



FACULTY OF LIFE SCIENCES  
DEPARTMENT OF ANIMAL SCIENCE

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BACHELOR OF SCIENCE HONOURS DEGREE IN ANIMAL SCIENCE

Anatomy and Physiology of Farm Animals (LAS 1208)

SEMESTER 2 EXAMINATION

August 2021

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   |

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

**Question 1**

- a. Describe the structure and function of the following organelles:
- i) Golgi apparatus [3 marks]
  - ii) Endoplasmic reticulum [3 marks]
  - iii) Mitochondria. [3 marks]
- b. State the general functions of connective tissues? [5 marks]
- c. Write short notes on skeletal adaptation of birds for flight. [6 marks]

**Question 2**

- a. Describe the following classes of bones:
- i. Short bones [2 marks]
  - ii. Irregular bones. [2 marks]
- b. Explain how the bovine mammals regulate temperature in testes. [6 marks]
- c. Draw a well labeled diagram of a mammal long bone. [10 marks]

**Question 3**

- a. Highlight differences during heart (ventricular) diastole and systole. [6 marks]
- b. Relate the structure to the digestive functions of the gizzard. [4 marks]
- c. Highlight the roles of the following organs in homeostasis:
- i. Lungs [2 marks]
  - ii. Liver [2 marks]
  - iii. Kidney. [6 marks]

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

**Question 4**

- a. Describe the process of spermatozoa formation in mammals. [10 marks]
- b. Discuss in detail the role of hormones in spermatogenesis. [10 marks]

**Question 5**

- a. Explain the role of the respiratory system in the regulation of blood pH. [4 marks]
- b. Compare and contrast the anatomy and physiology of the bird and mammal respiratory systems. [16 marks]

**Question 6**

- a. Differentiate the mechanism of action of water-soluble and lipid soluble hormones. [4 marks]
- b. Complete the following table.

| <b>Hormone</b>       | <b>Gland (secretion site)</b> | <b>Function(s)</b> |
|----------------------|-------------------------------|--------------------|
| Luteinizing hormone  | [1 mark]                      | [2 marks]          |
| Testosterone         | [1 mark]                      | [2 marks]          |
| Progesterone         | [1 mark]                      | [2 marks]          |
| Insulin              | [1 mark]                      | [2 marks]          |
| Antidiuretic hormone | [1 mark]                      | [1 mark]           |
| Parathormone         | [1 mark]                      | [1 mark]           |

**END OF QUESTION PAPER**

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