

※ 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。  
簡答題(每題十分, 共十題)

Brief Answer Questions (10 points for each question)

1. How was it determined that peptides are synthesized from their N-terminus to their C-terminus?
2. Summarize the relationship between genome size, repetitive DNA, transcribed DNA, and protein-coding exons in the human genome.
3. How do receptors respond to agonists and antagonists?
4. Explain why cells contain an array of protein phosphatases as well as protein kinases.
5. Explain the trend in melting point with increasing fatty acid chain length. Explain the trend with increasing number of double bonds.
6. What did Meselson and Stahl's experiment reveal about DNA replication?
7. Describe the fluid mosaic model of cell membrane.
8. Compare DNA and RNA polymerases with respect to structure, substrates, products, mechanism, error rate, and template specificity.
9. Summarize the posttranscriptional modifications of eukaryotic mRNA.
10. Discuss the advantages, in terms of protein structure and evolution that result from alternative mRNA splicing.