



THE COPPERBELT UNIVERSITY

KAPASA MAKASA UNIVERSITY

CHINSALI, MUCHINGA PROVINCE

BEEF, DAIRY AND SMALL RUMINANT PRODUCTION - AS 430

END OF YEAR FINAL SESSIONAL EXAMINATION

17TH OCTOBER 2024

INSTRUCTIONS TO CANDIDATES

1. Time allowed is **THREE (3) HOURS**.
2. Remember to write your student identity number (SIN) on the provided answer sheets.
3. All questions carry equal marks (**20 Marks**).
4. Question one is **COMPULSORY**.
5. Attempt a total of **FIVE** questions.

CELLPHONES AND OTHER RELATED GAGETS ARE NOT ALLOWED IN THE EXAMINATION ROOM

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QUESTION ONE

1.
 - A. State four (4) Characteristics of an ideal dairy cow. (4 marks)
 - B. State four (4) characteristics of beef cattle (4 marks)
 - C. Explain four features that helps *Bos indicus* cattle to adapt to their environment. (4 marks)
 - D. Discuss the management of kids/ lambs with emphasis on feeding, weaning, and routine practices. (8 marks)

QUESTION TWO

2.
 - A. Describe milk synthesis including hormones involved in milk let down and milk hold up. (10 marks)
 - B. Outline the methods of milk treatment on a dairy farm. (10 marks)

QUESTION THREE

3.
 - A. What is calving? Give any three (3) signs of calving. (4 marks)
 - B. Describe the caring new born calf to weaning stage (12 marks)
 - C. What is drying off? And give three (3) reasons why it is important. (4 marks)

QUESTION FOUR

4.
 - A. Discuss on Summer Breeding Season in beef production and state 3 advantages and disadvantages. (12 marks)
 - B. Outline the Stages in the Beef Production Cycle (the life history of Beef Cattle). (8 marks)

QUESTION FIVE

5.
 - A. The intensive beef production system requires that the cattle are kept in confinement and high-quality feed. Discuss ranching and finishing Steers on concentrates in the feedlot under intensive system. (12 marks)
 - B. Explain the Nutritive Value of the Zambian Veldt (Range) and the need for supplementation. (8 marks)

QUESTION SIX

6.

A. Discuss how and why feeding Urea and poultry manure is important in ruminant diets.

(12 marks)

B. Explain the feeding management of cows before gestation, before calving and during lactation.

(8 marks)

QUESTION SEVEN

7.

A. Write down the points to consider when selecting a ram for breeding. **(6 marks)**

B. Outline the importance of weight estimation in sheep and goats. **(6 marks)**

C. Give four signs of heat in Does. **(4 marks)**

D. Write on the preparing the doe for kidding/lambing. **(4 marks)**

END OF EXAMINATION, BEST WISHES.



**THE COPPERBELT UNIVERSITY
KAPASA MAKASA UNIVERSITY
CHINSALI, MUCHINGA PROVINCE
PRINCIPLES OF GAME RANCHING AND APICULTURE – AS 461
END OF YEAR FINAL SESSIONAL EXAMINATION**

23RD OCTOBER 2024

INSTRUCTIONS TO CANDIDATES

1. Time allowed is **THREE (3) HOURS**
2. Remember to write your student identity number (SIN) on the provided answer sheets
3. All questions carry equal marks (**20 Marks**)
4. Question one is **COMPULSORY**
5. Attempt a total of **FIVE** questions (**TWO** from each section plus the compulsory question)
6. **ANSWER PART A OF QUESTION ONE AND SECTION B USING THE SAME ANSWER BOOKLET**
7. **ANSWER PART B OF QUESTION ONE AND SECTION C USING THE SAME ANSWER BOOKLET BUT SEPARATE FROM THE ONE USE IN INSTRUCTION 6.**

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SECTION A (COMPULSORY QUESTION)

QUESTION ONE. (PLEASE USE DIFFERENT ANSWER BOOKLETS FOR PART A AND B)

1.

