



**RAJARATA UNIVERSITY OF SRI LANKA**  
**FACULTY OF APPLIED SCIENCES**

**B.Sc. (General) Degree in Applied Sciences**  
**First Year - Semester II Examination – February/March 2019**

**ZOO 1303 – VERTEBRATE DIVERSITY**

**Time: Three (03) hours**

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**Answer SIX (06) questions only.**

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1. a) Although *Ciona* is a bag like animal, explain why it is classified under Phylum Chordata. (40 marks)  
b) Using a suitable diagram, describe the structure and feeding behavior of *Ciona*. (60 marks)
2. a) Describe the characteristic features of *Petromyzon marinus* with special reference to its parasitic mode of life. (40 marks)  
b) Explain how *Petromyzon marinus* differs from a typical bony fish. (30 marks)  
c) Write a concise account on the scale types in fish. (30 marks)
3. a) Describe the general mode of reproduction in amphibians and compare how it differs among the different extant amphibians groups. (75 marks)  
b) Discuss how global climatic changes could affect reproduction in modern amphibians. (25 marks)
4. a) "Reptiles are less dependent on water compared to amphibians. This was mostly due to key innovations in their reproduction and water conservation strategies." Discuss this statement. (75 marks)  
b) Ovoviviparity is a reproductive strategy that has evolved multiple times independently in squamate reptiles indicating an adaptive advantage. Describe what ovoviviparity is and how it could be advantageous for squamate reptiles. (25 marks)

5. Citing suitable examples discuss the specialization of different anatomical systems of a bird for an aerial mode of life. **(100 marks)**
6. Write short notes on the following.
- a) Different types of mating systems among birds
  - b) Feather types and its functions
  - c) Feeding adaptations
  - d) External characteristics of birds **(25 marks each)**
7. a) Briefly describe the key events in the evolution of mammals. **(30 marks)**
- b) Succinctly describe how mammal in general differ from reptiles in their physiology and behavior drawing special reference to mammalian adaptations that facilitate their mode of life. **(40 marks)**
- c) Write a concise account on morphological, physiological and behavioral aspects of the members of the Order Monotremata. **(30 marks)**

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