

## 第一題(25%)

請翻譯下列文字為中文。

Ecology is the scientific study of the relationships that living organisms have with each other and with their natural environment. Topics of interest to ecologists include the composition, distribution, amount (biomass), number, and changing states of organisms within and among ecosystems.

Ecosystems are composed of dynamically interacting parts including organisms, the communities they make up, and the non-living components of their environment. Ecosystem processes, such as primary production, nutrient cycling, and various niche construction activities, regulate the flux of energy and matter through an environment. These processes are sustained by the biodiversity within them.

Biodiversity refers to the varieties of species in ecosystems, the genetic variations they contain, and the processes that are functionally enriched by the diversity of ecological interactions.

## 第二題(25%)

請一一列舉地球上陸域生物群落區系(terrestrial biomes)之主要類別，例如陸地上有凍原(tundra)、草原(grassland)、熱帶雨林(tropical rainforest)等等 9 類至 15 類的生物群落區系。並請分別簡要說明其植群結構、氣候特色、及全球大致分佈。

## 第三題(25%)

請一一列舉並定義各類生物種間關係，例如競爭(competition)、片利共生(commensalism)等等約有 7 類至 10 類生物種間關係。並請以臺灣的生物為例說明這些生物種間關係。

## 第四題(25%)

臺灣杉(*Taiwania cryptomerioides*)、柳杉(*Cryptomeria japonica*)、巒大杉(*Cunninghamia lanceolata*)這三種針葉樹是溪頭實驗林的主要栽植樹種。請設計一個觀察實驗及一個操弄實驗，來探討這三種植物在不同光度下生長速度的差異。

試題隨卷繳回