

Please answer **ALL** questions.

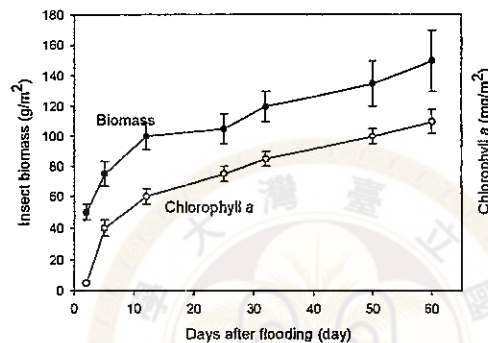
Each question carries different marks.

You can use either **ENGLISH** or **CHINESE** to answer the questions.

1. **DEFINE** the following terms and **GIVE** one example for each term. (15%)

- (A) Ecological niche.
- (B) Succession.
- (C) Keystone species.

2. A study was carried out to investigate the temporal succession of algae and aquatic insects in a river ecosystem following flash flooding. The major result has been summarized as below. Abundance of algae and aquatic insects are expressed as biomass, g/m^2 , and concentration of chlorophyll *a* (葉綠素 *a*), mg/m^2 , respectively. What conclusion(s) you can draw from the plot below? (10%)



3. Biodiversity (生物多樣性) is undeniably of value. However, many species are at risk as a result of increased human activities. The aim of biological conservation is to prevent individual species, or sometimes whole communities, from becoming extinct either regionally or globally. **NAME** three practical (可行的) biological conservation measures and **GIVE** one example for each of them? (15%)

4. Describe the difference between point sources and non-point sources of pollutant input into the environment? List at least one example for each. (10%)

5. Briefly define and explain the relevance to environmental science of the following terms: (20%)

- (A) Bioavailability
- (B) Biomagnification
- (C) Bioconcentration factor
- (D) Kyoto Agreement
- (E) Biogeochemical cycle

6. 美國環保署於 2002 發表一份報告，認同跨國氣候變遷小組 (Intergovernmental Panel on Climate Change, IPCC) 所提「人類活動產生的溫室氣體是全球暖化之原因」。請以你的環境科學專業詳細回答下列相關問題：

- (1) 自然界除了二氧化碳外還有哪些溫室效應氣體，其對人類生活的潛在影響為何 (8 分)？
- (2) 請以綠色能源觀點探討有何行動策略可協助降低溫室效應氣體 (10 分)。
- (3) 請以美國環保署所訂定之風險評估架構 (危害鑑定、暴露評估、效應評估、風險特性化) 來探討溫室氣體對氣候變遷所造成生態系之影響 (12 分)。

試題隨卷繳回