



**NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**FACULTY OF APPLIED SCIENCE**  
**DEPARTMENT OF APPLIED BIOLOGY AND BIOCHEMISTRY**  
**BACHELOR OF SCIENCE HONOURS DEGREE IN APPLIED BIOLOGY AND**  
**BIOCHEMISTRY**  
**ANIMAL PHYSIOLOGY (SBB1206)**

**Main Examination Paper**

**MARCH 2025**

This examination paper consists of 2 pages

Time Allowed : 3 hours  
Total Marks : 100  
Special Requirements : NONE  
Examiner's Name : MS J. B. CHANGE

**INSTRUCTIONS**

1. Answer **Four (4)** questions. Each question carries 25 marks.
2. Where a question contains subdivisions, the mark value for each subdivision is given in brackets.
3. Illustrate your answer where appropriate with large, clearly labelled diagrams.

**MARK ALLOCATION**

<b>QUESTION</b>	<b>MARKS</b>
1.	<b>25</b>
2.	<b>25</b>
3.	<b>25</b>
4.	<b>25</b>
5.	<b>25</b>
6.	<b>25</b>
<b>TOTAL</b>	<b>100</b>

1. With the aid of a diagram, explain the structure and function of the heart.
  
2. (a) Describe the digestion and absorption of a breakfast meal with bread, eggs, bacon and a cup of tea with two teaspoons of sugar sweetened milk. (15 marks)  
  
(b) Briefly describe the hormones that aid and regulate the digestive system in mammals. (10 marks)
  
3. Write short notes on the following hormones:
  - (a) Aldosterone. (4 marks)
  - (b) Adrenaline. (7 marks)
  - (c) Insulin. (7 marks)
  - (d) Glucagon. (7 marks)
  
4. (a) Briefly explain the types of accommodation with regards to the eye. (10 marks)  
  
(b) Describe the mechanism of the pupillary light reflex pathway. (15 marks)
  
5. Write an essay on the various physiological mechanisms by which carbon dioxide is transported from body tissues to the lungs.
  
6. (a) Describe the production of urine in the kidney. (15 marks)  
  
(b) Explain the role of the renin-angiotensin-aldosterone system in osmoregulation. (10 marks)

**END OF EXAMINATION**