

國立中央大學 106 學年度碩士班考試入學試題

所別： 物理學系生物物理 碩士班 不分組(一般生)

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科目： 普通生物

本科考試禁用計算器

*請在答案卷 內作答

參考用

問答題

1. (20 分) Taxonomy.

(1) Please write down the modern biology system of classification. (7 分)

(2) What are the three domains of life? What are the major differences of between these three domains? (7 分)

(3) What is the human taxonomy? (6 分)

2. (20 分) Water is one of most important material in living organisms.

(1) Please write down the important physical/chemical/biological properties of water. (7 分)

(2) Please estimate how much water (by weight) in a human cell. You can assume the size of a cell by your knowledge. (7 分)

(3) Please estimate how many water molecules in this cell. (6 分)

3. (20 分) The compositions of a cell.

(1). Please describe the basic materials of a cell. (10 分)

(2). Please describe the basic organelles/structures of a cell. (10 分)

4. (20 分) What is the Polymerase Chain Reaction (PCR)? Please describe the purpose, the working mechanism and the limitation of PCR.

5. (20 分) In your opinion, what is the most important biological experiment in the history? Please write your reason and the describe the impact of the experiment.