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University of Ruhuna- Faculty of Technology

Bachelor of Biosystems Technology

Level 1 (Semester I) Examination, June/July 2025

Academic year 2023/2024

Course Unit: BST1152 Animal Physiology (Theory) Repeat **Duration: 1.5 hours**

Directions to Candidates

- Answer **ONLY** ~~**FOUR (04)**~~ Three 03 questions.
- Use a given booklet for answering the questions.
- Begin each answer on a new page.

1. Respiration is a vital physiological function that maintains gas exchange between the body and the environment.

   I. What are the two primary muscles involved in breathing? **(10 marks)**

   II. Define external and internal respiration. **(20 marks)**

   III. Explain the mechanism of respiration, covering both inhalation and exhalation processes. **(30 marks)**

   IV. Write short notes on **(40 marks)**

      a) Respiratory structures of animals

      b) How smoking affects the respiratory system

2. The excretory system is essential for maintaining homeostasis by eliminating metabolic waste and regulating the composition of bodily fluids.

   I. Name two major nitrogenous excretory products found in animals. Provide examples of animals that excrete each type of nitrogenous waste. **(10 marks)**
   II. Illustrate a labeled diagram of a typical nephron. **(20 marks)**
   III. Describe the process of urine formation. Include the roles of filtration, reabsorption, and secretion. **(30 marks)**
   IV. Write short notes on **(40 marks)**
      a) CKDu in Sri Lanka
      b) Excretory structures of animals

3. The endocrine system is made up of glands and hormones that control important body functions.

   I. Name two major endocrine glands in the human body and give at least one hormone each gland produces. **(10 marks)**
   II. What are negative and positive feedback mechanisms in biological systems. **(20 marks)**
   III. Explain how negative feedback mechanisms help to regulate body temperature. (30 marks)
   IV. Write briefly about how hormones help control body activities like metabolism, and growth. **(40 marks)**

4. The nervous system plays a key role in sending and interpreting signals that coordinate activities throughout the body.

   I. Define grey matter and white matter of the brain. **(10 marks)**
   II. Illustrate a labeled diagram of a typical neuron. **(20 marks)**
   III. Differentiate between the central nervous system (CNS) and the peripheral nervous system (PNS) **(30 marks)**
   IV. Name four main lobes of the human brain and describe one key function of each lobe. **(40 marks)**