

國立成功大學  
110學年度碩士班招生考試試題

編 號：319

系 所：細胞生物與解剖學研究所

科 目：生物化學

日 期：0203

節 次：第 1 節

備 註：不可使用計算機

※ 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. What are the primary structure, secondary structure, and tertiary structure of a protein? (15%)
2. What is protein denaturation? (5%)  
How can a protein be denatured? (5%)
3. What is DNA denaturation? (5%)  
How can a DNA be denatured (5%), and then renatured (5%)?
4. What is real-time quantitative reverse transcription polymerase chain reaction (qRT-PCR)? Please discuss the principle, experimental process, and the purpose of this technique. (15%)
5. What are the differences between qRT-PCR and standard PCR? (10%)
6. Extracellular signal molecules often bind to cell-surface receptors. However, certain molecules bind to their receptors situated in the cytoplasm. Please give an example and explain how ligands-receptors can bind in the cytoplasm. (10%)
7. What are the differences between the “enhancers” and the “promoter” of a gene? (10%)
8. Please describe the function of the following enzymes.
  - (A) Kinases (5%)
  - (B) Restriction enzymes (5%)
  - (C) Matrix metalloproteinases (5%)