



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

**DIPLOMA IN ENVIRONMENTAL HEALTH**  
**FINAL EXAMINATION PAPER 2009**

**TITLE OF PAPER** : MEAT PARASITOLOGY

**COURSE CODE** : EHS 208

**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. 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. Give the scientific name for intestinal pimply guts or nodules in pigs.
  - A. *Oesophagostomum radiatum*
  - B. *Oesophagostomum columbianum*
  - C. *Oesophagostomum dentatum*
  - D. *Oesophagostomum bovis*
  - E. *Echinococcus granulosus*
  
3. In Swaziland, the intermediate host in human fascioliasis is;
  - A. *Fasciola hepatica*
  - B. *Limnaea species*
  - C. *Planorbis species*
  - D. *Fasciolopsis buski*
  - 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 bovine intestines infested with the adult worms
  - 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.

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 Heart water diseases?
- A. Heart water diseases is also known as Black lung diseases
  - B. The incidence is common in Swaziland and is caused by *Cowdria ruminantium*
  - C. Heart water is transmitted by *Amblyomma hebraeum* or other ticks of this genus
  - D. The lymph nodes of the thorax, head and neck are oedematous and enlarged
  - E. It is a disease of cattle but may attack sheep and goats
11. 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

12. 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
13. 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
14. Cattle suffering from gall-sickness will show the following 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
15. 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
16. 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

17. 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
18. *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
19. 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
20. 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
21. 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 butchereries
  - E. Ensure that only cattle meat is sold in butchereries
22. "Milk spots", residual lesions of necrosis or fibrosis caused by *Ascaris* species may be seen on;
- A. heart
  - B. lungs
  - C. spleen
  - D. liver
  - E. kidneys

23. "Pimply guts" in cattle are caused by;
- Oesophagostomum columbianum
  - Oesophagostomum radiatum
  - Oesophagostomum dentatum
  - Oesophagostomum bovis
  - Paramphistomum cervi
24. "Conical flukes" in cattle are caused by;
- Oesophagostomum cervi
  - Oesophagostomum bovis
  - Oesophagostomum columbianum
  - Paramphistomum bovis
  - Paramphistomum cervi
25. "Hydatid cysts" in human are caused by;
- Echinococcus granulosus
  - Dog tape worms
  - Taenia saginata
  - Moniezia benedeni
  - Thysaniezia giardia

**[25 Marks]**

### Question 2

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]

**[25 Marks]**

### Question 3

- Show the symptoms of fascioliasis (chronic and acute forms) both in cattle and sheep [10]
- Give the most common predilection sites for 'beefy measles'. [5]
- Discuss the methods that may be adopted in the control of parasitic worms in human from animals. [7]
- During the meat inspection, you find a small hydatid cyst in the lung, what will be your judgment and why? [3]

**[25 Marks]**

**Question 4**

Both the dog and human tape worms are a menace in third world countries and Swaziland is no exception. Formulate strategies that can be adopted to eliminate these tape worms and show how dog tapeworms are of human health importance.

**[25 Marks]**

**Question 5**

Tickborne infections 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]**