

# 國立中山大學 107 學年度碩士暨碩士專班招生考試試題

科目名稱：科學英文【海科系碩士班甲組、乙組】

題號：458001

※本科目依簡章規定「不可以」使用計算機(問答申論題)

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英文翻譯成中文，每題二十分

1. Ocean acidification is the decrease in the pH (scale of acidity and alkalinity) and increase in acidity of the Earth's oceans. It is caused by the increase of carbon dioxide ( $\text{CO}_2$ ) in the atmosphere emitted by burning of fossil fuels. More than 30% of the carbon dioxide in the air goes into the oceans. Carbon dioxide molecules are dissolved into water gradually. The products of this process are hydrogen ions ( $\text{H}^+$ ) and bicarbonate ions ( $\text{HCO}_3^-$ ), and thus excess carbon dioxide in the atmosphere can decrease pH of water bodies.
2. Photosynthesis is a process used by plants, algae and cyanobacteria to fix carbon dioxide and produce biomass. Solar energy is used as a driving force in this process, and oxygen is released as a side product. The primary product of photosynthesis is triose phosphate, which is converted to glucose, starch, cellulose, lipids and other compounds.
3. Alternative energy such as solar energy, wind power, ocean current energy and bioenergy can replace part of fossil fuels to generate energy for human use. Use of alternative energy can decrease emission of carbon dioxide, therefore ameliorate ocean acidification and global climate change.
4. Returning to the sea, just like invasion of land, has occurred in many groups of animals and plants. For flowering plants, traits adapted to the terrestrial environments have to change or adopt a new function to allow the plants to survive and prosper in the sea where water motion tends to rotate and move seeds.
5. National Sun Yat-sen university, one of the top universities in Taiwan, is located in the north of the harbor in Kaohsiung City. It has six colleges, including Marine Sciences, Arts and Literature, Science, Engineering, Sociology and Management.

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