編號： 338

國立成功大學 109 學年度碩士班招生考試試題

系　　所：臨床醫學研究所

考試科目：分子生物學

考試日期：0211，節次：3

※ 考生請注意：本試題不可使用計算機。　請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

1. The Nobel Prize in Physiology or Medicine 2018 was awarded jointly to James P. Allison and Tasuku Honjo "for their discovery of cancer therapy by inhibition of negative immune regulation. Describe briefly their important discoveries? What are their significance and impact on biomedical research and cancer therapy? (10%)

2. Please briefly describe and define iPS cells and give an example of their potential application and limitation in human diseases. (10%)

3. What is CRISPR gene editing, and how does it work? (10%)

4. What are exosomes and what do they do? Give an example of their potential application. (10%)

5. Please briefly describe the following terms. (30%)
   (1) Cell therapy
   (2) Autophagy
   (3) Post-translational modification
   (4) Alternative splicing
   (5) RNAi
   (6) Open reading frame

6. Please briefly describe the following methods. (30%)
   (1) Real time PCR
   (2) Enzyme-linked immunosorbent assay
   (3) Chromatin immunoprecipitation assay
   (4) Next generation sequencing
   (5) Southern blot
   (6) TA cloning