



RAJARATA UNIVERSITY OF SRI LANKA
FACULTY OF APPLIED SCIENCES

Bachelor of Science in Applied Sciences
Third Year – Semester I Examination – July/August 2023

BDC 3301 – CONCEPTS OF BIODIVERSITY CONSERVATION

Time: Three (03) hours

Answer ALL questions.

1. The following questions (a to g) are based on the field visit to Pinnawala Zoological Gardens, Dehiwala Zoological Gardens, the Elephant Orphanage and the Peradeniya Royal Botanical Gardens.
 - a) State the **six (06)** important factors to maintaining ex situ conservation centers with special reference to the Pinnawala Zoological Garden and the Elephant Orphanage. **(12 marks)**
 - b) Provide a list of key elements (**five 05 for each**) that attract visitors to the Pinnawala Elephant Orphanage and the Pinnawala Zoological Garden. **(20 marks)**
 - c) The approach used in the design of animal exhibits at the Dehiwala Zoological Garden differ from Pinnawala Zoological Garden. Mention **six (06)** design related features unique to Pinnawala using suitable examples. **(18 marks)**
 - d) Outline **five (05)** major constraints for maintaining elephants in the Elephant Orphanage in future. **(10 marks)**
 - e) What are the different colors used to mark the tree categories in the Botanical Garden? Give **two (02)** examples of each. **(15 marks)**
 - f) List **four (04)** rediscovered species recorded in the Botanical garden. **(08 marks)**
 - g) “Ex situ centers are considered as future savings for biodiversity conservation”. Citing suitable examples from the Botanical Garden discuss briefly the above statement. **(17 marks)**
2.
 - a) What are the major predictions of island biogeography theory? **(20 marks)**
 - b) How can island biogeography theory be used in conservation strategies for mitigating species loss in fragmented habitats? **(40 marks)**
 - c) Provide a brief description of “corridor design and habitat connectivity principles” and explain their applicability in enhancing conservation efforts. **(40 marks)**

3. Based on specific examples:

- a) Describe how protected areas can be effectively utilized for conservation education. (40 marks)
- b) Explain the strategies used to carry out educational programs within protected areas. (60 marks)

4. Discuss using examples, the statement 'Biodiversity of a country or region provides its people with numerous benefits.'

(100 marks)

5. "To what extent does the *focal species concept* serve as a valuable component in understanding and assessing species diversity"? Critically evaluate this statement, substantiating your analysis with appropriate examples.

(100 marks)

6. Write short notes on the following;

- a) importance of the RAMSAR Convention for biodiversity conservation.
- b) different categories of protected areas.
- c) IUCN categories of threats.
- d) Global Biodiversity hotspots.

(25 marks x4)

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