

國立高雄師範大學九十四學年度博士班招生考試試題

系所別：科學教育研究所

科 目：近代生物學（全一頁）

- 一、 Describe the major consequences of photorespiration and two important photosynthetic adaptations that minimize photorespiration. (15%)
- 二、 Explain how linkage mapping, physical mapping, and DNA sequencing each contributed to the genome mapping project. (10%)
- 三、 Define and compare the fields of proteomics and genomics. (10%)
- 四、 Outline the procedures for cloning a eukaryotic gene in a bacterial plasmid and explain how eukaryotic genes are cloned to avoid the problems associated with introns. (15%)
- 五、 Hundreds of millions of dollars are spent each year in search for effective treatments for cancer; far less money spent on preventing cancer. What kind of prevention programs we make to help prevent cancer? What factors might impede such programs? (10%)
- 六、 DNA technology is a promising tool for practical applications. Please discuss its application in details. (10%)
- 七、 Please contrast the differences between the eukaryotic cells and prokaryotic cells. (10%)
- 八、 ATP is an important fuel for cellular activity. How do the cells produce? What fate of cells in absence of ATP? (10%)
- 九、 One cell was divided into two cells, which shorten the length of chromosome in daughter cells. The changes of length of chromosome in cell division account for the facts that animals are destined to death. Suppose the logics are correct, how do you support for this idea? (10%)