

GWANDA STATE UNIVERSITY



FACULTY OF NATURAL RESOURCES MANAGEMENT AND AGRICULTURE

DEPARTMENT OF ANIMAL PRODUCTION AND HEALTH

BACHELOR OF SCIENCE HONOURS DEGREE IN ANIMAL SCIENCE

ANIMAL PHYSIOLOGY (LAS4202)

SECOND SEMESTER FINAL EXAMINATION

APRIL 2024

Time Allowed: 3 hours
Total Marks: 100
Special Requirements: None
Examiner's Name: Dr S. Moyo

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 three printed pages including this one

SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION

Question 1

- a. Differentiate the following:
 - i. Inspirational capacity and functional residual capacity. [3 marks]
 - ii. Homeotherm and poikilotherm. [3 marks]
 - iii. Cold acclimation and cold acclimatization. [3 marks]
- b. Explain the functions of albumin and globulins in hormone transportation. [6 marks]
- c. State five functions of Sertoli cells during spermiogenesis. [5 marks]

Question 2

- a. State the functions of the following categories of white blood cells:
 - i. Lymphocytes; [4 marks]
 - ii. Neutrophils; and [4 marks]
 - iii. Basophils. [2 marks]
- b. Explain the role of the respiratory system in the regulation of blood pH. [4 marks]
- c. Write short notes on the regulation of gastric juice secretions. [6 marks]

Question 3

- a. Write brief notes on the following:
 - i. Galactopoiesis. [2 marks]
 - ii. Importance of milk removal in galactopoiesis. [4 marks]
 - iii. Roles of prolactin in lactogenesis. [5 marks]
- b. How is water reabsorption in the nephron regulated by hormones? [10 marks]

SECTION B. ANSWER ANY TWO QUESTIONS IN THIS SECTION

Question 4

- a) Discuss the hormonal control of the estrous cycle. **[10 marks]**
- b) Discuss the role and impact of growth hormones in maximizing livestock production. **[10 marks]**

Question 5

- a) Describe the mechanisms of action of a named water-soluble hormones at the target organ. **[10 marks]**
- b) Dairy animals are negatively affected by unfamiliar and stressful environment. Discuss. **[10 marks]**

Question 6

Describe the mechanisms of temperature control when an animal is exposed to cold temperature. **[20 marks]**

END OF QUESTION PAPER

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