The Open University of Sri Lanka
Faculty of Natural Sciences
B.Sc/B. Ed Degree Programme

Department	: Zoology
Name of the Examination	: Final Examination 2024/2025
Academic Year	: 2024/2025
Course Code and Title	: ZYU5307-Mammalian Biology
Level	: 5
Date	: 20.05.2025
Time	: 1.30 p.m. – 3.30 p.m.
Duration	: Two hours

General Instructions to Candidates

1. Read all instructions carefully before answering the questions.
2. This question paper consists of **two (02) pages** and **Six (06) questions**.
3. Answer any **four (04) questions.**
4. The answer for each question should commence on a new page.
5. Use blue or black ink to write your answers.
6. Draw fully labelled diagrams where necessary.
7. Write the numbers of the questions you answered on the front page of the answer script.
8. Clearly write your index number in the answer script.
9. Do not bring in or have in possession unauthorized materials, including mobile phones and other electronic devices, or violate other examination rules.
10. Handover your answer script at the end of the examination.

Answer any four (04) questions.

1. 1.1 Describe the advantages of homeothermy in mammals (20 marks)

   1.2. Describe how mammals maintain their body temperature around 37^0C; (80 marks)
   a) When there is a fall in temperature in the environment
   b) When there is a rise in temperature in the environment

2. 2.1 Describe the estrous cycle in female mammals, focusing on the hormonal influences on its distinct phases. (80 marks)

   2.2 Describe the difference between the estrous and menstrual cycles of mammals (20 marks)

3. Suppose you are a curator of a Natural Science Museum. The following mammalian skulls have been sent to you for accurate identification. Describe the characteristic features you would look for in the skulls for correct identification. (20 marks x 5)

   a. Dog skull
   b. Ant-eater skull
   c. Loris skull
   d. Horse skull
   e. Dugong skull

4. Discuss the adaptive radiation in the forelimb of a horse, bat, whale and mole for cursorial (fast running), volant (flying), swimming, and fossorial (digging and burrowing) locomotion, respectively. (100 marks)

5. Compare and contrast between the (50 marks x 2)
   a) Foregut and hindgut fermentation in mammals
   b) Megachiroptera and Microchiroptera

4. Write short notes on any two (02) of the following (50 marks x 2)
   a) Reptilian characteristics in Monotremes
   b) Skin glands of mammals
   d) Ecosystem services of mammals

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