



**UNIVERSITY OF SWAZILAND**  
**Faculty of Health Sciences**

**DEGREE IN ENVIRONMENTAL HEALTH**  
**FINAL EXAMINATION PAPER 2018**

**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.
- 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.**

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**Question 1****Multiple choice questions****Choose the most appropriate answer.**

1. During meat inspection, you observe that the intestines have few nodules or pimply guts and your judgment would be;
    - A. Ignore and pass the carcass as fit for human consumption
    - B. Seize and condemn the whole carcass as unfit for human consumption
    - C. Trim the tumors and then pass the carcass as fit for human consumption
    - D. Freeze the whole carcass at  $-18^{\circ}\text{C}$  for a week then pass it
    - E. Seize and condemn the intestines as unfit for human consumption
  
  2. ----- causes intestinal pimply guts or nodules in pigs.
    - A. *Oesophagostomum radiatum*
    - B. *Oesophagostomum columbianum*
    - C. *Oesophagostomum dentatum*
    - D. *Oesophagostomum cellulosa*
    - E. *Echinococcus granulosus*
  
  3. In Swaziland, the intermediate host for human fascioliasis is;
    - A. *Fasciola hepatica*
    - B. *Lymnaea truncatula*
    - C. Planorbid species
    - D. *Formica fusta*
    - E. *Fasciola gigantica*
  
  4. Human fascioliasis is caused by;
    - A. eating a bovine liver infested by *Fasciola hepatica*
    - B. eating uncooked watercress or vegetables which are infested by *F.hepatica* cercaria
    - C. eating meat contaminated by *F. hepatica* eggs
    - D. eating uncooked vegetables that are infested by *F.hepatica*
    - E. eating meat that has been contaminated by a person suffering from fascioliasis.
  
  5. Which one of these statements is **not correct**;
    - A. A goat affected by Heart water disease exhibit a rapid rise in temperature followed by laboured respiration and muscular tremor
    - B. A sheep affected by Heart water disease show 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* parasitize the red blood cells and set free the haemoglobin content.
    - E. *Boophilus microplus* tick is a 1-host vector of Red water fever.
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6. 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
7. 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
8. In pigs, chronic arthritis (swollen joints) indicates;
- A. Swine erysipelas
  - B. Swine fever
  - C. Pig paratyphoid
  - D. Swine flue
  - E. A, B and C
9. 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
10. 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 and is most 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
11. Coccidiosis post-mortem signs in the liver of rabbits are;
- A. irregular shaped 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 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
12. Cattle suffering from Red water fever will show the following disease symptoms;
- A. fever, anaemia, jaundice and haemoglobinuria
  - 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
13. 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
14. 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
15. 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
16. *Taenia ovis* larval stage is found;
- A. hanging in the abdominal cavity of goats and sheep
  - B. in the muscles of the heart, diaphragmatic pleura and skeletal muscles, include muscles of the flanks and in the tongue, masseter muscles and oesophagus
  - C. in the intermuscular subcutaneous tissue of the back, the loin and hind limbs and muscles of the jaw
  - D. in the masseter and shoulder muscles, tongue and abdominal muscles
  - E. in the masseter, heart, tongue, diaphragm and intercostals muscles of sheep and goat

17. 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
18. Which statement (s) describes argasidae ticks family?
- A. ticks stay feeding on host for long periods
  - B. more tolerant to dry conditions
  - C. sexes are easily distinguished in adults
  - D. large numbers of eggs are laid all at one time, after which the female dies.
  - E. Both A and D
19. In Swaziland, meat inspection or examination is done in order to;
- A. Control foodborne infections
  - B. Control zoonotic diseases
  - C. Control the sale of stolen cattle and meat
  - D. Encourage hygienic practices in abattoirs and butcheries
  - E. Ensure that only cattle meat is sold in butcheries
20. "Milk spots", residual lesions of necrosis or fibrosis caused by *Ascaris* species is caused by;
- A. migrating larvae
  - B. trapped larvae
  - C. trapped eggs
  - D. excrement of ascaris sp.
  - E. dead or necrotic adult ascaris sp.
21. 'Pimply guts' in goats are caused by;
- A. *Paramphistomum cervi*
  - B. *Oesophagostomum radiatum*
  - C. *Oesophagostomum ovis*
  - D. *Oesophagostomum columbianum*
  - E. *Oesophagostomum dentatum*
22. 'Conical flukes' in cattle are caused by;
- A. *Oesophagostomum radiatum*
  - B. *Oesophagostomum bovis*
  - C. *Oesophagostomum columbianum*
  - D. *Paramphistomum cervi*
  - E. *Oesophagostomum dentatum*

23. 'Hydatid cysts' in cattle is more likely to be found in the;
- A. spinal cord and brain
  - B. liver and lung
  - C. spleen and kidney
  - D. heart and intercostal muscles
  - E. rumen and reticulum
24. Which of these parasites have an intermediate host?
- A. Bunostomum species
  - B. Metastrongylus species
  - C. Ascaris species
  - D. Strongylus species
  - E. Trichostrongylus species
25. How are human or animals infested by Bustomum species?
- A. ingested in food
  - B. skin penetration
  - C. drinking water
  - D. blow flies infestation
  - E. both A and B

[25 Marks]

**Question 2**

- a) During meat inspection, you find a small hydatid cyst in the lung. What will be your judgment and why? [4]
- b) How would you control hydatid cysts? [6]
- c) Describe both the ante- and post-mortem signs of Heartwater in goats. [15]

[25 Marks]

**Question 3**

- a) Describe chronic fascioliasis in both cattle and sheep. [6]
- b) Why is the judgment for chronic fascioliasis different in cattle and sheep? [4]
- c) Describe the life cycle of Amblyomma hebraeum. [6]
- d) How do Boophilus ticks spread diseases? [3]
- e) Give the anaplasmosis lesions that are likely to be seen in cattle. [6]

[25 Marks]

**Question 4**

You have been sent to Mbabane City Council abattoir to perform meat inspection of cattle carcass. Explain the routine meat inspection procedures you would follow when inspecting cattle carcass and give at least one condition you are likely to find in each organ inspected.

[25 Marks]

**Question 5**

Tick-borne infestations have become an unstoppable menace in Swaziland and are threatening to wipe out the cattle herds and this problem hugely affects the meat industry.

Discuss the strategies that can be employed by Swazi farmers to arrest this problem?  
**[25 Marks]**