 - E. *Dictyocaulus vivipaurus* may result to stunted growth and death in calves and reduced milk production in adults
16. Which statement is **not true** in relation to Anaplasmosis?
- A. Anaplasmosis is also known as gall-sickness
 - B. The disease is caused by *Anaplasma marginale* in cattle which is commonly transmitted by *Boophilus* spp. tick
 - C. The gallbladder is highly distended
 - D. The parasite attacks the red blood cells but does not destroy them; anemia and jaundice are main signs
 - E. It is a disease of sheep and goats but may also attack cattle
17. Coccidiosis post-mortem signs in the liver of rabbits are;
- A. irregular shaped whitish nodules of different sizes scattered unevenly on the surface of the liver
 - B. different sized nodules which appear in clusters or clumps and often calcareous
 - C. irregular shaped, uniform sized whitish nodules which are scattered evenly on the surface of the liver
 - D. regular shaped, uniform sized nodules which are scattered unevenly on the surface of the liver
 - E. different sized nodules which appear individual and often caseated

18. Cattle suffering from Red water fever will show the following disease symptoms;
- A. fever, anaemia, jaundice and haemoglobinurea
 - B. fever, anaemia, jaundice, and constipation
 - C. rapid rise in temperature followed by laboured respiration, anorexia and muscular tremor
 - D. nervous signs which include continual movement of limbs, head, ears, tongue, and jaw, circling movement and tonic convulsions with rigid neck
 - E. Both C and D
19. Cattle suffering from gall-sickness will show the following symptoms;
- A. fever, anaemia, jaundice and haemoglobinurea
 - B. fever, anaemia, jaundice, and constipation
 - C. rapid rise in temperature followed by laboured respiration, anorexia and muscular tremor
 - D. nervous signs which include continual movement of limbs, head, ears, tongue, and jaw, circling movement and tonic convulsions with rigid neck
 - E. Both C and D
20. The condition myiasis refers to;
- A. flies deposition of eggs or larvae on wounds of animals
 - B. flies deposition of eggs or larvae in the nostrils of sheep
 - C. flies deposition of eggs or larvae on the skin of food animals
 - D. large numbers of pimply guts on the intestines of food animals
 - E. large numbers of conical flukes in the stomach of ruminants
21. The larval stage of *Taenia hydatigena* is found hanging in the peritoneal cavity of;
- A. sheep
 - B. goats
 - C. cattle
 - D. pigs
 - E. all of the above
22. The larval stage of *Taenia multiceps* occurs in the brain and spinal cord of;
- A. sheep
 - B. goats
 - C. cattle
 - D. man
 - E. all of the above

23. *Taenia ovis* larval stage is found;
- hanging in the abdominal cavity of goats and sheep
 - in the muscles of the heart, diaphragmatic pleura and skeletal muscles, including muscles of the flanks and in the tongue, masseter muscles and oesophagus
 - in the intermuscular subcutaneous tissue of the back, the loin and hind limbs and muscles of the jaw
 - in the masseter and shoulder muscles, tongue and abdominal muscles
 - in the masseter, heart, tongue, diaphragm and intercostals muscles of sheep and goat
24. Which of these diseases is **not** a tickborne infection?
- Red water fever
 - Black lung disease
 - Coccidiosis disease
 - Gall-sickness disease
 - Both B and C
25. Which statement does not describe ixodidae ticks family?
- ticks stay feeding on host for long periods
 - more tolerant to dry conditions
 - sexes are easily distinguished in adults
 - large numbers of eggs are laid all at one time, after which the female dies.
 - Both A and D

[25 Marks]

Question 2

- Explain the transmission and control of toxoplasmosis to human. [6]
- Suggest appropriate methods for the control of human tapeworms. [5]
- How would you control human fascioliasis in Swaziland? [5]
- How would you ensure that hydatid diseases are eliminated in Swaziland? [5]
- During the meat inspection, you find a small hydatid cyst in the lung, what will be your judgment and why? [4]

[25 Marks]

Question 3

- During cattle meat inspection, you find one *Taenia saginata* cyst in masseter muscles. What will be your judgment? Explain [8]
- In the case of pig inspection, you find one *Taenia solium* cyst in the masseter muscles. What will be your judgment? Explain [3]

- c) If then, the *T. saginata* cysts are in both the masseter muscles and the shoulder muscles. What will be your judgment? Explain [3]
- d) Name three (3) conditions that are commonly found in the kidney of cattle in Swaziland. [3]
- e) In meat inspection, the knowledge of the symptoms and lesions are paramount in assisting the meat inspector to reach an informed decision and judgment. The inspector may either condemn the whole carcass or only affected organs and parts of the carcass. Discuss the ante- mortem and post-mortem signs of red water fever. [8]

Question 4

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

[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]