

科目 普通生物學 類組別 A-1 共 1 頁第 1 頁 *請在試卷答案卷(卡)內作答

一、問答題 (每題 10 分)

1. Describe the synthesis of a protein from amino acids.
2. Why don't living organisms violate the Second Law of Thermodynamics? What is the ultimate energy source for most forms of life on Earth?
3. Name four types of cell-to-cell junctions and the function of each. Which allow communication between the interiors of adjacent cells?
4. What is the difference between carbon fixation in C₃ and C₄ plants? Under what conditions does each method of carbon fixation work most effectively?
5. Diagram and describe the eukaryotic cell cycle. Name the various phases and briefly describe the events that occur during each.
6. Explain the meaning of Mendel's Law of Segregation and Law of Independent Assortment. Under what circumstances does the Law of Independent Assortment apply? When is it violated?
7. List four types of innate behavior and provide an example of each.
8. Explain the evolutionary trends in plant reproduction. How did these changes help plants adapt to increasingly dry environments?

二、解釋名詞 (每題 2 分)

1. abscisic acid
2. coevolution
3. Biological clock
4. Bohr effect
5. lateral line organ
6. parthenogenesis
7. carrying capacity
8. ecological niche
9. secondary consumer
10. oligotrophic lake