UNIVERSITI SAINS MALAYSIA

First Semester Examination
Academic Session 2004/2005

October 2004

BSF 101//3 - Biodiversity in the Tropics

Duration: 3 hours

Please ensure that this examination paper contains FOUR printed pages.

Answer <u>FIVE</u> out of <u>SIX</u> questions, in English.

Each question carries 20 marks.

1. (a) Discuss the adaptive changes that plants had to undergo in the course of their evolution from an aquatic to a terrestrial way of life on earth.

(12 marks)

(b) For each of the plant families listed below, give two examples of common Malaysian fruits. In each cases, state either their common or scientific names.

(i) Anacardiaceae

(ii) Moraceae

(iii) Rutaceae

(iv) Sapindaceae

(8 marks)

2. (a) With the aid of labeled diagrams describe the isomorphic alternation of generation in algae.

(8 marks)

(b) Write short notes on:

(i) Major characters used in the classification of Bryophytes.

(6 marks)

(ii) An example of Malaysian epiphytic fern (Pteridophyta).

(6 marks)

3. (a) Give four examples of Malaysian plant species that have medicinal properties. For each plant, state the type of illneses that they are used to treat.

(8 marks)

(b) Discuss the differences between monocotyledon and dicotyledon plants.

(12 marks)

4. (a) Why are coastal, inland wetlands and coral reefs such important ecosystems?

(10 marks)

(b) Why have so many of these vital ecosystems been destroyed by human activities?

(10 marks)

5. (a) List five differences between vertebrates and invertebrates.

(5 marks)

(b) Describe the ways in which amphibians are adapted to life on land. In what ways are amphibians still restricted to a watery or moist environment?

(10 marks)

(c) There are nine phyla of Malaysian animals. Name **five** of them and provide an example of a species (in their scientific names) for each.

(5 marks)

6. Give short descriptions for all below:

    (a) Five differences between prokaryote and eukaryote

(5 marks)

    (b) Ecological importance of lichen and mycorhiza.

(2 marks)

    (c) Definition of keystone and indicator species .

(2 marks)

    (d) Three distinguishing characteristics of mollusca and arthropoda.

(3 marks)

    (e) Definition of endangered and threatened species.

(2 marks)

    (f) The differences between Convention on International Trade of Endangered Species (CITES), the Red Data Book and Convention on Biological Diversity (CBD).

(3 marks)

    (g) The scientific name, habitat and conservation status of a tropical animal of your choice.

(3 marks)

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