

1. Explain the following terms : (15%)
  - 甲、 *Median Lethal dose (LD50)*
  - 乙、 *Gross primary productivity (GPP)*
  - 丙、 *Dew point*
  - 丁、 *Biodiversity*
  - 戊、 *El-Nino*
2. In the recent decades, the carbon cycle in the ecosphere has been significantly disturbed by human beings. Please describe the carbon cycle in terms of processes among the environmental media (e.g. ocean, sediments, atmosphere, etc) and agents. Also discuss how the human intervene the carbon cycle and its effects. (15%)
3. What are the six criteria pollutants designated by USEPA (also adopted by Taiwan to set our air quality standards)? What are the major sources of these pollutants? (10%)
4. What is toxicity? What are the factors to determine whether a chemical is harmful? Please distinguish between bioaccumulation and biomagnifications. (15%)
5. List the three basic characteristics of an ecosystem and define them briefly. (9%)
6. List three major service functions of wetlands. (6%)
7. Select three sources of energy – one conventional (e.g. coal, petroleum, etc.) and two alternative – and list two advantages and two disadvantages of each in terms of cost, jobs lost or gained, environmental impact, or potential for supplying energy. Of the three, which energy source do you believe is the most desirable. (15%)
8. Explain why there are so many species on Earth, even when the competitive exclusion principle suggests that competition should lead to extinction of all but the most fit. (15%)