

**GWANDA STATE UNIVERSITY**



**FACULTY OF NATURAL RESOURCES MANAGEMENT AND AGRICULTURE**

**DEPARTMENT OF ANIMAL SCIENCES**

**BACHELOR OF SCIENCE HONOURS DEGREE IN ANIMAL SCIENCE**

**ANIMAL PHYSIOLOGY (LAS4202)**

**SEMESTER 2 FINAL EXAMINATION**

**JUNE 2023**

**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**

| <b>QUESTION</b>               | <b>MARKS</b> |
|-------------------------------|--------------|
| SECTION A                     | <b>60</b>    |
| SECTION B                     | <b>40</b>    |
| <b>TOTAL ATTAINABLE MARKS</b> | <b>100</b>   |

*This paper consists of three printed pages including this one*

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**SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION**

### Question 1

- a. Differentiate the following:
- i. Endotherm and ectotherm [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. Relate the structure to the functions of the following blood vessels:
- i. Arteries [4 marks]
  - ii. Veins [4 marks]
  - iii. Capillary. [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.
- i. Define the term galactopoiesis. [1 mark]
  - ii. Why is milk removal important in galactopoiesis? [4 marks]
- b. State five roles of prolactin in lactogenesis. [5 marks]
- c. How is water reabsorption in the nephron regulated by hormones? [10 marks]

## SECTION B. ANSWER ANY TWO QUESTIONS IN THIS SECTION

### Question 4

- Discuss the hormonal control of the estrous cycle. [20 marks]

**Question 5**

- a. Describe the mechanisms of action of a named water-soluble hormone at the target organ. **[10 marks]**
- b. Explain the reason for failed milk let down when a dairy animal is exposed to an unfamiliar and stressful environment. **[10 marks]**

**Question 6**

Write notes on mechanisms of temperature control when an animal is exposed to cold temperature. **[20 marks]**

**THE END**

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