- i. Having been appointed as an Apiary Manager at Kapasa Makasa University;
 - i. Illustrate how you would carry out a colony multiplication/queen raising programme in order to increase the population of bees **(3 marks)**
 - ii. Discuss the importance of bee breeding in apiculture industry? **(5 marks)**
 - iii. Honey bees are social insects and the basic requirement of sociality is effective communication. What are the basic modes of communication in honey bees?
(2 marks)
- ii. Game Ranching in Zambia has the potential for significant growth and development, especially in light of contemporary trends and indicators. The current challenges of disease outbreak such as foot and mouth being faced by the livestock sector has opened another window of opportunity for Zambians to turn to Game Ranching as an appropriate alternative option to livestock farming. Discuss the two categories of Game Ranching found in Zambia and their potential benefits. **(10 marks)**

SECTION B.

PLEASE CHOOSE ANY TWO QUESTIONS FROM THIS SECTION AND ALL QUESTIONS CARRY EQUAL MARKS (20 MARKS).

QUESTION TWO

2. Discuss the relationship between colony multiplication and queen raising **(20 marks)**

QUESTION THREE

3. Outline in brief how you would go about setting up an apicultural out-grower scheme in Chama district of Muchinga Province of Zambia **(20 marks)**

QUESTION FOUR

4. Mr Kambikambi, a farmer in Mukunashi settlement in Kasempa District wants to expand his production of honey and wax on his piece of land whose dimensions is 150m in length and 100m width. He has been spacing his hives at 10m apart. Mr Kambikambi now wants to reduce this spacing to 5m apart.
- i. How many hives does he have when the spacing is 10m apart? **(2 marks)**
 - ii. If he reduces the spacing to 5m apart, how many hives will his piece of land accommodate? **(2 marks)**
 - iii. In order to maintain his productivity with the new spacing, what measures should he take? **(6 marks)**
 - iv. What are the three parameters that determine the quality of honey? **(6 marks)**
 - v. Apiculture is a sector that can contribute to the development of Zambia though its value in the country has not been realized. Mention the four serious measures the Zambian government should undertake to promote this industry? **(4 marks)**

SECTION C

PLEASE CHOOSE ANY TWO QUESTIONS FROM THIS SECTION AND ALL QUESTIONS CARRY EQUAL MARKS (20 MARKS).

QUESTION FIVE

5. Ecology is the scientific study of the interactions that determine the distribution and abundance of organisms. As a manager of a game ranch, discuss the factors that affect distribution and abundance of organisms in a game ranch ecosystem. **(20 marks)**

QUESTION SIX

6. Animal production from domestic stock is facing tremendous challenges of disease out breaks and fisheries resources have been depleted in many water bodies. As a consequence of this, increasing human populations may face declining protein supply from domesticated livestock and fisheries, which are supposed to be the main source of protein. To mitigate the anticipated

protein deficit, and also for the purpose of empowering indigenous Zambians to participate in the establishment and management of Private Wildlife Estate, an investor from United Kingdom would like to partner with you, in the investment of a Game Ranch on a piece of land of about 100 hectares in a semi-arid area, where different species of antelopes will be kept for the purpose of processing and marketing wildlife products for both local market and exporting to other countries. Your partner is now seeking to know from you, the process involved in the establishment of Game Ranch in Zambia. Discuss. **(20 marks)**

QUESTION SEVEN

7. The costs associated with game ranching can vary significantly based on location, scale, and the specific goals of the operation. Thorough business plans and financial analyses are essential for potential investors to understand the full scope of both capital and running costs involved in the game ranching investments. Discuss. **(20 marks)**

END OF THE EXAMINATION. BEST WISHES.



