

**ANH – Animal Diseases
prevention and Control**

T124

Thursday, 10/11/2016

08:30 – 11:30

WORKFORCE DEVELOPMENT AUTHORITY



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**ADVANCED LEVEL NATIONAL EXAMINATIONS, 2016,
TECHNICAL AND PROFESSIONAL STUDIES**

EXAM TITLE:

ANIMAL DISEASES PREVENTION AND CONTROL

OPTION: ANIMAL HEALTH (ANH)

DURATION: 3 hours

INSTRUCTIONS

The paper is composed of **two (2) main Sections** as follows:

Section I: Attempt **any SIX (6)** out of TEN questions. **30 marks**

Section II: Attempt **any SEVEN (7)** out of TEN questions. **70 marks**

Note:

Every candidate is required to carefully comply with the above instructions. Penalty measures will be applied on their strict consideration.

Section I. Choose and answer any six (6) questions**30 marks**

01. Explain the “*bar test*” in clinical examination of the gastrointestinal system.
What abnormality does it detect? **5 marks**
02. Explain the “*Capillary refill time (CRT)*” in a clinical examination. **5 marks**
03. Explain the terms “*selective toxicity*” and “*Lethal Dose₅₀ (LD₅₀)*”. Give the name of a drug that can be used in the case of ruminal bloat (tympany) in cattle. **5 marks**
04. What should be the required knowledge or criteria to be taken into account before a clinician selects the most appropriate Antibiotic agent? **5 marks**
05. Distinguish the “*intrinsic predisposing causes*” from the “*extrinsic predisposing causes*” of a disease. **5 marks**
06. Give and explain the three types of respiration found in domestic animals. **5 marks**
07. How can you treat an animal with the case of Cyanide/Cassava Poisoning? **5 marks**
08. Give at least five properties that an ideal anthelmintic should possess. **5 marks**
09. What do you understand by the following terms often applied in semiology:
“*downer cow*” and “*dummy’ syndrome*” in semiology? **5 marks**
10. Explain the term PCV - also known as “haematocrit” in diagnosis. Give the role of the PCV values in a laboratory test? **5 marks**

Section II. Choose and Answer any seven (7) questions**70 marks**

11. Trypanosomiasis is a challenge to farmers in the districts of Kayonza, Gatsibo and Nyagatare around Akagera National Park. This is a real case exposed to technicians in the region and now, you are assigned to be a veterinary officer in that area and one of the tasks is to eradicate the bovine trypanosomiasis.
 - a) How are you going to explain to the farmers the possible transmission ways of trypanosome infections to their animals?
 - b) Propose to the farmers at least two drugs commonly used for bovine Trypanosomiasis and their main action (curative or preventive). **10 marks**
12. Shortly after calving and the onset of milk production, an older high-producing dairy cattle showed the signs of hypersensitivity and excitability. Sometimes, the cow appeared restless and bellowing. Soon after, the cow was unable to stand but maintained sternal recumbency. Depression, anorexia, dry muzzle, subnormal body temperature and cold extremities were observed. The cow often tucked the heads into the flanks and when the head was extended, an S-shaped curve to the neck was noted. The cow started to lose consciousness progressively, became unable to maintain sternal recumbency, unresponsive to stimuli and signs of bloat were observed with an abnormal heartbeat and undetectable pulse.

