大同大學九十二學年度研究所碩士在職班入學考試試題

考試科目:科技英文　　所別:生物工程研究所　　第 全 頁

註:本次考試 不可以參考自己的書籍及筆記； 不可以使用字典； 不可以使用計算器。

1. The ginkgo tree is remarkable in many ways. Although indigenous to Korea, China and Japan, the tree can be found in parks and along city sidewalks around the world. It may grow as high as 40 meters and live for more than 1,000 years. Ginkgo fossils have been dated as far back as 250 million years ago, and Charles Darwin referred to the tree as "a living fossil." Nowadays, however, the ginkgo's primary claim to fame is the extract obtained from its fan-shaped leaves. (人名請沿用原文，ginkgo 為銀杏) (20%)

2. Hair, scales, fur, feathers. Of all the body coverings nature has designed, feathers are the most various and the most mysterious. How did these incredibly strong, wonderfully lightweight, amazingly intricate appendages evolve? Where did they come from? Only in the past five years have we begun to answer this question. Several lines of research have recently converged on a remarkable conclusion: the feather evolved in dinosaurs before the appearance of birds. (20%)

3. Osteoporosis afflicts about 10 million Americans, especially women past menopause. Fully half of all postmenopausal women will incur an osteoporosis-related fracture during their lives. Fortunately, the outlook for people with osteoporosis has never been better. Drugs are now available that can restore lost bone and thereby greatly reduce the risk of additional breaks. (osteoporosis 為骨質酥鬆症，menopause 為停經) (20%)

4. Complex living organisms originate from simple elements. Carbon, hydrogen, and oxygen combine to make up many different kinds of biomolecules such as carbohydrates and fatty acids. The addition of nitrogen, as well as sulfur, makes possible the amino acids that combine to form proteins. In turn, added phosphorus provides the ingredients for making DNA, RNA, and complex lipids. (20%)

5. The activities within a cell are similar to the transportation system of a city. The cars, buses, and taxis correspond to the molecules involved in reactions (series of reactions) within a cell. The routes traveled by vehicles likewise can be compared to the reactions that occur in the life of the cell. Note particularly that many vehicles travel more than one route---for instance, cars and taxis can go anywhere---whereas other, more specialized modes of transportation such as subways and streetcars are confined to single paths. Similarly, some molecules play multiple roles, whereas others take only in specific series of reactions. (20%)