



FACULTY OF LIFE SCIENCES  
DEPARTMENT OF ANIMAL SCIENCE

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BACHELOR OF SCIENCE HONOURS DEGREE IN ANIMAL SCIENCE

Animal Anatomy and Physiology 2 (LAS 2102)

SEMESTER 1 SPECIAL EXAMINATION

February 2022

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 three printed pages including this one.*

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## SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION

### Question 1

a. Define the following levels of organization and give examples:

- i) Cell. [2 marks]
- ii) Tissue. [2 marks]
- iii) Organ. [2 marks]
- iv) Organ system. [2 marks]

b. Relate the anatomy to the functions of the following tissues:

- i) Nervous tissue [2 marks]
- ii) Elastic tissue. [2 marks]

c. Complete the table below.

Hormone	Gland (secretion site)	Function
Luteinizing hormone	[1 mark]	[1 mark]
[1 mark]	Testis	[1 mark]
[1 mark]	Corpus luteum	[1 mark]
[1 mark]	[1 mark]	Reduce blood sugar levels

### Question 2

a. Describe the structure and functions of the following and give an example of each:

- i. Arteries [4 marks]
- ii. Veins [4 marks]

b. Describe the structure and function of the following organelles:

- i. Golgi apparatus [3 marks]
- ii. Endoplasmic reticulum [3 marks]
- iii. Mitochondria. [3 marks]

c. Outline the series of tubes through which air passes from the nose to the alveoli.

[3 marks]

### Question 3

a. Highlight differences during heart (ventricular) diastole and systole. [6 marks]

b. What is the difference in the composition of inhaled and exhaled air? [4 marks]

c. Highlight the roles of the following organs in homeostasis:

- i. Lungs [2 marks]
- ii. Muscle [2 marks]
- iii. Hair [2 marks]
- iv. Liver [2 marks]

v. Kidney.

[2 marks]

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

**Question 4**

- a. Using a table, highlight the differences between bones of the pelvic limb and bones of the pectoral limb. [12 marks]
- b. Discuss the thermo-regulation of testes in bovine bulls. [8 marks]

**Question 5**

- a. Relate the anatomy to the function of the heart. [10 marks]
- b. Describe the regulation of the cardiac cycle. [10 marks]

**Question 6**

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

**END OF QUESTION PAPER**

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