系所組別： 生命科學系乙組

考試科目： 生態學

※ 考生請注意：本試題 □可 ☑不可 使用計算機

所有題目為簡答題，請勿長篇申論；答案中之專有名詞請附英文

1. Define "the Law of Tolerance" in ecology (6%)

2. List three major possible factors that can cause Diversity Gradients (6%)

3. Distinguish the difference of "r" in a Geometric and a Logistic population growth model (10%)

4. Tree growth and net primary production usually decline with the age of a forest. Discuss three major factors that may be responsible for this pattern (12%)

5. What is a "Niche" of a species? (10%)

6. Based on the currently available best information, the degree of being threatened of each following taxonomic groups, in terms of the number of threatened species relative to the number of species evaluated, by order (from the most to the least) are:

(a) Vertebrates, plants, invertebrates True or false?

(b) Reptiles, fishes, amphibians, mammals, birds True or false? (4%)

If false, what would be the correct order in your judgment?

7. What are the two most focused concepts in Non-equilibrium ecological models to explain community dynamics? (8%)

8. What is "Apparent Competition"? (6%)

9. What is "the Tens Rule"? (5%)

10. Any species of animals may or may not live in groups for different reasons. Using Cost-Benefit Analysis, list three possible benefits and three possible costs of living in groups? (12%)

(背面仍有題目,請繼續作答)

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11. Define "the Law of Conservation of Mass", and discuss how it is related to ecology (10%)

12. The major difference between Keystone Species and Dominant Species (5%)

13. What is the difference between Plant Stress Hypothesis and Plant Vigor Hypothesis in explaining the preference of herbivores feeding on plants (6%)