



## ANH – Ruminant farming and Animal Feeding

**T024**

**Tuesday, 20/7/2021**

**08:30 - 11:30 AM**

**Names**

**Index number**

**TVET NATIONAL EXAMINATION, RTQF LEVEL 5, 2020-2021**

## QUESTIONS and ANSWERS BOOKLET

**OPTION /TRADE: ANIMAL HEALTH**

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**SUBJECT: Ruminant farming and Animal Feeding**

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FOR EXAMINER'S USE ONLY											
QUESTIONS	1	2	3	4	5	6	7	8	9	10	Total
Marks											
QUESTIONS	11	12	13	14	15	16	17	18	19	20	Total
Marks											
QUESTIONS	21	22	23	24	25	26	27	28	29	30	Total



# **TVET NATIONAL EXAMINATION, RTQF LEVEL 5, 2020-2021**

## **INSTRUCTIONS TO CANDIDATES: PART I (Answer Booklet)**

1. A candidate should fill in the actual names and the index number on the cover of this questions and answer booklet on the provided place (Black Box).
2. It is illegal for a candidate to write any of his/her names, index number or a school name inside the answer booklet.
3. A candidate should check if all pages of the answer booklet are complete. No candidate should remove or tear any pages or part of it from the answer booklet.
4. A candidate should answer in the language in which the examination is set. (See page **(ii)**)
5. A candidate should sign on the sitting plan when submitting the answer booklet. He/she has also to check if the answer booklet is well sealed.
6. No extra paper is allowed in the examinations room. If a candidate is caught with it his/her results will be nullified.
7. No candidate is allowed to write answers not related to the subject being sat for, otherwise it will be considered as a cheating case.
8. Write your answers on the 12 lined pages (From page 1 of 12 to page 12 of 12).
9. Use the last non-lined pages as draft.
10. Results for any candidate who is caught in examination malpractices are nullified. The cheating can be recognized during examinations administration, marking exercise or even thereafter.

**TVET NATIONAL EXAMINATION, RTQF LEVEL 5, 2020-2021**

**OPTION/TRADE: ANIMAL HEALTH**

**SUBJECT: Ruminant farming and Animal Feeding**

**DURATION: 3 hours**

**INSTRUCTIONS TO CANDIDATES: PART II (Question paper)**

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

**Section I: Attempt all the Twelve (12) questions (60 marks)**

**Section II: Attempt any Four (4) questions out of Six (6) (40 marks)**

**Allowed materials:**

-Ruler and square

-Calculator

**Note:**

***Every candidate is required to carefully comply with the provided assessment instructions.***

**Section I: Attempt all the Twelve (12) questions**

**(60 marks)**

1. The pregnancy diagnosis is a practice which is very important in ruminant reproductive management. What are five (5) possible ways that can help you to perform the pregnancy diagnosis in cows farming?  
(5 marks)
2. Mention five (5) dairy protein sources that can be used as artificial milk replacers for the calf.  
(5 marks)
3. Merino is one of sheep breeds raised in Rwanda and is preferred by the farmers for variable purposes. Describe its three phenotypic and two genotypic characteristics.  
(5marks)
4. Suppose you meet a case of heifer that fails to conceive after ten times of mating and the owner asks you to help him on that case.
  - a) How do you name that reproductive problem?  
(1mark)
  - b) What can be the possible causes of such case?  
(4marks)
5. A farmer calls you to treat his cow after 1 week of difficult parturition. The cow shows a yellowish discharge with bad smelling from the vagina and fever.
  - a) Which post-partum case do you think about?  
(1mark)
  - b) Advise the farmer how he will prevent the case for the next time.  
(4marks)
6. State if the following statements are **True** or **False**:  
(5marks)
  - a) In tropical regions, the problem is to protect animals against temperature and excessive sunlight.
  - b) In tropical regions, the room temperature does not depend on the outside temperature of nature, the wall thickness of the material (the insulating wall).
  - c) In tropical regions, all farmers of ruminants cannot attach importance to the environmental temperature.
  - d) In tropical regions, the orientation allows buildings protection against too heavy sun stroke, or against the rain and winds.
  - e) In tropical regions, the farmers cannot control the internal temperature of ruminant stall shelters.

