FACULTY OF NATURAL RESOURCES MANAGEMENT AND AGRICULTURE

DEPARTMENT OF ANIMAL PRODUCTION AND HEALTH

Pig and Poultry Production (LAS 4206)

SEMESTER 2 EXAMINATION

June 2026

Time Allowed:	**3 hours**
Special Requirements:	**None**
Examiner's Name:	**K. Mafunga**

Instructions to Candidates:

1. *The paper consists of six questions, answer **ALL** questions in **Section A** and **ANY TWO** in **Section B**.*
2. *Marks for each question are shown in brackets. Where a question has subdivisions, the marks for each subdivision are given.*
3. *Illustrate your answer, where applicable, with large clearly labelled diagrams.*

MARK ALLOCATION

QUESTION	**MARKS**
SECTION A	**60**
SECTION B	**40**
TOTAL ATTAINABLE MARKS	**100**

This paper consists of four printed pages.

SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION

Question 1

A women-led cooperative in Gwanda District operates a semi-intensive pig enterprise with 25 sows (Large White × Landrace crosses). Pigs are housed in simple brick pens with asbestos roofing. Feed consists mainly of maize grain, maize bran, kitchen waste, and occasional brewer's spent grain.

Over the past year, the cooperative has reported:

- Low litter size (average 8.5 total born)
- High pre-weaning mortality (18%)
- Lactating sows are losing excessive body condition
- Slow growth rates (pigs reaching 90 kg at 7 months)
- Irregular record keeping
- Frequent outbreaks of internal parasites

Feed prices have recently increased by 30%, and maize availability is inconsistent due to drought.

a. Identify and analyse five key production constraints evident in this system. (10 marks)

b. Using principles of pig nutrition and physiology, explain the likely causes of:

   i. Low litter size. (4 marks)

   ii. Excessive sow body condition loss. (4 marks)

c. Interpret how feed price inflation and drought conditions may affect long-term productivity and profitability in this communal system. (6 marks)

d. Propose a practical, low-cost improvement plan suitable for a communal Zimbabwean setting. Your answer must address nutrition, housing, health, and record keeping. (6 marks)

Question 2

A youth-owned free-range poultry enterprise in Kezi keeps 2,000 Lohmann Brown layers under a free-range system. Birds are 40 weeks old.

Recent farm data (last 4 weeks):

Week	Hen-day production (%)	Average egg weight (g)	Feed intake (g/bird/day)	Shell cracks (%)	Mortality (%)
1	88	60	115	4	0.3
2	85	59	110	6	0.5
3	81	58	105	9	0.7
4	78	57	100	12	1.1

Additional observations:

- Birds spend long hours scavenging during hot afternoons.
- Supplementary feed protein level is 15%.
- Water supply is occasionally interrupted.
- No recent vaccination booster for Newcastle disease.
- Egg rejection rates by buyers are increasing.

a. Interpret the production trends shown in the data. (8 marks)

b. Explain the nutritional and environmental factors contributing to declining egg production and shell quality. (8 marks)

c. Discuss the risks associated with the current management system under Zimbabwean free-range conditions. (6 marks)

d. Develop a management recovery strategy that balances profitability and free-range principles. (8 marks)

SECTION B: ANSWER ANY TWO QUESTIONS IN THIS SECTION

Question 3

Discuss feeding strategies for pigs and poultry under drought conditions in Zimbabwe. Your answer should include:

- Alternative feed resources
- Risks of mycotoxins
- Protein supplementation strategies
- Economic considerations (20 marks)

Question 4

Zimbabwean communal farmers often adopt free-range poultry and scavenging pig systems.

a. Compare productivity and disease risk between communal/free-range systems and commercial intensive systems. (10 marks)
b. Evaluate whether intensification is always the best pathway for smallholder farmers. (10 marks)

Question 5

Biosecurity remains a major challenge in Zimbabwean livestock systems.

a. Discuss the biosecurity risks in communal pig or poultry production systems. (10 marks)
b. Outline practical biosecurity improvements for a small-scale pig or poultry enterprise. (10 marks)

END OF QUESTION PAPER

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