

國立嘉義大學 99 學年度

生物資源學系碩士班(甲組)招生考試試題

科目：專業英文

請將下列英文翻譯成中文

1. Plants take in carbon dioxide for photosynthesis, the process of changing light energy to chemical energy. Each time a plant takes in one molecule of carbon dioxide gas, it loses hundreds of water molecules; plants lose ninety-five percent of the water they take in through these pores. Some plants' pores can tighten to save water during conditions of high carbon dioxide. The proteins that control the tightening of a plant's pores are enzymes called carbonic anhydrases. The researchers observed that for every molecule of carbon dioxide taken in by the plants, they lost forty-four percent less water. (25 分)
2. Frogs around the world are in bad situations, with nearly one-third of the world's 6,317 species on the edge of extinction. Threats to amphibians include the deadly chytrid fungus (*Batrachochytrium dendrobatidis*), which infects amphibians' skin and interferes with their ability to absorb water and oxygen. So far, no cure or prevention for chytrid fungus exists. Other threats to frogs include habitat destruction, pollution and pesticides, climate change, invasive species, and over-harvesting for the pet and food trades. (25 分)
3. Bacteria and viruses can be problems for insects. Insects, however, have very effective immune systems for fighting illness. For instance, insect blood cells are quickly mobilized to surround and digest the invading bacteria. At the same time, the fat body--a tissue analogous to the mammalian liver--produces large quantities of antibacterial proteins. In principle, gene therapy could be used to treat some insect illnesses. A fruit fly (or any kind of insect) might suffer mutations in certain critical genes--tumor suppressor genes, for example. If tumors developed as the result of the mutation, then one could add a normal copy of that gene to the fly. Such gene therapy could stop the formation of tumors. (25 分)
4. The range of a species is determined by ecological requirements and historical factors. Among the latter, climatic oscillations through geological time are one of the most important in determining the current distribution of species. In Europe, southern peninsulas have served as refugia during cold periods, from which formerly glaciated areas were recolonized during interglacial periods. However, recent evidence is challenging the pervasiveness of this 'Pleistocenic-southern-refuge' scenario, revealing more complex evolutionary histories for many taxa. For instance, in some species genetic differentiation among lineages predates Quaternary glaciations. In addition, southern peninsulas were not the only glacial 'hot spot' refugia, but other 'cryptic' refugial areas have been identified in central Europe. (25 分)