THE COPPERBELT UNIVERSITY
KAPASA MAKASA UNIVERSITY
CHINSALI, MUCHINGA PROVINCE
FARM MANAGEMENT AND AGRICULTURAL EXTENSION - AS 440
END OF YEAR FINAL SESSIONAL EXAMINATION

01ST NOVEMBER 2024

INSTRUCTIONS TO CANDIDATES

1. Time allowed is **THREE (3) HOURS**
2. Remember to write your student identity number (SIN) on the provided answer sheets
3. All questions carry equal marks (**20 Marks**)
4. Question one is **COMPULSORY**
5. Attempt a total of **FIVE** questions (**TWO** from each section plus the compulsory question)
6. **ANSWER PART A OF QUESTION ONE AND SECTION B USING THE SAME ANSWER BOOKLET**
7. **ANSWER PART B OF QUESTION ONE AND SECTION C USING THE SAME ANSWER BOOKLET BUT SEPARATE FROM THE ONE USE IN INSTRUCTION 6.**

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SECTION A (COMPULSORY)

QUESTION ONE. (PLEASE USE DIFFERENT ANSWER BOOKLETS FOR PART A AND B)

1.

- A. The balance sheet helps to measure the financial strength of the business. Given the information from the balance sheet as follows:

Total Fixed Assets	K 42,400
Total Liabilities	K 28,420
Owners' equity	K 31,830
Current Assets	K 8,650
Current Liabilities	K 7,220
Intermediate Assets	K 9,200
Intermediate Liabilities	K 3,200

- i. Determine the solvency position of this business **(5 marks)**
- ii. Determine the liquidity position of the Business **(5 marks)**
- B. Discuss Edgar Dale's Cone of Experience **(10 marks)**

SECTION B

PLEASE CHOOSE ANY TWO QUESTIONS FROM THIS SECTION AND ALL QUESTIONS CARRY EQUAL MARKS (20 MARKS).

QUESTION TWO

2. Discuss the four functions of management and relating how the functions can be applied in a farm business. **(20 marks)**

QUESTION THREE

3. Farming business is associated by some various forms of risks and uncertainty which you need to have in mind as you are doing your planning for the success of the business.
- A. Define Risk and Uncertainty. **(4 marks)**

- B. Define linear programming and state the assumptions that are associated with linear programming. **(8 marks)**
- C. How can a farmer mitigate against the mentioned risks? **(8 marks)**

QUESTION FOUR

4. Imagine you are considering an additional enterprise on your farm and after conducting research you establish that the new investment will have the following cash flow in the next 5 years.

Year 1	- 138,000
Year 2	- 250,000
Year 3	- 350,000
Year 4	- 500,000
Year 5	- 450,000

Using the Net Present Value method determine what will be your decision of this new enterprise on your farm. (The initial capital required is K 800,000 and the interest rate is 8%). **(20 marks)**

SECTION C

PLEASE CHOOSE ANY TWO QUESTIONS FROM THIS SECTION AND ALL QUESTIONS CARRY EQUAL MARKS (20 MARKS).

QUESTION FIVE

- 5.
- A. Discuss various factors that should be considered for Selection of Extension Teaching Methods **(10 marks)**
- B. In details, describe different types of leadership styles. Further, deduce their merits and demerits. **(10 Marks)**

QUESTION SIX

- 6.
- A. Write few notes on the following
- i. Philosophy of extension **(2 Marks)**

- ii. Extension Education (2 Marks)
- iii. Ethnocentrism (2 Marks)
- iv. Heterophily (2 Marks)

- B. Extension work world over is based on some working principles and the knowledge of these principles is necessary for the extension personnel. Explain the various principles of extension as they relate to extension education. (12 marks)

QUESTION SEVEN

7.

- A. In extension and innovation transfer there is a common and important proverb "*The best way to peoples' heart is through their stomach, but the best way to their brain is through their eyes and ears*". In details, explain the meaning of this proverb. (6 marks)
- B. In detail, discuss the elements of diffusion. (14 marks)

END OF THE EXAMINATION, BEST WISHES.