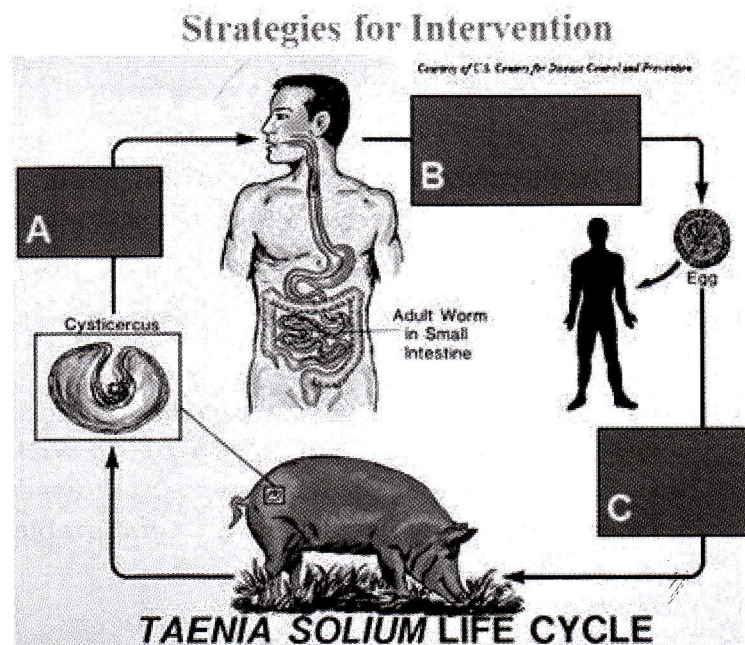
- What do you think was the main cause based on the observed clinical signs and information?
- How are you going to explain this situation to the cow owner?
- How will you intervene to rescue the cow (treatment and prevention)?

10 marks

- 13.** Cysticercosis caused by *Taenia solium* is a zoonotic disease which is reported mostly in Nyamagabe district. One of the ways to control this disease is to break its lifecycle. The following diagram shows the life cycle of *Taenia solium*.

Indicate in each mentioned stage of the cycle (A, B, C) the strategic control measures (actions to be taken) you are going to implement to stop the life cycle of this parasite. Give the definitive (final) host of *Taenia solium* in this life cycle.

10 marks



- 14.** A farmer calls you for advice and intervention after his farm animals were no longer productive and very young animals were mostly affected. Your deep observation and analysis reveal that the animals are kept in inappropriate conditions for rearing where a mean daily temperature referred to as the "**comfort zone**" is the main cause of less production.

- As a technician, how are you going to explain to that farmer what the comfort zone is?
- How does the temperature affect physiologically the animal when the comfort zone is not respected?
- Explain why very young animals are more sensitive to its thermal environment.

10 marks

15. Anaplasmosis and Theileriosis are common tick-borne diseases in Rwanda. Their diagnosis confuses the technicians clinically and at post-mortem when it comes to take a final decision.

Differentiate the two tick-borne diseases based on the parameters indicated in the table below:

10 marks

	Anaplasmosis	Theileriosis
Main tick vector (give the genus)		
Common characteristic signs or macroscopic lesions		
Specific treatment		

16. In a cattle farm located in Kigali city, there is a confirmed case of Lead Poisoning in calves near a factory waste dumping site.

a) As a technician, what are the clinical signs of an acute Lead poisoning are you expecting to find on the affected animal before you reach the farm?

b) What medication/ drugs will you give to these calves to save their lives?

c) Propose at least two prevention/ control measures to the farm owner.

10 marks

17. You are in the awareness campaign to fight against ectoparasites using the chemical control. Explain clearly to farmers the meaning of **dipping bath** and **hand spraying** techniques. Try to show to the farmer the advantages and disadvantages for each of the above techniques so that he/she decides on the comfortable method to use in his/her farm.

10 marks

18. Flotation and sedimentation are both concentration techniques used in parasitological diagnosis.

a) Differentiate the “flotation” from “sedimentation” based on their purpose/aim in diagnosis.

b) What are the indications and parasitic stages likely to be found by flotation and by sedimentation?

10 marks

19. During the carcass disposal, when an animal has died of blackleg disease, what are the instructions should you apply when manipulating the carcass to avoid propagation of the disease?

10 marks

20. You are planning a massive vaccination campaign and you need to train first the Para-veterinarians to help you during this exercise. Explain to them the difference between an “active immunization” and a “passive immunization” to help them to understand the mechanism.

10 marks