

一、 名詞解釋 (各 5 分，共 45 分)

1. Fitness
2. Functional response
3. r & k selection
4. Biogeochemical cycle
5. Phenology
6. Abiotic & biotic factor
7. Age distribution
8. Carrying capacity
9. Sympatric

二、 簡答題 (共 55 分)

1. Please give the logistic equation for describing population growth and explain the meaning of each parameter. Please explain how the realized per capita growth rate will change with increasing population abundance in the logistic equation. (10%)
2. What is intermediate disturbance hypothesis (IDH)? How is this hypothesis important for species coexistence? In addition to IDH, please list one more mechanism that helps to maintain species diversity in a community. (15%)
3. 地景與地景生態學是近年受歡迎的生態學研究領域。試說明地景結構包含哪些?哪些效應可能影響地景結構?以及地景結構會有生態過程有何種影響? (15%)  
Research on landscape and landscape ecology are increasingly popular in recent years. Please explain what does landscape structure include? What effects may affect the landscape structure? And what kinds of processes may be influenced by the landscape structure?
4. 試說明現今生態系面臨的多種威脅，以及其分別對海洋生態系與漁業產生的影響。(15%)  
Please explain current threats to ecosystems and their impacts on both marine ecosystems and fisheries.