THE COPPERBELT UNIVERSITY

KAPASA MAKASA UNIVERSITY

CHINSALI, MUCHINGA PROVINCE

LIVESTOCK ECONOMICS AND ENTREPRENEURSHIP – AS 450

END OF YEAR FINAL SESSIONAL EXAMINATION

15TH OCTOBER 2024

INSTRUCTIONS TO CANDIDATES

1. Time allowed is **THREE (3) HOURS**
2. Remember to write your student identity number (SIN) on the provided answer sheets
3. All questions carry equal marks (**20 Marks**)
4. Question one is **COMPULSORY**
5. Attempt a total of **FIVE** questions (TWO from each section plus the compulsory question)
6. **ANSWER PART A OF QUESTION ONE AND SECTION B USING THE SAME ANSWER BOOKLET**
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SECTION A (COMPULSORY)

QUESTION ONE. (PLEASE USE DIFFERENT ANSWER BOOKLETS FOR PART A AND B)

1.

- A. The Rochdale Co-operative Principles form the basic philosophical foundation which guides the development and operation of co-operative societies all over the world. Prepare a write up on these principles since you will have to include them in your draft Business Plan for your new cooperative. **(10 marks)**

- B. Given the production function of beef production is given by

$$Y = 18X_1 - X_1^2 + 14X_2 - X_2^2$$

- i. Calculate the combination of the two inputs hay and forage that will maximize an enterprise profit **(5 marks)**
- ii. Calculate the yield of beef in Kgs at profit maximization **(5 marks)**

SECTION B

PLEASE CHOOSE ANY TWO QUESTIONS FROM THIS SECTION AND ALL QUESTIONS CARRY EQUAL MARKS (20 MARKS).

QUESTION TWO

2. "Whereas creativity and innovation are the citadel of entrepreneurship and lies at the heart of blue-chip companies, it is not without difficulties and challenges". Discuss in detail what could be done to overcome the challenges before crafting a business plan to launch the enterprise. **(20 marks)**

QUESTION THREE

3. Kapasa Musonda is having challenges in selling her Japanese Quails on the local market. She has been advised to visit the Zambia Development Agency (ZDA) for business advisory services as she is considering entering the export market for her Japanese Quails.
- A. Discuss the role of ZDA in promoting entrepreneurs with regards to the export market. **(10 marks)**
- B. How would Kapasa Musonda be assisted by the Citizens economic empowerment Commission (CEEC) in her intentions using empowerment pillar number four. **(5 marks)**

- C. Discuss why it would be important for Kapasa Musonda to draft a business plan before entering the export market. **(5 marks)**

QUESTION FOUR

4. Constituency Development Fund (CDF) is a government budget allocation mechanism that channels a specific portion of the national budget to the constituencies to finance development projects such as school facilities, health clinics and water supply systems and entrepreneurial development.
- A. Discuss the challenges of using CDF to promote entrepreneurial activities. **(10 marks)**
- B. Discuss the concept of product life cycle management. **(5 marks)**
- C. Explain any two of the four areas that financial management covers in entrepreneurship. **(5 marks)**

SECTION C

PLEASE CHOOSE ANY TWO QUESTIONS FROM THIS SECTION AND ALL QUESTIONS CARRY EQUAL MARKS (20 MARKS).

QUESTION FIVE

5. Using a well labeled diagram show and explain how the equilibrium is restored in the long run if the demand for eggs goes up in the market, ensure to show both scenarios at an individual farm level and the market. **(20 marks)**

QUESTION SIX

6. A. Given a cost function of a classical production function as follows;

$$TC = 100 + 6Y - 0.4Y^2 + 0.02Y^3,$$

Compute the following:

- i. AFC **(3 marks)**
- ii. AVC **(3marks)**
- iii. MC **(3 marks)**
- iv. Calculate the output when the AVC is at its minimum **(3 marks)**
- B. Discuss the 4 assumptions of a perfect competitive Market **(8 Marks)**

QUESTION SEVEN

7.

A. ANK Farms is engaged in the production of tomatoes and pock, using the product-product relationship explain how the profit can be maximized on the farm. *Hint: use a diagram.*

(15 marks)

B. If ANK Farms want to introduce a third enterprise on the farm say broiler chicken production state the equi- marginal principle that will maximize the net farm income.