7. Basing on the type of animal production, match the item of breed to the related result of production.

Breed	Type of production
1. Sahiwal zebu	a) Milk, meat and labor
2. Brown Swiss	b) Wool and milk
3. Jersey	c) Meat and milk in tropical region
4. Mountain white sheep	d) Milk especially
5. Merino sheep	e) Wool and meat

8. Below is the formula to prepare the mineral lick for ruminants.

Cement:20%, lime:20%, bone meal 15%, NaCl 45%, you are required to prepare 150 mineral licks of 5 kg for each.

Which quantity of each ingredient will be needed in 150 blocks? **(5marks)**

9. A sheep farmer has got corn whose DCP/FU ratio is 65. He has also a feed cake whose DCP/FU ratio is 350. If he wants to prepare a mixture of these two feeds whose DCP/FU ratio is 150, which proportions of these two feeds should he use for the mixture? (Use Pearson Square Methods).

**(5marks)**

10. A 450 kg beef cow fed on low quality feeds (**60%** moisture, **7%** crude protein). The animal can eat only **1.5 %** of its body weigh as **DM** (Dry Matter).

(a) What is the amount of **DM** the animal can eat?

(b) What is the amount of green feed can it eat?

(c) What is the amount of CP (Crude Protein) can it eat?

**(5marks)**

11. a) List four (4) phases of silage preservation.

**(2marks)**

b) What are the factors affecting the quality of silage?

**(3marks)**

12. Legumes are generally high protein sources and they are fed to ruminants with caution mixed to grasses. Give five (5) examples of legume forages and five (5) of grasses used in ruminant feeding.

**(5marks)**

**Section II: Attempt any Four (4) questions out of Six (6) (40 marks)**

- 13.** Ruminants feeding depends mostly on roughage feed. This type of feeding is based on fodder of the pasture. Describe the techniques used in this feeding regarding their effects on the sustainability of the farming system. **(10marks)**
- 14.** The government of Rwanda is improving the cattle production by introducing the exotic breeds. You are asked to supply the dairy breeds in Nyanza District. If you have to supply the Boss Taurus cattle, what are characteristics will you consider to differentiate them from Boss indicus cattle? **(10marks)**
- 15.** The following are the phenotypic and genotypic characteristics of different ruminant breeds including cattle, goats and sheep. Fill in the gap the corresponding type of breed. **(10marks)**
- a.** The primary color pattern of this breed is black and white. The head is long, narrow and straight with straight thighs and slightly rounded shoulders. The cows are docile and quiet but bulls may be vicious. They are excellent grazers and have an outstanding milk production: .....
- b.** It is a small fine-skinned animal. Its color is various shades of fawn and white; normally has black ring around the eyes. Bulls can be blackish in color. Early maturing and with excellent dairy characteristics. It has a high percentage of butterfat in the milk compared to other breeds: .....
- c.** The skin color is pure brown varying from light to dark pigmentation. The nose and tail are black. They have strong legs. The head is short and large. It is a dairy and meaty breed.....

d. They are animals of an average to superior stature; with a straight back; a rounded hump. The horns are long and fine but there are varieties without horns or with short horns and others with very developed horns. They produce good quality milk and the beef is of relatively good quality. They greatly tolerate heats, parasites and diseases (tick borne diseases), thus can adapt to a wide range of climates: .....

e. The coat color ranges between light grey, red and black. Bulls have darker shoulders, thighs and neck regions. They have a prominent hump, dewlap and drooping ears. They have the fast growth rate which makes them good beef cattle; They are tolerant to excess heat and diseases: .....

16. a) What do you understand by estrus cycle? (2marks)

b) Discuss different phases of estrus cycle. (8marks)

17. Illustrate the Diagram of feed analysis. (10marks)

18. A farmer has 80 liters of molasses used in silage making. We know that 1 liter of molasses is mixed with two to three times of waters.

NB. You must consider kilogram as litre.

a) Determine the solution of molasses used during sprinkle that additive on the chopped grass after making that solution by dissolving it with water. (3marks)

b) Calculate the amount of green forage to be conserved, if four kilograms of molasses is added in 100 kg of green forage? (2marks)

c) Illustrate three (3) types of fermentation that occurs in silage making. (3marks)

d) Explain why enterobacteria are undesirable in silage making. (2marks)





