

國立彰化師範大學 102 學年度碩士班招生考試試題

系所：生物學系

組別：甲組

科目：演化生態學

☆☆請在答案紙上作答☆☆

共 2 頁，第 1 頁

簡答題

- 一、何謂 Lichens？請說明其中組成生物各自的功能為何？（10%）
- 二、何謂 metapopulation？請用四種狀況定義之。（10%）
- 三、請簡述引起 Population extinction 的原因？（10%）
- 四、請使用 Hierarchical Framework 的概念說明 Population？（10%）
- 五、請以圖簡述 Survivorship curves 的各種類型？並各舉例一代表物種。（10%）
- 六、達爾文(Charles Robert Darwin)乘著小獵犬號在 1835 年 9 月 15 日造訪加拉巴哥群島(Galápagos Islands)，花了五星期在這些小島上探險、觀察、記錄和蒐集物種，因此該群島被視為物種起源演化的實驗室。請翻譯下段有關於加拉巴哥群島的文章片段，地名可以不翻譯，但科學專有名詞需要翻譯出來。（15%）

Darwin's use of his field notebooks during the voyage is explained in the general introduction to the notebooks. The one he used on the Galapagos is labelled 'Galapagos. Otaheite Lima'. It contains entries he made between January and November 1835 when he was in Chile, Peru, the Galapagos and Tahiti. The Galapagos entries, which comprise about one quarter of the book, consist of one sequence of 34 pages filled in consecutively while Darwin was in the Galapagos (pp. 18b to 51b), and some brief notes on four other pages (inside front cover, inside back cover, p. 29a and p. 31a). The notes on the inside back cover and page 29a refer to the Beagle's sailing between Albemarle and Narborough (now Fernandina) on 29 and 30 September and its arrival at Tagus Cove on Albemarle (known to Darwin as Blonde Cove) on the 30th. The note on the inside front cover gives the generic name of the marine and terrestrial iguanas of the Galapagos which Darwin found in the account of the iguanas in Admiral George Byron's Voyage of HMS Blonde (Byron 1826). The note on page 31a which refers to the specimens of trachyte which Darwin collected during his days on James (p. 47b) may have been inserted some time after the Beagle's departure from the Galapagos.

(文章取自 <http://darwin-online.org.uk>)

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七、請闡述 extinction 和 speciation 之間的關係。(10%)

八、請闡述 Hox 基因 (Hox genes) 同源基因 (英語: homeotic genes) 或同源異型基因，對於動物演化的影響。(10%)

九、請說明在下列的系統發生樹圖 (phylogenetic tree)，A、B、C 三群中，何者是 monophyletic group(2%)，何者是 paraphyletic group(2%)，何者是 polyphyletic group(2%)？並請簡述 monophyletic group(3%)、paraphyletic group(3%)、polyphyletic group(3%)個別的定義。