(5 marks)

END OF THE EXAMINATION. BEST WISHES



The Copperbelt University
Kapasa Makasa University Campus
Department of Agriculture and Aquatic Sciences

SESSIONAL EXAMINATIONS 2024

COURSE CODE: AS 421

COURSE NAME: APPLIED ANIMAL REPRODUCTION

TIME ALLOWED: THREE (3) HOURS

DATE: 4th NOVEMBER 2024

TIME: 09:00 HRS

INSTRUCTIONS: 1. Answer the COMPULSORY QUESTION ONE
2. Answer any other four questions

Question One (COMPULSORY QUESTION)

a) A farmer has lamented to you that his prize bull, which has been a marvel in the surrounding farming community for its superiority in terms of traceable traits is suddenly losing the motivation to mate with cows/heifers that are exhibiting obvious signs of heat. Offer an explanation to the farmer about the possible reasons for observations he has made.

(10 marks)

b) How can the farmer ensure that the superior attributes of the bull are preserved for a long time to come even beyond the animal's life?

(10 marks)

Question Two

a) It is generally known that different animal species on the farm have different types of penises. Give a detailed account of this statement.

(10 marks)

b) Give at least five methods by which a breeding bull can be removed from the production line and brought back five years later without necessarily slaughtering it.

(10 marks)

Question Three

As an observer at the proceedings of weekly meeting for the Mulakupikwa Young Farmers Club in Chinsali, you notice that there are different opinions being offered about the pros and cons of artificial insemination in livestock production. What will be your expert contribution to this gathering on this rather intriguing topic?

(20 marks)

Question Four

There are different ways in which breeding cows on the farm can have their oestrous cycles occurring at the same time.

a) Explain with three clear examples on how this is possible.

(15 marks)

b) What are the advantages of this activity?

(5 marks)

Question Five

Cryptorchidism is a condition in the male reproductive system that has dire consequences on the economics of running a successful livestock enterprise. Discuss. *(20 marks)*

Question Six

Give a detailed explanation the ovarian activity that leads to the incidence of cystic ovaries among breeding cows on the farm. *(20 marks)*

Question Seven

The introduction of beef breed improvement programmes where superior traits can be introduced in the local gene pools to improve performance and productivity has been high on the agenda for the department of livestock production. Discuss the considerations to be made when introducing superior traits in local gene pool. *(20 marks)*

END OF THE EXAMINATION – ALL THE BEST



The Copperbelt University

Kapasa Makasa University Campus

Department of Agriculture and Aquatic Sciences

SESSIONAL EXAMINATIONS 2024

COURSE CODE: AS 411

COURSE NAME: MANAGEMENT OF ANIMAL PRODUCTS AND BY-PRODUCTS

TIME ALLOWED: THREE (3) HOURS

DATE: 28th OCTOBER 2024

TIME: 09:00 HRS

INSTRUCTIONS: 1. Answer the COMPULSORY QUESTION ONE

2. Answer any other four questions

SECTION A (COMPULSORY QUESTION)

Question One

a) Discuss how photo-period is an important consideration when it comes to egg production.

(5 marks)

b) A child has been tasked to observe the laying period of a point-of-lay pullet by counting the number of eggs collected on daily basis until the number of eggs stops increasing. He reports to the father that he has collected 20 eggs with the last collection being two days ago at 16hrs. If today is 28th October 2024, work out the first time the pullet laid an egg in terms of date and time assuming that the pullet had a lag period of 30 minutes between egg drop and the next ovulation.

(15 marks)

Question Two

Explain the importance of the following terms in dairy production

a) Galactopoiesis

(5 marks)

b) Steaming up

(5 marks)

c) Challenge feeding

(5 marks)

d) Standardisation

(5 marks)

Question Three

The Meat Producers Association of Muchinga Province is holding a sensitization seminar whose theme is "Quality Meat for the Consumer". As a consultant, you have been requested to present a paper on ante-mortem handling of animals and post-mortem handling of carcasses and their effect on water holding capacity of meat. Give a detailed outline of your presentation.

