

本試題是否可以使用計算機:  可使用,  不可使用 (請命題老師勾選)

1. Describe the molecular features of the four hierarchical levels of structure that determine the conformation of a protein. (8%) It has been said that "the function of a protein is determined by its conformation, which in turn is specified by its amino acid sequence." Do you agree? Why? (7%)
2. Describe the different methods that cells use to restrict proteins to specific regions of the plasma membrane. (10%)
3. Membrane transport proteins, providing passageways across the bilayer for select substances, fall into two classes: carriers and channels. Please define these two transport proteins. (15%)
4. Cell communication is mediated by a complex network. Different cell types use similar signals to achieve completely different outcomes, for example, norepinephrine stimulates hormone secretion by cells of adrenal medulla and increases the contraction amplitude by heart muscle. How do you explain these phenomena? (15%)
5. Discuss the roles of the cytoskeleton in animal morphogenesis. How does the cytoskeleton participate in cell shape changes and cell motility underlying morphogenesis? How do the cellular processes mediated by the cytoskeleton contribute to the form of the animals? (15%)
6. Please **briefly** describe the following terms:
  - A. Cytokinesis (5%)
  - B. Amphipathic (5%)
  - C. Second messengers (5%)
  - D. Oxidative phosphorylation (5%)
  - E. Protein isoelectric point (5%)
  - F. Exocytosis (5%)