

編號： 443 系所：生理學研究所甲組、乙組

科目：生命科學及技術

本試題是否可以使用計算機：  可使用，  不可使用 (請命題老師勾選)

1. Define the following biological terms (merely translate into Chinese is discouraged): (20%)
  - a) acquired immunodeficiency syndrome (AIDS)
  - b) antigen-presenting cell
  - c) apoptosis
  - d) phenotypic polymorphism
  - e) proteomics
2. Scientists propose that cells of an organism differ in structure and function not because they contain different genes but because they express different portions of a common genome. Please provide two pieces of experimental evidence to support this idea. (20%)
3. What is biodiversity? Please describe four main threats to biodiversity and how each one damages biodiversity. In what ways would humans benefit by preserving biodiversity? (20%)
4. Please list three techniques that are frequently used to detect mRNA and describe their principles and applications on biomedical research. (15%)
5. What is RNA interference? Please describe its underlying mechanism, the significance of its discovery, and potential biomedical applications. (25%)