(20 marks)

Question Four

- a) Milk ejection in lactating cattle is said to occur as a neuro-endocrine reflex. Give a detailed explanation of this concept. *(5 marks)*
- b) Consumers dictate what type of dairy products a producer or processor will present on the market. Discuss. *(7.5 marks)*
- c) Give a detailed explanation of the factors that affect milk yield *(7.5 marks)*

Question Five

You have been recently employed as a supervisor in charge of the layers' house at a large poultry farm in Dundumwezi district. The Managing Director has asked you to investigate the incidence of cracked egg shells and generally poor egg shell quality that has been observed. What will the contents of your report to the MD which must include remedial measures to be taken to avoid a repeat of the observations made? *(20 marks)*

Question Six

You are attending a food exhibition fair in Shibuyunji district where various types of edibles are on display and the show goers are encouraged to do more than just watch, but to have a taste of the variety of foodstuffs on display. One exhibitor has some boiled meat from both a domesticated pig and a wild bush pig. Account for the differences in flavor as alluded to by the general public that have tasted the two meat types. *(20 marks)*

Question Seven

There is a paradox when it comes to the perception of marbling in meat by different schools of thought. Discuss, *(20 marks)*

END OF THE EXAMINATION - ALL THE BEST



**THE COPPERBELT UNIVERSITY
KAPASA MAKASA UNIVERSITY
CHINSALI, MUCHINGA PROVINCE
ANIMAL HEALTH AND DISEASE PREVENTION – AS 401
END OF YEAR FINAL SESSIONAL EXAMINATION**

OCTOBER 2024

INSTRUCTIONS TO CANDIDATE

1. Time allowed is **THREE (3)** hours,
2. Write your Examination Number in the spaces provide,
3. Read the questions very carefully before attempting to answer,
4. Question one is **COMPULSORY**
5. Attempt a total of **FIVE** questions

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QUESTION ONE

1. Describe how you would conduct both general and physical examination of a beef herd at Mr Kasonde's farm in Ichishi. Kindly fill in the POMR form **(20 Marks)**

QUESTION TWO

2. Discuss the various strategies the Ministry of Livestock and Fisheries Development can employ to combat the continued spread of livestock diseases **(20 Marks)**

QUESTION THREE

3. You must be familiar with Government efforts to eradicate a particular DNEI in Western province through test and slaughter. However, due to limited publicity and stakeholders' concerns, the process is grinding slowly. The disease manifests with high fever (40 ° C), shade seeking and the animal is disinclined to move. Based on the above, kindly state:
 - A. Your tentative (suspected) diagnosis? **(2 Marks)**
 - B. The other ante-mortem signs are you likely to observe? **(6 Marks)**
 - C. The expected PM picture **(6 Marks)**
 - D. The other control measures **(2 Marks)**
 - E. What is the economic importance of the disease? **(4 Marks)**

QUESTION FOUR

4. During your routine extension services as Private practitioner in *Isoka* district, you notice a steer with a tendency to seek shade all the time with some traces of tearing and generalized swelling of lymph nodes. As part of your routine examination, you engage the farmer into a formal conversation who laments about the high cost of acaricides and maintenance of a dip tank. Given this information;
 - A. What is your suspected diagnosis? **(4 Mark)**

- B. Detail other clinical signs associated with your diagnosis in A. (5 Marks)
- C. Detail the expected PM picture (4 Marks)
- D. State how you will manage the case (5 Marks)
- E. Advise the farmers on the control of the disease (2 Marks)

QUESTION FIVE

- 5. Develop a vaccination programme for beef cattle at Golonita farms (20 Marks)

QUESTION SIX

- 6. Given your vast and expanse knowledge in Animal Health and Disease prevention, kindly attempt the following:
 - A. State the objectives of herd health in the feedlot (4 marks)
 - B. Mention the major routes of drug administration in the ox (4 marks)
 - C. Demonstrate how you would prevent the transmission of zoonotic infections from animals to humans in *Shiwangandu* (4 marks)
 - D. Elaborate on the judicious use of drugs in dairy cattle (4 marks)
 - E. Mention the PM signs associated with Tetanus (4 marks)

QUESTION SEVEN

- 7. Discuss the relevant and key strategies the Government of Zambia can undertake to promote livestock production in Zambia. (20 marks)