

題號： 388 國立臺灣大學111學年度碩士班招生考試試題
科目：生態與演化生物學
節次： 7

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Define or explain the following terms in either Chinese or English. Please be concise. 4 points each, 48 points in total

名詞解釋，回答務必精確且簡明扼要，以中文或英文作答，只翻譯名詞不給分；每題4分，共60分

1. Symbiont
2. Ecosystem services
3. Biomass
4. Character displacement
5. Synapomorphy
6. Reinforcement
7. Lek
8. Hybrid zone
9. Chronospecies
10. Ecotone
11. Homoplasy
12. Metabarcoding
13. Founder effect
14. Balancing selection
15. Incomplete lineage sorting

Short-answer questions. Answer these questions in either Chinese or English. 5 points each, 10 points in total

簡答題，以中文或英文作答；每題5分，共10分

16. Why do we expect the virulence of emergent infectious diseases, such as COVID-19, to decrease overtime?
17. In the 1950s, the evolutionary geneticists C. H. Waddington discovered a phenomenon called "genetic assimilation" through a series of selection experiments. Describe this phenomenon and explain how it may happen.

Essay questions. Answer these questions in either Chinese or English – make your answer as comprehensive as possible. 10 points each, 30 points in total

申論題，以中文或英文作答；每題10分，共30分

18. MacArthur and Wilson introduced the concept of r - and K -selection in 1967. r and K are derived from the equation that describes logistic population growth $\frac{dN}{dt} = rN \frac{(K-N)}{K}$. They represent two generalized life history strategies. Please summarize the characteristics of r - and K -selection strategies and discuss their respective roles in ecological succession following a wipe-out disaster event such as volcanic eruption.
19. What is algal reef (藻礁)? Please outline the disagreements among the environmental NGOs about the 2021 referendum regarding the Guantang LNG Terminal (中油觀塘液化天然氣接收站) and discuss your opinions.
20. If you were admitted to the Master degree program of the Department of Life Science at National Taiwan University, what is the research topic you would like to pursue? Please identify the faculty member(s) of the Department of Life Science, NTU who can potentially serve as your thesis advisor. The purpose of this question is to see whether you have done your homework about this department before you register for the entrance exam. Please be as specific as possible.

試題隨卷繳回