



FACULTY OF LIFE SCIENCES  
DEPARTMENT OF ANIMAL SCIENCE

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BACHELOR OF SCIENCE HONOURS DEGREE IN ANIMAL SCIENCE

Animal Physiology (LAS 4202)

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. Differentiate the following:
- i) Inspiratory capacity and functional residual capacity [2 marks]
  - ii) Inspiratory reserve volume and expiratory reserve volume [2 marks]
  - iii) Homeotherm and poikilotherm [2 marks]
  - iv) Upper critical temperature and lower critical temperature. [2 marks]
- b. What is the role of hormones of pregnancy? [6 marks]
- c. Explain why is the respiratory system of birds regarded to be more efficient than that of mammals? [6 marks]

**Question 2**

- a. State four functions of Sertoli cells during spermiogenesis. [4 marks]
- b. Describe the morphological changes that occur during spermiogenesis. [8 marks]
- c. Describe the process of digestion in the reticulo-rumen. [8 marks]

**Question 3**

- a. Explain how the following affect milk yield in dairy animals:
- a. Milking frequency [2 marks]
  - b. Environmental temperature [2 marks]
  - c. Length of dry period. [2 marks]
- b. Write short notes on the connective tissues that support the mammary gland. [6 marks]
- c. Relate the structure to the functions of the heart. [8 marks]

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

**Question 4**

- a. Outline five homeostatic functions of the urinary system. [5 marks]
- b. Discuss the role of hormones in lactogenesis. [15 marks]

**Question 5**

- a. Using examples, highlight the pros and cons of using synthetic or natural hormones in livestock production. [10 marks]

- b. Describe how recent advances in assisted reproductive technologies positively impact animal production. [10 marks]

**Question 6**

Write notes on mechanisms of temperature control when a homoeothermic animal is exposed to hot temperature environment. [20 marks]

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**END OF QUESTION PAPER**

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